

ATTACHMENT I – Summary of responses received

Question 1	<p><i>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 made available to the end user.</i></p>															
ENTITIES	Y	N	MAIN REASONS EXPLAINED													
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C	(*) BC	A	<p>There are multiple solutions available in Portugal, whether fixed, mobile or using cable distribution networks, and, in future, energy networks in PLC solutions (A). New operators are not subject to any constraints on direct access to their customers (A). OLL: <ul style="list-style-type: none"> • does not encourage the installation, nor competition, of new local access networks (A); • is based on technology which already exists, limiting innovation and the search for new technological solutions (A); • introduces new costs for the notified operator (additional technical, commercial and administrative resources) (A); • bases itself on access to a specific physical medium – copper pairs – with several limitations (A); • goes contrary to the principles of the 99 Review (A); • goes contrary to the incentive to invest in alternative and own infra-structures (A); • it will, in the majority of situations, be an unacceptable solution, as regards the mid/long term (B); • it is a factor which may encourage competition in general and promote innovation in Portugal, but it is not the only one, especially on the corporate market (C). </p>													
ENTITIES	Y	N	SERVICES WHICH COULD BE MADE AVAILABLE TO THE END USER													
			Internet on BL	Web-TV	Video-conference	Video-clips	SFT	Dedicated Circuits	LAN Interconnection	Multimedia	B2B	E-commerce	VPN	Advanced e-mail	Access to virtual public offices	Tele-work
OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	D E F G H I J L		E F	E	E	E	D I J	D	D	F						
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	M N O		M O								O	M	O	O	M	M
Associations FENACOOOP-P UGC-Q	P Q		Q											Q	Q	
Other ent. CTT-R DGCC-S	R S		R S			S	R S			S						
(*) In the short term (B).																

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Question 2		Do you think that the price of LLU may have an impact on investment in alternative infra-structures? Which other mechanisms (in addition to price regulation) do you think could be appropriate to promote investment in alternative infra-structures in the mid and long term following the implementation of LLU?										
ENTITIES	Y	N	LIMITING THE NO. (OR RATIO) OF CUSTOMERS OF EACH OLO UNDER LLU	RE-EVALUATING THE USO	IMPOSING OBJECTIVES FOR THE DEVELOPMENT OF INFRA-STRUCTURES	LIMITING LLU IN AREAS WHERE THERE IS AN ALTERNATIVE INFRA-STRUCTURE	PERIODICAL REVIEW IN ORDER TO REDUCE IT OR EXTEND IT TO OTHER OLO	RESERVING CAPACITY FOR ITS OWN NEEDS	TERMINATION WHEN THE END CUSTOMER CHANGES RESIDENCE	LIMITING LLU TO LINES INSTALLED UP TO 01.01.2000		
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C	A	B	ABC	A	A	A	A	A	A	A		
	C	<p>Imposition of measures with a view to implementing infra-structures in areas in which there is less development, namely in rural areas (A).</p> <p>The NO should not be obliged to provide LLU in those situations where it is using shared systems on copper pairs (e.g., pair gain systems, multiplexing systems) and whenever this entails the installation of new copper cables (A).</p> <p>By controlling the OLO's business margins, which is more difficult to demonstrate, when there is a suspicion that they use LLU at modicum prices, for market tests, with business risks which are almost nil (C).</p>										
ENTITIES	Y	N	IMPOSING OBJECTIVES FOR THE DEVELOPMENT OF INFRA-STRUCTURES	IMPOSING A MAXIMUM TIME LIMIT FOR THE LEASING OF EACH LINE	INTRODUCING DISCOUNT FACTORS, WITH REGARD TO THE LEVEL OF INVESTMENT	LIMITING LLU IN AREAS WHERE THERE IS AN ALTERNATIVE INFRA-STRUCTURE	CONCEDING PRIORITIES IN ACCESS WITH REGARD TO INVESTMENT	ACCESS TO THE SUBSOIL/ CONDUITS	ACCESS TO INFRA-STRUCTURES FOR CONDOMINIUMS/ ESTATES	ACCESS TO THE CABLE TV NETWORK	OWNERSHIP OF WIRELESS LICENCES OR OTHER MEANS	
OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	D	H	F	D	D	FG	D	DEHI	DE	H	G	
	E F G I J	<p>The strategy carried out in Holland is not the most suitable, insofar as it assumes that the ideal for developing the market is multiplying access infra-structures which must of necessity involve high costs, and which will encounter difficulties in achieving returns, given the natural limitations of the market (especially in a smaller market such as in Portugal). In effect, the incorrect use of this mechanism (price) may block the development of the truly universal supply of competing broadband services in Portugal (F).</p> <p>Greater co-operation between the ICP and local authorities so that obstacles will not unjustifiably be put in the way of the installation of infra-structures, which may compromise the technical, economic and financial projects which the OLO's undertake to implement for their licences (H).</p> <p>In order to enable the OLO's to plan their network efficiently, with a view to the commercial provision of innovative and competitive services, the obligations involved in the licences relating to coverage of the alternative infra-structures, namely FWA and cable television, should be reviewed by the regulator with a view to their being made more flexible (J).</p> <p>During this stage, the policy adopted in Holland may be adjusted, with a view to pursuing the objectives related to the creation of alternative infra-structures (L).</p> <p>One way of providing an incentive to the OLO's establishing alternative infra-structures is, in addition to price regulation, the creation of special telecommunications plans by means of the Community Support Framework (CSF) or tax bonuses resulting from this type of investment (L).</p>										
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	M	N	M									
	O	<p>The use by the OLO's of the existing infra-structure can only be justified whilst they benefit from the advantages of the notified operator's economy of scale. In a subsequent situation, in which the OLO holds a significant market share, or the aforementioned advantages cease to be effective, the OLO may then opt to create its own access network, if the technical and competitive framework at the time so justifies (O).</p> <p>The approach used in Holland is valid, although it should be pointed out that a price migration based on historic prices to prices based on current costs assumes that this is justified by the continuous updating and modernisation of the infra-structure in the local loop (O).</p>										
Associations FENACOOP-P UGC-Q	Q	By making current accesses less burdensome, we will increase the number of consumers/users, providing operators with a better return, not by means of margins, but rather by means of quantity (Q).										
Other ent. CTT-R DGCC-S	R	S	<p>In addition to price regulation, the new access technologies (FWA, UMTS, cable-modem, etc.), through their own technological features, will create an extreme desire amongst users, which will justify the creation of those very infra-structures by the OLO's (R).</p> <p>Analysing the indicators which will enable an evaluation of the degree of competition or of the objectives imposed, such as market share or infra-structure development, seems to be adequate for a periodical review of market conditions (price) (S).</p>									

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Question 3	<i>Which variants do you consider most appropriate to the specific case of Portugal?</i>			<i>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?</i>														
	<i>Which additional options do you think should also be considered?</i>																	
	ENTITIES	F A	A P	B A	REMARKS	1st PRIO.			2nd PRIO.			3rd PRIO.			30/06/01			REMARKS
					F A	S A	B A	F A	S A	B A	F A	S A	B A	F A	S A	B A		
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C			A B C				A	A					A				A B C	Offering the 3 alternatives in parallel may mean a large spectrum of effort between all operators which may be inappropriate, in relation to the timescale envisaged (B).
OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	D E F G H I J L	E F G H I J L	E F G H I	BA should be necessary, as a supplement to FA (D). BA should envisage the possibility of the OLO also providing narrowband services (F). BA has several advantages (I): • Sole supplier of equipment (compatibility) • Minimisation of problems in terms of <i>housing</i> ; • Presumed greater speed in offering the service; • Provision of services which in practice implement this solution (leased circuits via HDSL); • Possibility of offering asymmetric services; • Greater choice for the Customer (multiple operators). FA is the option which is the most beneficial in the long term, since the OLO can control all the services to be provided to the Customer, namely as regards freedom of commercial choice, and in terms of service quality (J). BA is a virtual form of LLU insofar as the OLO would merely re-sell the service offered by the NO (L).	D E F G	L	F G H I	I L		D E		D E I		D				Process carried out simultaneously with the start of PT's provision of the ADSL service (D). On 30/06/01, the largest possible no. of options made available (E). BA should be made available 6 months in advance of the commercial provision by the incumbent operator (F). The three solutions should be available on the market at the same time and in the shortest possible time (G H). Since BA is the alternative which is the most simple to introduce, it should be available starting from 01/01/01. FA and SA - alternatives which enable competition to be introduced more effectively - should preferably be available from 01/01/01, but their introduction should not go beyond the first quarter of 2001 (H). In addition to the desirable scenario, in which all three options are available, the alternative which seems to be the most realistic in the short term is BA. The FA alternative is, in turn, the most desired, although it may entail a longer development and installation periods (I). Since under the BA option it will be the NO which controls the technological solution to be implemented, it has become particularly relevant for this option to assure minimum offer (J). There are no reasons to justify the phasing of the LLU, and so there should be compliance with the timescale proposed by the ICP and by the EC (J). SA should be adopted as a starting point, and it should be possible to then implement FA (L).
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	M N O	M N O	M N O	Supplementary options (N). The options should not be restrictive in order to assure complete competitiveness on the market (O).													M	The BA alternative should be made available in situations in which the NO already has broadband equipment installed (M). It should be considered that there may be a number of physical accesses to the user's premises with two pairs of wires (O).
Associations FENACOOP-P UGC-Q	P Q			Consumers benefit from the option which enables them to have direct contact with the operator (P).													Q	In order to achieve the objective date, the BA alternative should be implemented (Q).

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Other ent. CTT-R DGCC-S	R S	S	S															
Key: FA – Full Access; SA – Shared Access; BA – Bitstream Access																		

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Question 3 (...)	<p><i>What types of services and technologies might you (or do you intend to) use under each variant identified (whenever possible identify the relevant standards)?</i></p> <p><i>What specific considerations should be taken into account in the minimum offer for bitstream access?</i></p>					
ENTITIES	FA			SA		MINIMUM OFFER FOR BA
	ADSL/ADSL LITE	SDSL	HDSL2	IDSL	ADSL/ADSL LITE	
<p>Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C</p>	<p>The provision of BA should, as far as possible, be neutral from a technological point of view, and should not be limited to just one technology or technology family, and the selection thereof should be the responsibility of the notified operator, whose selection process will use criteria relating to quality, performance and economy (A).</p> <p>The preferred technologies will be those standardised by ETSI which will guarantee the availability of the BA alternative (B).</p> <p>The services to be offered under the BA alternative will be, during the initial stage, high speed access to the Internet, <i>e-business</i> solutions and VPN-IP (C).</p>					<p>The definition of a minimum offer will not be the most suitable (A).</p>
<p>OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L</p>	<p>ANSI T1.413 issue 2 (D) ETSI TM 06006 (D) ETSI DTR/TM 03050 (D) ETSI ETR328 (D H) ITU G.992.1 (D) ITU G.992.2 (D H) ITU G.994.1 (D) ITU G.995.1 (D) ITU G.996.1 (D) ITU G.997.1 (D)</p>	<p>ETSI DTS/TM 06011 ITU G.shdsl ITU G.994.1 ITU G.995.1 ITU G.996.1 ITU G.997.1 (D H)</p>	<p>ETSI TS 101 135 (D H) ETSI.ETR152 (D) ITU G.991.1 (D) ITU G.994.1 (D) ITU G.995.1 (D) ITU G.996.1 (D) ITU G.997.1 (D)</p>		<p>ANSI T1.413 issue 2 (D) ETSI TM 06006 (D) ETSI DTR/TM 03050 (D) ETSI ETR328 (D H) ITU G.992.1 ITU G.992.2 (D H) ITU G.994.1 ITU G.995.1 ITU G.996.1 ITU G.997.1</p>	<p>BA should be framed by regulations which oblige PT to deliver ATM traffic at the point stipulated by the OLO, by means of QoS levels established by the ICP (D).</p> <p>The price list for the portion relating to the transport of ATM traffic should be dependent on the distance between the exchange where the DSLAM is located and the point of interconnection with the OLO (D).</p> <p>BA should, from the outset, consider HDSL and ADSL (ETSI ETR 328 and G.Lite – G.992.2 by UIT) (E).</p> <p>Mechanisms should be assured to control the provision of BA, since this is completely dependent upon the NO. Prices, time limits, levels of maintenance and technological evolution are some of the aspects to be considered (I).</p> <p>It is important to determine the type of interfaces (as per the main standards, with emphasis on G.703), transmission support (ATM, <i>Frame Relay</i>, etc), as well as the definition of an adequate SLA (I).</p> <p>In BA it is vital to provide a minimum range of xDSL solutions in order to enable the OLO's to provide the end user with a varied range of broadband services. Therefore, in addition to the minimum offer mentioned by the ICP, we also propose a minimum throughput of 512 kbps in the ADSL and G.lite alternatives (J).</p>
	<p>IP Services ATM Services Interconnection of LANs Connection to OLO's IADs VoD High speed access to the Internet</p>	<p>IP Services FR Services PRI/E1 Connections nx64 Accesses Connection to OLO's IADs</p>	<p>PRI/E1 Accesses nx64 Accesses</p>		<p>IP Services ATM Services Interconnection of LANs Connection to OLO's IADs VoD High speed access to the Internet</p>	
	<p>The technologies as regards traffic aggregation should be ATM and IP in all the alternatives (E). ADSL and G.lite alternatives (J).</p>					
<p>Manufacturers LUCENT-M ALCATEL-N ERICSSON-O</p>	M	M	M	M	M	
<p>Associations FENACOOOP-P UGC-Q</p>						
<p>Other ent. CTT-R DGCC-S</p>						

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Question 3 (...)	<i>In a first analysis, which relevant conditions do you believe to be necessary to assure so that the options identified may be successfully implemented?</i>									<i>Is there any option, that in your opinion should not be implemented, (...)?</i>			
ENTITIES	MAIN CONDITIONS STATED									FA	SA	BA	No
	TEMPORAL AVAILABILITY	PRICE DETERMINATION	DEFINITION OF FREQUENCY PLAN/EMC	RULES FOR COLLOCATION	RULES FOR THE PROVISION OF BA	FIXING OF DATES	(DB WITH) RECORD DETAILS	QoS	REFERENCE OFFER FOR LLU				
Notified Op. and Semi-public undertakings/ Subsidiaries	A	A C	B	A	A C					(*)	(*)		
PT-A	Business and operational understanding between the NO and the OLO (A)												
TMN-B	Establishment of transparent mechanisms which facilitate negotiation and operational relations with the NO (C).												
PT PRIME-C	Definition of measurable SLAs for the alternative identified (C).												
OLO		D F G J		D J		D J	D F G I	F G	D H				
ONI-D	One of the conditions which is vital to assure that the LLU (under the alternatives and options identified) is successfully implemented is the automatic interconnection of the OLO's and PT's information systems (D F G).										D		E
TELEWEB-E	It is compulsory for PT to establish a separate and specific accounting system, for the cost of the provision of LLU, similar to that relating to interconnection and suitable for monitoring the prices established and controlling any discriminatory attitudes (D).												F
NOVIS-F	It is prohibited for PT to reserve - in advance and for its own use – the better quality circuits which thus make it difficult for its competitors to provide services (D).												G
OPTIMUS-G	It is prohibited: (i) to refuse to provide space for collocation, when this space is used to provide its own XDSL services; (ii) to refuse information on access conditions when this information is available internally; (iii) to apply tariffs which are discriminatory with regard to those applicable to its own services or associated companies or subsidiaries (D).												H
TELECEL-H	Fixing of an initial period of 2 years, at the end of which the regulator will compulsorily re-evaluate the procedures for inter-operator relations, as well as the conditions initially established for LLU provision from 30/06/2001, including the respective prices (D).												I
JAZZTEL-I	Penalties for non-compliance with dates or other instances of non-compliance (D F G).												J
MAXITEL-J	In the case of BA, the condition will be for the NO to deliver the bundled traffic to the OLO at a limited number of points throughout the Country (E).												K
NETRAIL-L	Existence of clear technical standards, in compliance with international standards (H).												L
	Existence of SLAs which contemplate the various stages of the process, from availability for collocation, to the evaluation of the feasibility of implementing the service on a certain copper pair, to the routing of accesses and the diagnosis and repair of failures (H).												
	Re-balancing of tariff (J).												
	The relevant conditions which are necessary to assure that the LLU is successfully implemented should be analysed as two strands: economic and technical.												
	The economic conditions must assure that the NO is not penalised by the LLU and, at the same time, that the OLO's continue to invest in alternative accesses.												
	The technical conditions are based on the use of high-frequency band of the telephone pairs by means of a cable which has not been prepared to support them.												
	The monitoring of service quality and of those who diminish it should be assured (L).												
Manufacturers		M	M	M			O	M	O				M N O
LUCENT-M													
ALCATEL-N													
ERICSSON-O													
Associations	Supplies which consumers contract from suppliers should ostensibly be audited, so that the price/quality ratio is true and is maintained. The NO will be responsible for maintaining these services 24h a day (Q).										Q		
FENACOOOP-P													
UGC-Q													

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Other ent. CTT-R DGCC-S	The provision of bitstream access should be made available at the same time as, or even before, the start of the incumbent operator's activity as a provider of xDSL services. The incumbent operator should cumulatively structure its accounts in order to enable the regulator to monitor compliance with the principle of non-discrimination (S) .				S
(*) These should be relegated to a broader timescale, owing to operational, business, confidentiality and security constraints (A) (C) .					

ENTITIES	Y		REMARKS	METHODOLOGY					Y		MAIN SOLUTIONS PROPOSED/REMARKS	
	N			ECPR	LR(A)IC	FDC	FAHC	OTHER	N			
Question 4	<i>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 the most suitable for pursuing this principle at LLU?</i>						<i>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?</i>					
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C	A	C	The application of the cost-orientation principle should be restricted to a period of time considered reasonable (A) .		C	C	C	Current costs (A)	A		Compatibility between retail prices and the cost of the LLU cannot be gauged by referring to the price of a monthly subscription, at the risk of the price to be paid by the LLU being less than the cost borne by the NO. In effect, the monthly subscription is a provision associated to a specific service - FTS, whilst the LLU will be the basis for supplying a set of services (amongst which FTS will probably not be the most relevant) by means of <i>up-grading</i> local access (A) .	
OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	D	E	The price which applies to the OLO's should be lower than the retail prices of the incumbent operator (D E F G) Rejection of approach via opportunity cost (ECPR) (F J) . (*)		D			European Best practices (D F H)	D	L	Any imbalances arising from failing to balance tariffs cannot be turned into elements leading to the penalisation of new operators (D) . The LRAIC methodology would be the most suitable cost rule. Nevertheless, there is a real danger that as a result of the lack of a incomplete re-balancing of the incumbent operator's retail prices, the application of the LRAIC can lead to a situation in which the costs to the new operator are higher than the retail prices, thus eliminating its ability to compete on the market, and therefore eliminating the interest of the LLU (F J) (**) . One possible approach is to determine an average price for installing local access and setting the period to be considered for its amortization (2 to 5 years). Based on this information, it can be determined which lines are still in the amortization period, and the OLO will pay the incumbent operator a monthly fee up to the end of the amortization period. In addition to this, maintenance costs must be determined, in the event that the NO continues to perform this maintenance (I) .	
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	M	O	The aforementioned principle should only be applied whilst the level of competition so justifies (M) .									
Associations FENACOOOP-P UGC-Q	P	Q		The use of modern technologies and efficient labour should be taken into account (Q) .					Q			
Other ent. CTT-R DGCC-S	R	S			R	S			R		Fixed provision (monthly subscription), even with the 6.7% increase seen during 2000, was still lower than the cost, based on PT's incumbent costs, and so the costing methodologies lead to incompatibilities (S) .	

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(*) Costs associated to collocation should reflect the price of the physical space which is reserved for the installation of equipment, and should be determined in accordance with its geographical location, in order to enable a better adaptation of the real cost versus LLU price. Provided that they are justified, incremental costs (and only those) associated to the air conditioning of rooms and to the power supplied to the OLO's may be considered, although disproportionate costs arising from past inefficiencies should not be included. In the case of the BA modality, costs should be based on the retail prices charged by PT for broadband availability services, and should be lower than these prices in order to take into account the economics involved in its availability on the wholesale market (D).

(**) In order to minimise the differences between the LLU prices and the retail price of the monthly subscription, the following mechanisms should be created (J):

- Immediate conclusion of the re-balancing of tariffs, preferably prior to the introduction of the LLU;
- In the event that re-balancing has not been completed by the date of the introduction of the LLU, its prices should be set by the regulator based on future LRIC, provided that they have been duly corrected.

Question 5	<i>Do you consider that the establishment 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?</i>		<i>If not, what considerations do you feel are relevant as regards the geographical area which should be considered for the application of geographically de-averaged prices?</i>	
ENTITIES	Y	N	REMARKS	MAIN CONSIDERATIONS STATED
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C	A	C	It avoids geographical asymmetries which could have negative consequences on the development of the country and regional planning within the context of the Information Society (A).	
OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	D	L	It is basically an issue of political option (D). The use of average prices for leasing copper cables (a generalised practice in the EU), enables more simple modelling for defining retail costs nation-wide (D). Without adversely affecting the fact that the establishment of average prices throughout the entire national territory may contribute towards simplifying tariffs, the fact that nation-wide retail prices are indistinct from the geographical area in which they are charged, differentiation in terms of the "wholesale market" loses interest somewhat (F G). The average price would be the most advisable, since in the eastern areas of the country which are less densely populated, the tendency is for costs to be higher (because of the lack of economies of scale), and so any other approach would potentially be a disincentive to implement LLU in those areas (I). The simultaneous promotion of competition in local access and of the mass dissemination of Internet access, within the context of the Information Society, entails the establishment of average prices for the LLU throughout the entire national territory (J).	A differentiation between rural and urban areas is accepted, taking into account that in the latter there would be greater economies of scale and smaller average line lengths (D). The definition of geographically de-averaged costs would be more complex, and would require much information in order to achieve a technical and economical characterisation of the different areas (D). Lower prices should be charged in the eastern part of the country, in other words, past the 50 km coastal strip which extends from Viana do Castelo to Setúbal (L).
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	M	O	The establishment of average prices throughout the entire national territory is a factor which determines the fact that the general population is guaranteed access to services within the context of the Information Society, although it may have a negative impact in promoting competition (M). The establishment of average prices throughout the entire national territory, despite the fact that they may be higher than the current costs of copper pairs in urban areas, may operate as a catalyst for a more rapid development of own infra-structures in urban areas, and, subsequently, an increase in competition on the local network (M). Since we are aware that geographical deaveraging would also make investment less appealing in rural areas when compared with urban areas, we feel that mechanisms should be created in order to encourage investment in rural areas and promote the objectives of the Information Society, but outside of the direct relations between the NO and the OLO. In this way, competitive conditions would be created, which would be the same for both parties (O).	

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Associations FENACOOP-P UGC-Q	Q	It becomes necessary to establish a price system which would enable services to be provided nation-wide and at prices which, in being distinct, will be much lower in areas which are themselves penalised as a result of their geographical isolation. The best solution is the differentiation of prices taking into account the standard of living of the different segments of the population. Otherwise, the only worthy solution is the establishment of uniform prices across the entire national territory (P).	In the event that there is price de-averaging, it should comply with social rather than economic criteria (P).
Other ent. CTT-R DGCC-S	R S	Because of the fact that the margin entailed in the provision of broadband services is greater than the margin involved in the provision of telephone services, economic viability is guaranteed as regard the provision of broadband services, even in urban areas (R). The price to new LLU operators should be oriented towards costs, and as such geographically de-averaging, and should not take the form of equal average prices for the entire national territory. Paying attention to the implications which may arise from the option stated above, it is felt that it may be an issue to analyse within the scope of the universal service (S).	

<p>Question 6 <i>Taking into account the different variants for the implementation of LLU and any other price components other than the cost of leasing the line (for example, line transfer costs), please identify all the relevant elements with regard to the costs associated to the implementation of the LLU.</i></p>						
ENTITIES	COSTS OF THE ACCESS NETWORK (A.N.)	COST OF A.N. EQUIPMENT	COSTS OF CIVIL ENG. ON THE A.N.	COMMERCIAL COSTS	INSTALLATION AND O&M COSTS	COSTS ASSOCIATED TO COLLOCATION
<p>Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C</p>	<ul style="list-style-type: none"> • Copper pair • Testing and maintenance equipment • Qualification of the copper pairs • Analysis of interferences • Survey of record information and technical features of the copper pairs 	<ul style="list-style-type: none"> • Modem • Frequency filtering • Multiplexing • Transmission of packets/cells • Switching/ • Aggregation of packets/cells • Management and supervision • Testing and maintenance 	<ul style="list-style-type: none"> • Construction of technical spaces for collocation • Remodelling to be performed in order to replace the initial conditions of the spaces provided. 	<ul style="list-style-type: none"> • Planning; • Development of business processes; • Service and commercial assistance; • Technical assistance; • Failure management; • QoS information; • Billing and collection; • Development of IS for supporting the provision of the service; • Dissemination of information relating to offer. 	<ul style="list-style-type: none"> • Qualification of copper pairs; • Compatibility tests; • Maintenance of copper wires; • Installation and operation of equipment and system. 	<ul style="list-style-type: none"> • Survey and registration of technical spaces; • Physical spaces; • Ceding of electrical infra-structures and protection systems in the event of a fault; • Air conditioning; • Security and surveillance; • Cleaning; • Fire detection and protection systems; • Installation of equipment.
<p>OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L</p>	<ul style="list-style-type: none"> • Average cost of Km. of cable pair up to DP or CD and from DP up to entrance of subscriber's premises • Average cost of maintenance of physical pair up to entrance of subscriber's premises (notification and repair of failures). • Registration costs 	<ul style="list-style-type: none"> • Costs of ADSL equipment (for PT) • The costs of 2Mb/s and nx64 Kbit/s leased circuits and remote installation circuits • Cost of ATM interfaces 			<ul style="list-style-type: none"> • Average cost of occupation of each MDF pair position. • Average cost passing each connection cable between MDF pair positions. 	<ul style="list-style-type: none"> • Average cost of m² in spaces of (a) high (b) low and medium density. • Average cost of closing off the desired area indexed to the respective perimeter • Average increased cost of supplying secure power (installation + Ah/month) • Average increased cost of supplying air conditioning • Other space maintenance costs.

ATTACHMENT I – Summary of responses received

Other ent. CTT-R DGCC-S		R				R				
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ATTACHMENT I – Summary of responses received

Question 8	<p><i>Do you consider virtual collocation and remote collocation to be viable alternatives to physical collocation? Under what circumstances?</i></p>								<p><i>To what extent do you think that the à priori intervention of the ICP, with regard to creating a framework of the conditions for co-installation, could contribute towards greater transparency and speed in this process?</i></p>		
ENTITIES	YES		NO		CIRCUMSTANCES					IMPORTANT	MEASURES
	VIRT.	REM.	VIRT.	REM.	LACK OF PHYSICAL SPACE	LACK OF SECURITY CONDITIONS	REDUCED DISTANCE BETWEEN THE MDF AND THE OOL'S PREMISES (REMOTE)	RESTRICTIONS TO THE TYPE AND FUNCTION OF THE EQU. (VIRTUAL)	OTHER		
<p>Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C</p>	A C	A C	(*)		A B	A	A	A			
	<p>Virtual collocation can only be an alternative by means of conditions to be established by the NO, namely as regards the type and functions of the equipment to be installed, preventing the NO from incurring non-returnable investments, namely in training staff to operate the OLO equipment (A). Some reservations in relation to virtual collocation, since it entails additional agreements between the operators involved, namely the necessary training to give to the technicians of the NO and the establishment of preventative maintenance agreements for the equipment (B)</p>										
<p>OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L</p>	G H I J L	D E F G H J L (**)	D E F		G L					D E G I L	<p>Speed up the process (D). Promote the survey of the spaces available (E G I). Both by the prior definition of conflict-resolution procedures, and by direct intervention in the event of disputes arising (G). Contribute towards greater transparency and speed in the negotiation process (L).</p>
<p>Manufacturers LUCENT-M ALCATEL-N ERICSSON-O</p>	M	M N O	O		M O	M				M N O	<p>Specific approach in cases where the length of the local loop exceeds the reach of the technology and where the incumbent operator already uses DLC or similar equipment (O).</p>
<p>Associations FENACOOOP-P UGC-Q</p>	Q	Q									
<p>Other ent. CTT-R DGCC-S</p>		R	R		R						

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(*) Some reservations (**B**).
 (**) It is important to take the following aspects into account:
 (a) this solution may not be economically attractive as it shows up any inefficiencies in the notified operator's network and respective structure costs, even taking into account any benefits resulting from economies of scale;
 (b) there is a need to guarantee service quality by means of SLAs, as well as to define clearly the responsibilities of each party;
 (c) intervention by the regulator is necessary in clearly and objectively defining the rules of business for this option (prices, operating and maintenance standards, length of SLAs, etc.)

Question 9										
Which parameters and quality of service indicators do you consider relevant to define in the scope of the LLU?										
ENTITIES	AVERAGE TIME FOR AVAILABILITY (*)	AVERAGE TIME FOR REPAIRING FAILURES	TRANSMISSION QUALITY	ERROR RATE	TRANSMISSION OR EFFECTIVE THROUGHPUT RATE	TIME OF DELAY IN TRANSMISSION AND VARIATION OF TIME OF DELAY	EVOLUTION OF GEOGRAPHICAL AVAILABILITY	TIME OF NON-AVAILABILITY	SERVICE/MAINTENANCE LINE	S L A
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C	A C	B C	(**)	B	B C	B	C			
OLO (***) ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	D F G H I	D F G H	D	D H	H I	H		D G	E I	J
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	M	M	M				M			
Associations FENACOOOP-P UGC-Q	Accesses should always be active, and there should be <i>back-ups</i> in case of a failure (Q).									
Other ent. CTT-R DGCC-S	The Standard ETSI TS 101 135 identifies a set of physical requirements for the copper pair(s) (one, two or three pairs in the case of HDSL technology) which must be assured in order to promote the provision of broadband services on the LLU (R). The parameters identified in the Standard should be assured right from the outset. The body which should assure the physical conformity of the copper pairs, with the parameters identified by the Standards, should always be the NO, regardless of the LLU implementation alternative (full, shared or bitstream access) (R).									
(*) Of the different services provided by the NO: availability of a physical pair for LLU, for bitstream access, and for access to collocation. (**) There are already QoS indicators within the scope of the Convention which assure the control of this quality parameter (A). (***) With regard to the LLU quality of service parameters and indicators, they should at least reflect those currently used in the provision of leased circuits, in the case of full access, or of data transmission, in the case of bitstream access (J).										

ATTACHMENT I – Summary of responses received

<p>Question 10</p>	<p><i>Which eventual impairments must be taken into account with regard to compatibility of equipment and its electromagnetic characteristics?</i></p> <p><i>In the event that such impairments exists, what solutions do you propose to minimise them?</i></p>				<p><i>What types of test may be needed to analyse the technical feasibility of the provision of a service on a certain copper pair?</i></p>							
<p>ENTITIES</p>	<p>CONDITIO NS</p>	<p>FREQUENC Y PLAN</p>	<p>EMC</p>	<p>OTHERS</p>	<p>ATTENUATIO N</p>	<p>DC RESISTANCE</p>	<p>CHARACTERISTIC IMPEDANCE</p>	<p>RETURN LOSSES</p>	<p>INSULATION RESISTANCE</p>	<p>NEAR- END CROSS- TALK</p>	<p>FAR-END CROSS- TALK</p>	<p>INTEGRATION TESTS</p>
<p>Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C</p>	<p>(*) (**)</p>	<p>A B</p>		<p>Installation of equipment in ETSI type racks measuring 2200x600x300mm, according to standard ETS 300 119 (A).</p>	<p>A</p>	<p>A</p>	<p>A</p>	<p>A</p>	<p>A</p>	<p>A</p>	<p>A</p>	<p>A B C</p>
<p>OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L</p>			<p>F G I J</p>		<p>Introduction of tests on the categories of copper cable (F). Creation of a body similar to England's NICC, whose function would be to co-ordinate the technical specifications and standard tests, and to support the introduction of new technologies without adversely affecting previous technologies (F). Performance of tests on the characteristics of the copper cable in order to gauge the maximum noise values supported (F G).</p> <p>In order to analyse the quality of the local loop, a Quality Control Technical Group should be formed (D). A Cable Occupation Plan must be created in order to assure a correct spectrum management. This plan, as well as all issues related to spectrum management, EMC and security, should be assured by a Monitoring Committee, which will include intervention by the operators involved and the ICP itself. In order to facilitate the management process, this Committee may encompass the Quality Control Technical Group (D). It should be responsible for the work to be developed by a specific WG (E H). It will be necessary to perform qualification tests on the local loop, in order to analyse the feasibility of providing other services in addition to vocal telephony. It will also be necessary to perform interoperability tests (J).</p>							
<p>Manufacturers LUCENT-M ALCATEL-N ERICSSON-O</p>		<p>M</p>	<p>M</p>	<p>Provision of information relating to the particular characteristics of the cables and copper pairs, as well as any contra-indications of using certain technologies (M).</p>	<p>An ample range of literature has been published on compatibility in the local loop (ANSI, ITU, ETSI). There is also much information available on "qualification of lines" to be implemented prior to the lines being used by an OLO. Finally, we believe that the incumbent operator should be requested to provide the description of the existing services which may be incompatible with the technologies specified in ITU R.992.x. In the majority of cases, these services will be using old technologies and an application extended to incorporate these technologies may not exist (O).</p>							
<p>Associations FENACOOOP-O UGC-P</p>												
<p>Other ent. CTT-R DGCC-S</p>		<p>R</p>			<p>The solution found by BT, which was consolidated in the production of an ANFP completed by the NICC at the request of <i>Ofitel</i> seems to us to be the best way of assuring the compatibility of the equipment. Furthermore, the fact that the ANFP is technologically neutral, since it is defined in terms of PSD (<i>Power Spectral Density masks</i>), guarantees transparency so that the OLO's can use the equipment which is as per the ANFP (R).</p>							

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(*) Portugal Telecom does not predict any additional conditions in terms of the electromagnetic compatibility of the equipment, provided that it (equipment, sub-racks, racks) complies with the legal framework on electromagnetic compatibility set out in the following publications :- Directives 89/336/CEE and 92/31/CEE;-Statue Laws 74/92 of April 29, 1992 and 98/95 of May 17 1995;-Rulings 767-A/93 of August 31 1993 and 935/95 of July 24 1995.

(**) The applicable Directives define important rules with which the telecommunications equipment in general and terminal equipment in particular must comply. We also feel that the recommendations ETSI - ETS 300 386-1, ETS 300 386-1/C1 and ETS 300 386-2 should also be taken into account (**B**).

ATTACHMENT I – Summary of responses received

Question 11	<i>In your view, how should the entire commercial relationship proceed between the parties involved: OLO, notified operator and user?</i>							<i>Which aspects do you consider vital to preserve as regards this issue?</i>		
ENTITIES	LLU REQUESTS GENERIC INFORMATION FROM THENO	REQUEST FROM USER	OLO REQUESTS THE LLU FROM THE NO	ANALYSIS OF FEASIBILITY OF PROVISION	RESPONSE TO OLO	OLO CONFIRMS TO THE USER	ANALYSIS IN WG	CO-ORDINATION BETWEEN NO AND OLO	CONFIDENTIALITY/S ECURITY	MONITORING OF RELATIONSHIP BETWEEN OPERATORS BY THE ICP/CODE OF CONDUCT
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C		A	A	A	A			A	AC	
OLO	DH	DH	DH	DH	DH	DH	EFG			DE
ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	<p>Contact between the OLO and the user should be favoured, and there should be the possibility of a solution in which there is a single interface, and where the OLO can serve as an intermediary in the user – NO relationship (F H I).</p> <p>When all the relevant information exists in relation to local access and associated local exchange/concentrator, the LLU activation process will be much simpler (I).</p> <p>Assuming that only full access and bitstream access will be implemented, the possibilities of conflicting situations arising are duly limited (J):</p> <p>(a) in full access, the OLO should be responsible to the customer as regards all aspects, since this will be the operator which provides the different services supported on the local loop;</p> <p>(b) in bitstream access, the OLO should be responsible to the customer only as regards broadband services. Any conflicts arising from significant variations in QoS provided to the customer – and since the OLO does not have any control whatsoever over the quality of the local loop – should be provided for by establishing SLAs between the OLO and the NO.</p> <p>The OLOs will not be able to determine, with propriety, which procedures are necessary in order to provide the service without having prior knowledge of the realities underlying LLU . Only once in possession of the aforementioned details plus some others, will it be possible to process the entire commercial relationship between the three parties (L).</p>							<p>Relations between the NO and the OLO may be governed by an LLU contract, regardless of interconnection agreements, of which the established SLA will form a vital part. Furthermore, relations between the customer and the operator which provides the vocal telephony and/or broadband service may be governed by a contract within the scope of the applicable regulations on public use telecommunications services (J).</p>		
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O	<p>The OLO should have at its disposition all the necessary and sufficient resources for a commercial relationship with the user regardless of the NO (M).</p> <p>It is vital that the OLO should have – rapidly – updated information (namely that stated in the consultation document) which will enable it to define its offers, in consonance with the services it intends to provide and with the characteristics of the existing network, and to act commercially as regards the user without creating false expectations (M O).</p> <p>The commercial relationship between the three parties involved should not be subject to specific regulations (O).</p>							<p>It may be advisable to request from both the NO and from the OLO, the use of processes developed at international level for the provision of services which usually provide a web interface to the end user for the requisition of a service (from an ISP or directly from the OLO). Next, the requisition of the service between the entities involved in providing the service ([ISP], OLO, incumbent operator) should be processed automatically with the aim of speeding up the provision of the service to the user (O).</p>		
Associations FENACOOOP-P UGC-Q	<p>It is important that commercial relations between the different subjects should be governed by the principle of transparency (especially as regards setting and charging prices) (P).</p> <p>Another important principle is equality in the treatment of different consumers, preventing discrimination and abusive conduct (P).</p> <p>Finally, it is always appropriate to implement the principle of good faith in relations between the different parties involved (P).</p> <p>With a view to preventing litigation, it is necessary to give importance to the active participation of the associations representing consumers in issues which relate to them (P).</p> <p>The consumer/user should be guaranteed freedom of choice and non-discrimination resulting from his or her option (Q).</p>									

ATTACHMENT I – Summary of responses received

<p>Other ent. CTT-R DGCC-S</p>	<p>A direct commercial relationship should always be guaranteed between the user and the OLO. This commercial relationship should assure the entire chain of processes for the provision of the service, with the billing process at the end of this chain (R).</p> <p>It is of interest to safeguard the OLO's ability to request access to a certain line, in accordance with the user's wishes. A declaration should be sufficient for this purpose (S).</p>	<p>Because it is vital to perform tests on the pairs which will support the technology chosen by the user, and since service can only be guaranteed following these tests, it should be guaranteed that the technical integration between the OLO and the NO should be achieved as quickly as possible (R).</p>
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ATTACHMENT I – Summary of responses received

Question 12	<i>Which aspects do you feel should form part of a Base Proposal for local loop unbundling in addition to those set out in the Annex to the European Commission Recommendation?</i>								
ENTITIES	TERMS AND DEFINITIONS	MODES OF INTERCONNECTION	NUMBERING	MAINTENANCE SERVICES	INTELLECTUAL PROPERTY, INFORMATION AND CONFIDENTIALITY RIGHTS	RESOLUTION OF CONFLICTS	PRICE OF THE DIFFERENT OPTIONS	EVOLUTION AND PLANNING OF THE LLU	ASPECTS APPROACHED ARE ADEQUATE
Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C									B C
OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L	E	E	E	E	E	E	E	E	H I L
Manufacturers LUCENT-M ALCATEL-N ERICSSON-O									M O
Associations FENACOOOP-P UGC-Q									
Other ent. CTT-R DGCC-S									R S

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<p>Question 13</p>	<p><i>Do you consider it necessary to establish a working group within the scope of the LLU?</i></p> <p><i>Which specific issues do you think could be discussed by this working group, beyond those identified in this public consultation?</i></p>					<p><i>How do you think that its operation could be optimised?</i></p>				
<p>ENTITIES</p>	<p>Y</p>	<p>N</p>	<p>TECHNICAL AND OPERATIONAL INTERFACES</p>	<p>INTEROPERATION AND COMPATIBILISATION</p>	<p>TESTS</p>	<p>MODE OF ACCESS TO THE LLU</p>				
<p>Notified Op. and Semi-public undertakings/ Subsidiaries PT-A TMN-B PT PRIME-C</p>	<p>B C</p>		<p>A</p>	<p>A B</p>	<p>A</p>	<p>A</p>				
<p>It should start by intensely preparing the processes, namely technical interface and testing processes, etc., as well as all the procedures to be adopted. During a subsequent testing stage, it should monitor the results and propose solutions to any problems which arise. During the commercial stage, it should continue to meet periodically, although less frequently (A).</p> <p>Any participation by suppliers in this group would possibly optimise and speed up its working (B C).</p>										
<p>ENTITIES</p>	<p>Y</p>	<p>N</p>	<p>REMARKS</p>				<p>SUB-GROUPS</p>			
						<p>TECHNICAL</p>	<p>REGULATORY</p>	<p>QUALITY CONTROL</p>	<p>COMMERCIAL ISSUES</p>	
						<p>D E</p>	<p>D E</p>	<p>D</p>	<p>E</p>	
<p>OLO ONI-D TELEWEB-E NOVIS-F OPTIMUS-G TELECEL-H JAZZTEL-I MAXITEL-J NETRAIL-L</p>	<p>D E F G H I L</p>		<p>General Technical Issues Group: (a) allocation of spaces; (b) physical collocation; (c) information and support to be provided for the proper implementation of the LLU; (d) cable occupation plan; (e) registration; (f) list of MDF relating to exchanges; (g) allocation of space for the OLO's; (h) spectrum management; (i) electromagnetic compatibility (D).</p> <p>Quality Control Technical Group: (a) selection of copper pairs and; (b) quality control/deterioration of cables (D).</p> <p>Operation and maintenance issues: (a) processes for the activation of work orders and; (b) control of maximum response time (D).</p> <p>Regulatory Issues Group: (a) LLU costs and prices; (b) space allocation costs; (c) costs of services performed by the Incumbent Operator; (d) payment conditions; (e) penalties/compensation for non-compliance (D).</p>				<p>The participation of the ICP is vital (D E F G I).</p> <p>There should be work developed by the ICP, possibly with the participation of external consultants in the event that the ICP deems such collaboration to be necessary, setting out the first detailed survey of the issues to be discussed, as well as the options available (F).</p>			
<p>Manufacturers LUCENT-M ALCATEL-N ERICSSON-O</p>	<p>M N O</p>		<ul style="list-style-type: none"> • Definition of information relating to the local network (M). • Definition of line qualification tests (M). • Co-existence between different xDSL technologies (M). • Rules of access to the premises of the NO (physical collocation) (M). • Rules of use, in terms of engineering, of xDSL technologies – maximum levels of interference, load on the distribution cables, management of frequency spectrum, installation guides/manuals (M). 				<p>The leadership of the ICP is important (N).</p> <p>Experiments in other countries should also be monitored, thus enabling it to benefit from the knowledge acquired from such experiments (N).</p> <p>Ideally, the working group would comprise members of the different parties and could include specialists with international experience. Use should be made of the experience acquired in other countries where the LLU process is at a more advanced stage than in Portugal (O).</p>			
<p>Associations FENACOOOP-P UGC-Q</p>	<p>O P</p>		<p>In addition to the issues raised in the public consultation document, the WG to be created should reflect on all issues relating to protecting the interests and rights of consumers, from a viewpoint other than “commercial aspects” (P).</p> <p>The working group should include a representative from a consumer rights association or a consumption co-operative (P).</p> <p>The Universal Service should also be discussed (Q).</p>							

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Other ent. CTT-R DGCC-S	R S	To guarantee the definition of a Frequency Plan for Network Access, without which issues related to electro-magnetic compatibility cannot be assured (R) .	It should have a basis which ensures the representation of the different OLO, and a <i>Board of Directors</i> should thus be formed. Any working groups which may be formed, in accordance with the specifications on the issues to be approached, answer to this Board of Directors. (R) . The results of this working group should be electronically published on a site created for this purpose, and this site should function as a portal par excellence, for LLU-related issues (R) .
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