

**FINAL REPORT**

**ON**

**HARMONISING**

**ESSENTIAL REQUIREMENTS**



*This study has been prepared by ETO on behalf of ECTRA for the Commission of the European Union.*

*The report has been approved by ECTRA in December 1997 for delivery to the Commission. However, individual ECTRA members do not necessarily endorse all findings and proposals contained herein.*

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## EXECUTIVE SUMMARY

European as well as national telecommunications legislation have for many years included numerous references to Essential Requirements. However, in the changing regulatory framework due to the evolution towards full competition and the entry of new players, there is a need to evaluate what licensing conditions and restrictions are required. The aim of this study is therefore fourfold:

1. to describe and analyse Essential Requirements and their implementation in national regulations
2. to analyse the experience of the market with restrictions resulting from Essential Requirements
3. to distinguish between different kinds of services or operators
4. to describe and analyse procedures followed when it has been established that one of these Essential Requirements has not been fulfilled.

### 1. Background

When dealing with Essential Requirements, distinctions have to be made between the general concept (section 2.1), the list of specific Essential Requirements which can be invoked by NRA's (section 2.2) and the detailed measures which are imposed on licensees (section 4 and annex 3). Furthermore, it is of interest to evaluate how the players in a competitive market experience Essential Requirements (section 3).

#### 1.1. The general concept

Essential Requirements are restrictions to the principle of free movement of goods and services, as are the exercise of official authority, public policy, public security or public health. The characteristic of Essential Requirements is that they are not specified in the Treaty but result from the case-law of the Court of Justice. A detailed analysis of the development can be found in section 2.1.

In accordance with the principles, laid out by the Court of Justice, the Licensing Directive describes Essential Requirements as *the non-economic reasons in the public interest which may cause a Member State to impose conditions on the establishment and/or operation of telecommunications networks or the provision of telecommunications services*. In the study, this is the general description used.

#### 1.2. Essential Requirements, specific for the telecommunications sector

The list of Essential Requirements has evolved over time. In the ONP-Framework Directive and the Services Directive the following four were included :

- security of network operations,
- maintenance of network integrity,
- interoperability of services and ,
- protection of data, which may include
  - protection of personal data,
  - confidentiality of information transmitted and stored and
  - protection of privacy.

With the liberalisation of satellite and mobile communications, the list was completed with

- efficient use of frequencies
- avoidance of harmful interferences between radio-based telecommunications systems and other space-based or terrestrial technical systems
- protection of the environment and
- town and country planning objectives.

These eight Essential Requirements are the ones which have been taken into account for the study.

When assessing and analysing the first collection of information, it became obvious that a clear description of each of the Essential Requirements would be of great value to determine which detailed measures to take into account in the study. Therefore, descriptions were elaborated in collaboration with the ECTRA project teams on Licensing and Declaration and on Technical Regulations and Standards for Interconnection.

### **1.3. Detailed measures**

Information has been collected from 12 countries about the licensing conditions which are imposed on behalf of Essential Requirements. These countries are Belgium, Denmark, Finland, France, Germany, Ireland, Norway, The Netherlands, Portugal, Spain, Sweden and UK. The first collection of information was done by the consultant Sagatel. This was completed by information provided by the members of the ECTRA project team on licensing and by members of the NATO Civil Emergency Planning Committee for the part on security of network operations.

From this, it became evident that Essential Requirements as a concept is vague and in consequence results in a very diverse set of measures and clauses, dispersed over general legislation, authorisations (general and individual) and interconnection agreements. When discussed with ECTRA experts, harmonisation of detailed conditions appeared not to be feasible beyond the level of EC legislation.

Furthermore, it was decided in collaboration with ECTRA that the main focus of the study would be on network integrity, security of network operations and interoperability, the regulation concerning the other Essential Requirements often being not part of the telecommunications specific regulation.

Therefore, in order to fulfil the terms of the work requirement, ETO concentrated on harmonising

- a common understanding of each essential requirement
- the general approach to implementation (conditions to limit the number of licences, conditions imposed while operating the service and self-regulation by industry).

### **1.4. Experience of newcomers**

An important element in the study is the evaluation of the impact of measures imposed on grounds of Essential Requirements. Ten useful replies were received to a questionnaire sent out to 70 newcomers. The activities of these newcomers represent the full scale of telecommunications activities, except for the reselling of airtime.

The consultation showed that newcomers face problems where operators holding the access network refuse the provision of identification services, using data-protection as an argument. This aspect has been examined in detail.

## 2. Findings

As set out before, the emphasis of the study is on network integrity, security of network operations, interoperability and one particular aspect of data-protection which is the provision of identification services. The detailed measures were examined as well as who is subject to them. In order to clarify the measures taken into account, descriptions for each of these Essential Requirements are presented.

### 2.1. Entities subject to Essential Requirements

The entities subject to detailed measures vary greatly, both with regard to different Essential Requirements and in the different countries.

- ***Security of network operations***

This obligation was traditionally imposed on the operator who had the infrastructure monopoly. The emergence of new access networks and the interconnection of networks changes the situation completely. Although the issue is very much under discussion in most countries at the moment, there seems to be a tendency to impose the obligation on all public operators, independent of whether or not they provide the access network.

- ***Maintenance of network integrity***

This issue becomes important in the context of interconnection. The tendency is to address public operators or operators with significant market power. Detailed measures, however, were hardly imposed. The matter seems to have been mainly left to the parties discussing a commercial interconnection agreement. Both parties have an interest to secure network integrity. The operator with significant market power has the onus to protect itself to the extent reasonable. The newcomer has no interest to jeopardize the network over which services are provided to its own customers. Therefore, there should be no a priori refusal of interconnection for reasons of network integrity. In cases of service outage or degradation in the operational phase, however, the afflicted operator should retain the right to disconnect.

- ***Interoperability***

Ensuring interoperability is only an obligation in justified cases. As the interconnection directive imposes interoperability of fixed public telephone networks, leased line services and public mobile telephone networks, these services and networks have been considered the justified cases. It can therefore be submitted that the operators offering these services are subject to this requirement.

- ***Efficient use of frequencies and avoidance of harmful interferences***

These obligations apply to all holders of licences who use the spectrum. Detailed measures have not been studied extensively due to the technical nature of the conditions.

- ***Data-protection, protection of the environment, town and country planning***

For this study only specific telecommunications regulation has been taken into account. As these Essential Requirements concern matters where the general interest is broader than the telecommunications sector, the obligations are often laid down outside the telecommunications regulation. Only the aspect of line identification has been studied in-depth. The organisations subject to the regulation, are operators of public voice, (fixed as well as mobile) in the Netherlands and Denmark.

### 2.2. Detailed measures

- ***Security of network operations***

*Measures to safeguard the security of the network during emergency situations are related to protecting the network against external events such as extreme weather, earthquakes, flood, lightning, fire and catastrophic network breakdown which could compromise network operations. This protection has the goal of maintaining at least a minimum guaranteed functioning during such civil emergency situations.*

Detailed measures found in national legislation are:

- Description of emergency situations (4 countries)
- Obligations in terms of internal organisation in preparation for emergency situations (7 countries)
- Obligations in terms of equipment in preparation for emergency situations (4 countries)
- Measures and possible actions in case of emergency situations to enable the use of the network for the most vital users (4 countries)
- Obligations to establish contingency plans (4 countries)
- Notify users and regulator of the nature and duration of the emergency (3 countries)
- Ground for operator to impose specific conditions (1 country)

This essential requirement is specific to the telecommunications sector. All countries consider it of importance and it can be assumed that the measures set out before will continue to exist even in a fully and fairly competitive market. Therefore, there is an issue in a multi-network environment to reconsider the matter in terms of cost and entities which have responsibilities. In the future, ITU will probably start work on harmonisation of this essential requirement. This will be based on provisions related to preference regulation for emergency services as well as organisational and technical precautionary measures already implemented in NATO-countries. **ETO recommends that the future work of the ITU be closely followed by the EC. In addition further study on a proportionate way of dividing the burden in a multi-operator environment seems necessary.**

- ***Maintenance of network integrity***

*This essential requirement can be described as the protection of the physical and functional operation of a network against and its resistance to breakdown caused by electrical conditions, signalling protocols or traffic loads (which can be induced via interfaces between terminals and networks or between networks).*

In the past, no major network breakdowns have occurred in Europe. Therefore, in all countries national legislation holds little more than a general reference to the protection of network integrity or to ONP-standards. In most of the countries there were no detailed measures found. In the new multi-network environment, however, protection of the network integrity becomes a crucial element for interconnection. Notwithstanding this, it can be expected that this will not, in a first phase, influence the licensing conditions imposed by general or individual authorisation. Industry seems to believe in self-regulation, and guidelines on interconnection-testing and fault-reporting have been drawn up in the framework interconnection agreement proposed by the EIF. Only if it becomes apparent that significant difficulties are arising for new entrants, will it be necessary for NRAs to envisage regulation on these points.

**ECTRA endorsed in December 1997 a recommendation on a set of guidelines on responsibilities for ensuring network integrity in its Plenary meeting of 12 March 1998 (see annex 6).**

- ***Interoperability***

Ensuring interoperability is only an obligation in justified cases. As the interconnection directive imposes interoperability of fixed public telephone networks, leased line services and

public mobile telephone networks, these services and networks have been considered the justified cases. The interoperability requirement in the study *refers to the ability of two terminals to communicate with each other through one or more fixed public telephone networks, leased line services and public mobile telephone networks. In that context, interoperability considerations may include requirements both on the terminal and on the network.*

Interoperability appears to be mainly a matter of type approval of terminal equipment, standardisation, certification and technical regulations. In general it can be said that the licensing of service providers and operators until now has not included measures related to the implementation of Essential Requirements as applied in the context of approval of terminal equipment. **ETO recommends that the responsibility to ensure compliance with those technical prescriptions and standards is imposed on manufacturers and entities putting terminal equipment on the market.**

A specific case is that of roaming. In most countries, it is not regulated at all, except for international roaming through the work of the GSM MoU. But Denmark, UK and Norway encourage national roaming. The underlying reason, however, is more to incite competition between different mobile operators than to realise interoperability. This aspect will, therefore, not be examined in full in this study but will be part of the ETO study on mobile communications.

- ***Data-protection***

As set out before, consultation with newcomers to the market showed that they face problems where operators holding the access network refuse the provision of identification services, using data-protection as an argument. This aspect was examined closely in Belgium, Denmark, France, Luxembourg, the Netherlands, Switzerland, Sweden and the UK.

A distinction must be made between identification services as service to the customer and identification services as part of interconnection service.

The confidentiality aspect of CLIP was found to be regulated in a detailed way, conforming to the provisions of the data-protection directives of the European Union in most of the countries examined.

Contrary to that, identification services as part of interconnection services are left to commercial agreements between interconnecting parties. However, in most countries, identification services cannot be refused in the context of interconnection because they are part of the reference interconnection offer or part of a code of practice which every interconnecting party has to observe. It was only in one country that the theoretical possibility to refuse identification services on the basis of data-protection was found. Of course, in practice it is up to the NRA to decide if the refusal of interconnection is proportionate with the goal of data-protection.

As newcomers seem to experience problems with identification services in an interconnection context and the legal framework is not very specific or clear (except for the UK), this aspect merits, perhaps, some monitoring and general guidelines. The ECTRA TRIS working group and the European Interconnection Forum are studying the subject. **ETO recommends that industry be encouraged to develop voluntary guidelines on the use of CLI as an interconnection service in accordance with the directives on ONP voice and data-protection.**

- ***Efficient use of frequencies***

*Efficient use of frequencies implies that this resource is used in the most efficient and least wasteful manner so that as many users as possible can make use of the frequency spectrum without mutually interfering with each other.*

Efficient use of frequencies is typically the field where licensing and frequency management join each other. Frequency management can be situated on three levels.

- On the international level (e.g. ITU and ERC decisions), frequency destination plans are made which reserve certain frequencies for a certain type of use (e.g. landmobile) or certain groups of users (e.g. broadcast, defence...).
- The national frequency plan takes into account the international allotment when frequencies are attributed to national categories of users (e.g. emergency services, commercial usage, broadcast...)
- Finally, frequencies can be assigned to entities for actual use in accordance with the two preceding levels.

For the study, the third level is of importance because it influences the **licensing procedure** and entails rights and **obligations** for the licensee. The first two levels mainly involve responsibilities for NRAs and are not considered.

The licensing **procedure** is a means to achieve the frequency assignment. It can be done by giving preferential rights to certain users (e.g. emergency services), by assigning in order of demands received (first come first served) or by introducing a competition element. This is typically followed when the scarcity of frequencies and the care for efficient use of frequencies are reason to limit the number of licences. The following selection methods can be distinguished in that case: lottery, auction and comparative bidding.

Examples of the details of these procedures and the influence on the licensing conditions are discussed in more detail in the ETO study on mobile communications.

The **obligations** which are imposed on a licensee relate mainly to

- limitation of the duration of the licence
- obligation to use the frequencies in the most efficient way, according to certain parameters for traffic loading or according to a certain technology
- other obligations, like e.g. sharing of frequencies.

Detailed measures related to the limitation of the duration of the licence and obligation to use a certain technology can be found in most countries. Parameters for traffic loading on the other hand seem not to be available in the form of a transparent standard.

- ***Avoidance of harmful interference***

*This notion is critical to co-ordination of frequency assignments between administrations. It relates to intentional signals, while electromagnetic compatibility relates to signals of an accidental nature that may be emitted by terminals.*

Avoidance of harmful interference appears to be mainly a question of frequency management, standards and technical regulation. Licensing conditions are therefore mainly technical standards, elaborated by standardisation institutes.

- ***Protection of the environment***

*This essential requirement is related to the protection of air, water, animals, plants and other natural resources from pollution or its effects.*

Only a few countries give attention to the protection of the environment in their telecommunications legislation.

The following detailed measures were found as operating conditions:

- Rules on the laying or fixing of cables (2 countries)
- Rules on visual and other constraints on the building of infrastructure (1 country)
- Regulation on poles (1 country)

- Rules to protect trees (1 country)
- Obligation to place cables underground (2 countries)

Operators building their own infrastructure can be confronted with possibly burdensome procedures or conditions which result from legislation on environmental protection. However, during the consultation with the newcomers and the industry, this did not come up as an aspect that was seen as particularly limiting the provision of telecommunications services and networks.

- ***Town and country planning***

Town and country planning can be seen as *the determination of the future physical arrangements and conditions of a community or country, involving a series of constructional and legal conditions.*

Also in this case, few detailed measures were found as operating conditions:

- Sharing of sites and ducts (4 countries)
- Free access to public land for public telecommunications operators (3 countries)
- Obligation to take into account other plans to use the area (3 countries)
- Obligation not to hinder the purpose of traffic ways (2 countries)

Along with what was said for protection of the environment, these conditions are often based on horizontally applicable rules outside the national Telecommunications Act. But again in this case consultation with the industry did not bring up evidence to conclude that these rules lead to limiting the provision of telecommunications services and networks.

### **3. Consequences of non-respect of Essential Requirements.**

The sanctions imposed and the procedures to be followed in case of non-respect of the detailed licensing conditions depend largely upon the legal instrument enforcing the measure.

The procedures and sanctions for conditions imposed by general authorisation and individual licence should respect the articles 5,(3), 9,(4) and 9,(5) of the licensing directive.

It was found that most of the detailed measures to ensure Essential Requirements figure in general telecommunications law. Conditions related to access to frequencies and avoidance of harmful interferences were typically part of an individual licence. This is also the case for security of the network operations, as it is currently a specific obligation for the incumbent fixed network operator. This might however change in the future.

The detailed conditions were found to be not very different from other operating conditions which are not related to Essential Requirements. Consultation with newcomers and the industry gave no evidence of Essential Requirements being used to withdraw a licence, suspend a service or refuse interconnection.

**ETO recommends that Essential Requirements be implemented through operating conditions, which need no a priori control by the NRA. In cases where frequencies are used, efficient use of frequencies and avoidance of harmful interferences can be valid reasons to impose conditions prior to market entry or to limit the number of licences.**

### **4. Conclusion**

Essential Requirements occupy a special place among the licensing conditions imposed on telecommunications networks and services.

This means that in a fully competitive market, where fair competition has been achieved, measures to ensure Essential Requirements might still be necessary. This also implies that they can be seen as a last resort, to foresee the unforeseeable. Non-respect of Essential Requirements can, according to the European directives, even lead to interruption of services, limitation of the number of licences or it can give rise to considerations for interconnection dispute resolution.

National legislations were found to be unclear concerning which specific measures have to be respected in order to ensure compliance with the goals set out. From the beginning it was obvious that in order to trace those detailed measures a description of each of the Essential Requirements would be of value.

As a result of the study, ETO has come up with:

- 1 a clarification of the concept in general (5.1);
- 2 proposals for descriptions as a tool for obtaining a coherent approach in different countries with regard to the detailed measures used to implement essential requirements (5.2);
- 3 recommendations (5.3) concerning the following specific aspects where industry would benefit from harmonisation,
  - preference emergency schemes
  - responsibilities for ensuring network integrity
  - responsibilities for ensuring interoperability
  - guidelines for the use of CLI as an interconnection service
  - recommendations on how to implement Essential Requirements ( a-priori conditions, operating conditions or industry self-regulation)

Finally, consultation with newcomers and the industry through a questionnaire and during a workshop, gave no evidence of Essential Requirements being used to withdraw a licence, suspend a service or refuse interconnection. The application of Essential Requirements seems therefore not to have led to disproportionate burdens or restrictions on the provision of telecommunications services or networks. In a multi-network environment, after the full liberalisation of networks and services, however, this could change.

**ETO therefore proposes to keep in contact with new entrants after the full liberalisation in order to verify that the applications of Essential Requirements (in particular network integrity, security of network operations, interoperability and efficient use of frequencies) are still not felt as burdensome or restrictive of competition.**

# 1. INTRODUCTION TO THE STUDY

## 1.1 Background and objectives

The purpose of this study is to identify and analyse the “Essential Requirements” (as defined in Commission Directive 96/19/EC) imposed by telecommunications Union Directives.

This study must be seen in the context of the directive on a common framework for general authorisations and individual licences in the field of telecommunications services. Essential Requirements figure among the conditions that may be attached to all sort of authorisations. In the changing regulatory framework due to the evolution towards full competition and the entry of new players, there is a need to evaluate what licensing conditions and restrictions are required.

The work requirements assigned to ETO are the following:

- (1) to analyse each essential requirement and to describe its implementation in national regulations.
- (2) to describe and analyse the procedures followed by NRAs when it has been established that one of these Essential Requirements has not been fulfilled.
- (3) to propose detailed harmonised Essential Requirements that could be included, in the near future, in the set of licensing conditions for telecommunications services, and to indicate categories of services for which they must be respected.

The text of the work order signed by the Commission and ETO is attached as annex 1.

## 1.2 Approach and work programme

The first interim report concentrated mainly on the first two sections of the work requirement. Part of the collection of country-related information was conducted by the consulting company SAGATEL (Paris, France). They were required to collect accurate information from telecommunications operators/service providers on how each “essential requirement” has been interpreted and on how the provisions related to “Essential Requirements” have been applied with regard to different categories of telecommunications services. They were also asked to collect information from standardisation experts with regard to the application of the provisions related to “Essential Requirements” in connection with ETSI-standards.

This first interim report was discussed with the Project Team on Licensing in [February and April 1997](#) in order to check the information regarding national situations and to reach an agreement on the structure and working method. There was also a discussion, in February with the ONP CCP, where the study was presented to representatives of operators and industry. In March a discussion was held with the European Interconnection Forum and the chairman of the ETNO ONP-WG. In April, the outlines and the scope of the study were discussed during an extra-ordinary ECTRA plenary.

The second interim report was discussed with the Project Team on Licensing in September 97 in order to obtain their comments on the draft findings.

A Workshop was organised on 21 October during which ETO presented the survey and findings to telecommunications operators, service providers, European Associations, industry and administrations. The results of the discussion arising from the Workshop were used by ETO for drafting this final report.

The final report was sent for the approval of the ECTRA Plenary at its meeting in December 1997.

## 2. Essential Requirements in Community law : concept and role.

In this section, an analysis will be made of the appearance of “Essential Requirements” in community law.

In order to understand where the concept originated, a first section (2.1) will refer to the broader context of limitations to free circulation of services and goods. (2.1.1). Section 2.1.2, is devoted to the **general** description of Essential Requirements. A distinction is made between the use of Essential Requirements in the context of services and networks on the one hand and terminal equipment on the other hand in section 2.1.3.

Section 2.2 is dedicated to the description of the **specific** telecommunications-related Essential Requirements that will be part of the study (2.2.1-2.1.8).

Section 2.3 is dedicated to the role each specific essential requirement has as a condition for limitation of the number of licences (2.3.1), for operating conditions (2.3.2) or for conditions related to access to networks (2.3.3).

### 2.1. The concept of Essential Requirements

#### 2.1.3 Essential Requirements as restrictions on the free movement of services and goods

At first sight, Essential Requirements seem to be contradictory to the principles of the free movement of services and goods, laid down in articles 30 and 59 of the Treaty of Rome. Some restrictions to these principles are however acceptable on the basis of the Treaty:

- the exercise of official authority (Article 55.<sup>1</sup>)
- public policy, public security or public health (Article 56<sup>2</sup>)
- case law of the Court of Justice<sup>3</sup>, in particular in interpreting articles 36<sup>4</sup> and 59<sup>5</sup>

<sup>1</sup> The provisions of this Chapter shall not apply, so far as any given Member State is concerned, to activities which in that State are connected, even occasionally, with the exercise of official authority. The Council may, acting by a qualified majority on a proposal from the Commission, rule that the provisions of this Chapter shall not apply to certain activities.

<sup>2</sup> The provisions of this Chapter and measures taken in pursuance thereof shall not prejudice the applicability of provisions laid down by law, regulation or administrative action providing for special treatment for foreign nationals on grounds of public policy, public security or public health.

<sup>3</sup> public morality: case 34/79 Regina vs Henn and Darby, case 121/85 Conegate; public security: case 72/83 Campus Oil; public order: case 7/78 Regina vs Thompson, Johnson and Woodiwiss; public safety: case 188/84 Commission vs Italy; protection of health : case 188/84 Commission vs France; the protection of national treasures : case 7/68 Commission vs Italy

<sup>4</sup> Article 36. The provisions of Arts. 30 to 34 shall not preclude prohibitions or restrictions on imports, exports or goods in transit justified on grounds of public morality, public policy or public security; the protection of health and life of humans, animals or plants; the protection of national treasures possessing artistic, historic or archaeological value; or the protection of industrial and commercial property. Such prohibitions or restrictions shall not, however, constitute a means of arbitrary discrimination or a disguised restriction on trade between Member States.

<sup>5</sup> Article 59. Within the framework of the provisions set out below, restrictions on freedom to provide services within the Community shall be progressively abolished during the transitional period in respect to nationals of Member States who are established in a State of the Community other than that of the person for whom the services are intended. The Council may, acting by a qualified majority on a proposal from the Commission, extend the provisions of this Chapter to nationals of a third country who provide services and who are established within the Community.

Essential requirements are **not** exceptions based on article 55 or 56. Consideration 7 of the Services directive indicates that clearly : *“None of the telecommunications services is connected with the exercise of official authority involving the right to use undue powers compared with the ordinary law, privileges of public powers or a power of coercion over the public. The supply of telecommunications services cannot in itself threaten public policy and cannot affect public health.”*

It is important to make this point clear from the beginning as the Court of Justice applies a distinct regime from the angle of the respect of principles of non-discrimination. Whereas for application of the articles 55 and 56 of the Treaty there must be discrimination between nationals and foreign nationals, the application of articles 36 and 59 is non-discriminatory.

The concept of Essential Requirements results thus from the “rule of reason” of article 36 and the analogue reasoning for the application of the articles 59 and 66, elaborated by the case law of the Court of Justice. Exceptions to the general principle of free movement laid down in the Treaty are kept to a minimum and interpreted restrictively. The Court of Justice has, however, added “**Essential Requirements in the general interest**”<sup>6</sup> and this list is not limited. In the case-law<sup>7</sup> the following reasons were recognised among others: security on the road, protection of intellectual property right, economic protection of the consumer, the organisation of television as a service of public interest, the protection of archeological and artistic heretage.

But if the conditions are among those listed in article 36 or in the ruling of the Court of Justice on articles 36 and 59, such restrictions must conform to certain criteria.

- Essential Requirements must be **in the general interest**. The list of requirements retained in telecommunication-related directives is the object of section 2.2. It can, however, be observed here that consumer protection and the protection of intellectual property are seen as objectives that can also be attained through free competition<sup>8</sup>.
- Essential Requirements should be **of a non-economic nature**<sup>9</sup>. This means that they respond to a justification superior to the principle of free trade and outside commercial regulations.
- Furthermore, Essential Requirements should be **objectively justified**; that is, reasonable in relation to the scope of the justified non-economical goals.
- **The principle of proportionality** must be taken into account. This comes down to measures being adopted for the objectives pursued and not being excessive in relation to the aim pursued.
- The application should also be **non-discriminatory**. So no distinction can be made between nationals and foreigners and the measures must be applied in the same way if the material circumstances are alike.

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<sup>6</sup> Case 120/78 Rewe-Zentral, “Cassis de Dijon”

<sup>7</sup> For a full list and a complete overview of the case-law, I refer to Marc Fallon, Droit matériel général de la Communauté et de l’Union européennes, Louvain 1996, Ch 3 p 36-37 and Ch 4 p. 25-27. On the “rule of reason” can be referred to Kapteyn P.J.G. Kapteyn and P VerLoren van Themaat, Inleiding tot het recht van de Europese Gemeenschappen, Kluwer, Deventer 1987, p. 260-269

<sup>8</sup> Consideration 8 of the Services Directive 90/388

<sup>9</sup> Case 7/67 Commission vs Italy, confirmed by cases 95/81, 232/82 and 288/83

### 2.1.2 General description of Essential Requirements in ONP and Services related directives

Essential Requirements were defined in the ONP framework directive<sup>10</sup> and in the Services Directive<sup>11</sup> as “*the non-economic reasons in the general interest which may cause a Member State to restrict access to the public telecommunications network or public telecommunications services*”.

From this definition, Essential Requirements appear as negative arguments for limiting competitive access to public telecommunications services and networks with the goal of protecting those resources.

With the full liberalisation of the telecommunications sector, the texts adopting the ONP Directives<sup>12</sup> and the Services Directive<sup>13</sup> redefined the notion as “*the non-economic reasons in the public interest which may cause a Member State to impose conditions on the establishment and/or operation of telecommunications networks or the provision of telecommunications services*”

The category of entities whose resources are protected and on whom conditions are placed has changed from concerning the TOs only to include also the new actors as well, but the application of Essential Requirements hasn't really evolved. They have always been and still are a chain of specific conditions placed on access to or use of networks and services. These conditions can be included as licensing conditions for operators or service providers. They can be found in general legislation (telecom or other), individual licenses, technical regulations or contracts. The list of specific conditions will be the subject of section 2.2, while the role of Essential Requirements will be elaborated in section 2.3.

### 2.1.3 General description in terminal directives

The focus of this study will be on Essential Requirements as licensing conditions, but it must be said that the Directives concerning approval of terminal equipment<sup>14</sup> also give a role to the concept. Essential Requirements are, in that context, **a restricted set of reasons of public interest providing a basis for technical regulations that are used for the assessment and**

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<sup>10</sup> Article 2 of the Council Directive of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision

<sup>11</sup> Article 1 of the Council Directive of 28 June 1990 on competition in the markets for telecommunications services (90/388/EEC OJ L 192/10, 24.07.1990)

<sup>12</sup> Common position adopted by the Council on 12 September 1996 with a view to adopting directive 96/ /CE of the European Parliament and of the Council modifying the directives 90/387/CEE and 92/44/CEE in view of the adoption of a competitive environment in the telecommunications sector.

<sup>13</sup> Commission Directive 96/2/EC of 16 January 1996 amending Directive 90/388/EEC with regard to mobile and personal communications, OJ L 20/59, 26.01.1996, Commission Directive 96/19 amending Directive 90/388/EEC with regard to the implementation of full competition in telecommunications markets, OJ L 74/13, 22.03.1996; Common position adopted by the Council on 9 December 1996 with a view to adopting directive 96/ /EC of the European Parliament and of the Council on a common framework for general authorisations and individual licences in the field of telecommunications services. It must be said that in the wording of directive 96/19 it is stated *non-economic reasons in the general interest* in stead of *non-economic reasons in the public interest*.

<sup>14</sup> Council Directive of 24 July 1986 on the initial stage of the mutual recognition of type approval for telecommunications terminal equipment (86/361/EEC; OJ L 217/21, 5.08.1996); Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC; OJ L 139/19, 23.05.89); Council Directive of 29 April 1991 on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity (91/263/EEC; OJ L128/1; 23.05.1991); Council Directive 93/97/EEC of 29 October 1993 supplementing Directive 91/263/EEC in respect of satellite earth station equipment (93/97/EEC, OJ L290/1, 24.11.93)

**approval of terminal equipment before placing it on the market.** The harmonisation of such technical standards at European level is already existing. The European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (Cenelec) and the European Telecommunications Standards Institute (ETSI), are the bodies recognized as competent to adopt harmonized standards. Such standards are also the basis for the elaboration by the Commission, assisted by the ACTE Committee, of so called CTR's (common technical regulations), the respect of which is obligatory in all Member States. A full list of all harmonized standards drawn up by the standardization bodies, has not been attached because of its length.

Although Essential Requirements as the basis for approval of terminal equipment will not be closely studied because harmonisation is achieved by other bodies than ECTRA, we must be aware of the fact that licensing conditions can be influenced by conditions related to approval of terminals. The ONP leased line directive stipulates for example that *the use of a leased line shall not be restricted on the grounds of the interoperability of services, when the access conditions related to terminal equipment are fulfilled*. The ONP Voice Telephony Directive states something similar: *“When terminal equipment is operating in compliance with Directive 91/263/EEC, no further restrictions on use shall be imposed on the grounds of interoperability of services”<sup>15</sup>*.

In general it can be said that the licensing of service providers and operators does not include measures related to the implementation of Essential Requirements as applied in the context of approval of terminal equipment. The technical prescriptions and standards reflecting Essential Requirements in the context of the approval of terminal equipment are imposed on manufacturers and entities putting terminal equipment on the market. Therefore, Essential Requirements of this type are not conditions on access to the market by services or access to networks.

At this moment, discussion is being conducted concerning a new system for approving terminal equipment.

## **2.2 Specific telecom-related Essential Requirements**

In this section, the concepts of the specific telecom-related Essential Requirements will be treated.

The information is based entirely on EC legislation, specifically on descriptions found in the ONP leased lines directive, the ONP Interconnection Directive and the ONP-handbook<sup>16</sup>. It must be said that the handbook is an unofficial document, written in 1993. However, as pointed out before, Essential Requirements in a liberalised market have a slightly different emphasis than in a monopoly situation; the handbook is therefore used as only one input without ETO being bound by its content.

The list of conditions in the ONP-Framework Directive and the Services Directive was composed of the following four :

- security of network operations,
- maintenance of network integrity,
- interoperability of services and ,
- protection of data, which may include
  - protection of personal data,
  - confidentiality of information transmitted and stored and
  - protection of privacy.

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<sup>15</sup> Article 13, 2 (c)

<sup>16</sup> Document ONPCOM93-59 of 24 November 1993 Handbook on the application of ONP principles in European technical standards, draft 2, approved by the Subgroup on Essential Requirements on 13.12.1993

With the liberalisation of satellite and mobile communications, the list of Essential Requirements was completed with

- efficient use of frequencies
- avoidance of harmful interferences between radio-based telecommunications systems and other space-based or terrestrial technical systems<sup>17</sup>
- protection of the environment and
- town and country planning objectives.

All eight requirements are mentioned in the Directives on Liberalisation of Satellite Services, Full Competition, Licensing and modification of the ONP directives 90/387 and 92/44.

The draft directive on interconnection, on the other hand, refers only to the four initial requirements and has a specific article on protection of the environment and town and country planning. The effective use of frequencies and avoidance of harmful interferences cannot be invoked in the context of access to networks. The ONP Voice Telephony Directive, however, includes, as well as the four traditional Essential Requirements, also effective use of frequencies and avoidance of harmful interferences<sup>18</sup>. In this case only protection of the environment and town and country planning are not retained.

### 2.2.1 Security of network operations<sup>19</sup>

A telecommunication organisation's network can be damaged from two sources :

- user induced events (events caused by users or their equipment through network access)
- external events (fire, demonstrations...)

As in the ONP handbook, protection against user induced events will be treated under the section "network integrity". External events may also compromise the security of network operations, however.

Measures to safeguard the security of network operations should be limited to the period when an emergency situation prevails. An emergency situation means an exceptional case of force majeure, such as extreme weather, flood, lightning or fire, industrial action or lockouts, war, military operations, or civil disorder<sup>20</sup>. The new draft ONP Voice Telephony Directive and Interconnection Directive reduce the cases of force majeure to extreme weather, earthquakes, flood, lightning and fire. In other words, industrial action, lockouts, war, military operations and civil disorder are considered to fall under national security.

On the other hand, in those two directives, catastrophic network breakdown is added to the list of emergency situations.

#### ***ETO proposes the following description:***

*Measures to safeguard the security of the network during emergency situations are related to protection against external events such as extreme weather, earthquakes, flood, lightning,*

<sup>17</sup> In directive 94/46 , liberalising satellite communications, this essential requirement is mentioned as "... and, in the case of satellite network services, the effective use of the frequency spectrum and the avoidance of harmful interference between satellite telecommunications systems and other space-based or terrestrial technical systems."

<sup>18</sup> Avoidance of harmful interferences is not mentioned as a separate Essential Requirements. The avoidance of harmful interferences is included under the effective use of frequencies.

<sup>19</sup> Council Directive 92/44/EEC of 5 June 1992 on the application of open network provision to leased lines (92/44/EEC; OJ L 165/27, 19.06.1992)

<sup>20</sup> Article 22, 5 (a) of the ONP voice telephony directive and article 6, 3 (a) of ONP leased lines directive

*fire and catastrophic network breakdown which could compromise network operations. This protection has the goal of maintaining at least a minimum guaranteed functioning during those civil emergency situations.*

### **2.2.2 Maintenance of network integrity**

As stated before, “maintenance of network integrity” covers the measures taken to protect the network against user-induced harm. Examples of such harm cited in the ONP handbook include:

- damage to the physical network caused by applying high voltages at the interface;
- damage to the operation of the network by high amplitude, out band signals, signalling corruption, attempts to access and/or corrupt user and other data stored in the network and related systems
- damage to the quality of service caused by, for example, repeated call attempts which may reduce the availability of the network for other users;
- harm to the charging system by making calls in a way that will avoid or reduce the call charge.

In the liberalised environment one can presume, like the European Interconnection Forum, that with an increasing number of network operators, services and products, the risk of network failure caused by signalling and its impact on customers is increasing. This Forum sees network integrity as a question of network management and the ability of a network to maintain certain characteristics with regard to performance and reliability.

#### ***ETO proposes the following description***

*The protection of the physical and functional operation of a network against and its resistance to breakdown caused by electrical conditions, signalling protocols or traffic loads (which can be induced via interfaces between terminals and networks or between networks).*

### **2.2.3 Interoperability of services**

In the context of terminals, “interoperability” is called “interworking”, but for this report, reference is made to the Service Directive and ONP-directives.

The Community Policy in telecommunications aims to facilitate the Community-wide availability of networks and services. In the ONP-handbook, interoperability of services<sup>21</sup> refers to the ability of two terminals to communicate with each other through one or several networks.

The different directives do not define this essential requirement explicitly but in the Interconnection Directive, where interoperability of services is one of the underlying aims, it is also described in terms of end users, not in terms of networks<sup>22</sup>.

Ensuring interoperability is only an obligation in justified cases. As the Interconnection Directive imposes interoperability of fixed public telephone networks, leased line services and public mobile telephone networks, these services and networks have been considered the justified cases.

<sup>21</sup> ONP handbook on the application of ONP principles in European Technical Standards, p. 45

<sup>22</sup> Article 3 (2) of the Interconnection Directive states : “Member States shall ensure the adequate and efficient interconnection of the public telecommunications networks set out in Annex I to the extent necessary to insure interoperability of these services for all the users within the Community” while article 1 (c) of that same directive refers to the possibility to “impose conditions in interconnection agreements in order to ensure satisfactory end-to-end quality”.

***ETO proposes the following description***

*The interoperability requirement refers to the ability of two terminals to communicate with each other through one or several fixed public telephone networks, leased line services and public mobile telephone networks. In that context, interoperability considerations may include requirements relating to both the terminal and the network.*

**2.2.4 Protection of data**

Protection of data may include protection of personal data, confidentiality of information transmitted and stored, and protection of privacy.

In respect to data protection, two specific directives apply:

- directive 95/46<sup>23</sup>, which is a general directive
- proposal for a telecom-specific directive<sup>24</sup>, applicable on the ISDN network and public digital networks, based on the principles of the general directive.

The data protection provisions relate to two categories of personal data :

- data collected and processed by telecommunication organizations in order to be able to provide the service concerned efficiently
- data related to the identification of incoming and outgoing calls made possible by digital technology.

Data-protection thus covers the need to protect both personal data and information about the network itself.

Both directives aim at achieving an adequate level of data protection in two directions<sup>25</sup> :

- minimise the risk of abuse by limiting the data processed to the minimum required for ensuring adequate operation, service quality and subscriber facilities
- ensure the right of the subscriber to his own personal information with regard to the telecommunications organization providing the services, to second parties calling or called by means of these services and to third parties that may want to access the data transmitted.

A balance must thus be struck between the legitimate interests of those about whom information is treated (data subjects) and the legitimate interests of data users (for example the telecom operator).

***ETO proposes the following description***


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<sup>23</sup> Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ L 281 of 23.11.1995)

<sup>24</sup> Common position adopted by the Council on 12 September 1996 with a view to adopting the Directive of the European Parliament and of the Council concerning the processing of personal data and protection of privacy in the telecommunications sector, in particular in the Integrated Services Digital Network (ISDN) and in the digital mobile networks (OJ C 315/30 of 24.10.1996)

<sup>25</sup> Dumortier J., Recent developments in data privacy law, Leuven University Press, Leuven 1992

*Data-protection covers the needs to protect both personal data and information about the network itself.*

*This includes protection of personal data, confidentiality of information transmitted and stored and protection of privacy.*

*Protection of personal data covers the protection of data stored about individual users of the network, such as call data or call location.*

*Protection of user privacy is mainly related to provisions against the receipt of unwanted calls.*

*Confidentiality of information being transmitted across the network relates to the content of the calls while confidentiality of information stored relates to the data about the network and related systems*

### **2.2.5 Efficient use of frequencies**

The wording of this essential requirement in European directives is not “efficient use of frequencies” but “effective use of frequencies”. This is the case in the Terminal Directives 86/361, 91/263 and 93/97/EEC, as well as in the directives 94/46 on the liberalisation of the satellite sector, 96/19 with regard to full competition, the new ONP Voice Telephony directive and the draft Licencing Directive . “Effective” and “efficient” are, however, not exactly the same. “Effective” means *actually in operation or in use* while the meaning of “efficient” is *performing in the best possible and least wasteful manner*. For this study the wording “efficient” will be used because it corresponds to the terminology used in radioregulations and to what is found in other languages (“utilisation rationnelle” in French, “doelmatig gebruik” in Dutch, and efficient use of frequencies in the English translations of the Swedish and Finnish laws).

#### ***ETO proposes the following description***

*Efficient use of frequencies implies that this resource is used in the most efficient and least wasteful manner so that as many users as possible can make use of the frequency spectrum without mutual interfering with each other.*

*Efficient use and availability of spectrum are closely linked in the sense that efficient use and planning of frequencies positively influences availability.*

### **2.2.6 Avoidance of harmful interferences**

No description of what is meant by this essential requirement was found in EC directives. It is however useful to give some explanation, certainly in order to distinguish it from “efficient use of frequencies” and “electromagnetic compatibility”.

The RR163 describes “*harmful interference*” as  
*«interference which endangers the functioning of a radionavigation service or other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with these Regulations.»*

Avoidance of harmful interference is thus a notion which is critical to co-ordination of frequency assignments between administrations. It relates to intentional signals. The exact definition of harmful interference is however a controversial issue in ITU circles.

Electromagnetic compatibility relates to signals of an accidental nature that may be emitted by terminals. This is well defined in article 1, (4) of the EMC directive<sup>26</sup> as the ability of a

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<sup>26</sup> Directive (89/366) of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility Pb L139/19

device, unit of equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

**ETO proposes the following description**

*This notion is critical to co-ordination of frequency assignments between administrations. It relates to intentional signals, where electromagnetic compatibility relates to signals of an accidental nature that may be emitted by terminals. The exact definition of harmful interference is however a controversial issue in ITU circles.*

**2.2.7 Protection of the environment**

No description was found in European Community telecommunications legislation.

**ETO proposes the following description:**

*These measures relate to the protection of air, water, animals, plants and other natural resources from pollution or its effects.<sup>27</sup>*

**2.2.8 Town and country planning objectives**

No description was found in European Community telecommunications legislation.

**ETO proposes the following description**

*The determining of the future physical arrangements and conditions of a community or country, involving a series of constructional and legal conditions.<sup>28</sup>*

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<sup>27</sup> Based on the description in of 'environmentalist' in Webster's Encyclopedic Unabridged Dictionary of the English Language, ed. 1994, p. 447 as *any person who advocates or works to protect the air, water, animals, plants and other natural resources from pollution or its effects*

<sup>28</sup> Based on the description of 'cityplanning' in the Webster's Encyclopedic Unabridged Dictionary of the English Language, ed. 1994, p.270 as *the activity or profession of determining the future physical arrangement and condition of a community, involving an appraisal of the present condition, a forecast of future requirements, a plan for the fulfillment of these requirements, and proposals for a series of constructional, legal, and financial programs and provisions to implement the plan.*



## **2.3 The role of Essential Requirements in the licensing of telecommunications services and networks**

As set out before, the application of Essential Requirements results in a particular set of conditions in the general interest on the establishment and/or operation of services or networks. In the study of SAGATEL, national licensing conditions referring to Essential Requirements were categorised as pre-conditions or operating conditions. Regarding operating conditions, particular attention should be paid to conditions applying in the framework of interconnection between operators. Therefore, in this section, distinctions will be made between the role of Essential Requirements

1. as conditions limiting the number of licences (justification for refusal of the granting of access)
2. as operating conditions (conditions operators must comply with while carrying on their business)
3. in the context of interconnection (reasons for refusing or suspending interconnection agreements).

### **2.3.1 Essential Requirements as conditions limiting the number of licences.**

When it comes down to conditions imposed before operating a service or a network, only one essential requirement can be involved: efficient use of frequencies. The draft Licensing directive states very clearly in consideration 13 and in article 10 that *Member States may limit the number of individual licenses for any category of telecommunications services and for the establishment and/or operation of telecommunications infrastructure, only to the extent required to ensure the efficient use of radio frequencies or for the time necessary to make available sufficient numbers in accordance with Community law.*

The directive 95/51 on the use of CTV networks for liberalised services is explicit on the point that Essential Requirements are not a sufficient justification for restricting the use of CTV networks to the distribution of radio and television broadcasting programmes<sup>29</sup>. Also, directive 96/19 on full competition says in its article 1, point 6, 3 that *Member States may limit the number of licences to be issued only where related to the lack of availability of frequency spectrum and justified under the principle of proportionality.*

Limitation of the number of operators, however, is linked more closely to the availability of frequencies than to the efficient use of them. For that reason, limitation of the number of operators will not be considered in this study dealing with Essential Requirements.

Article 4d on full competition states that *Member States shall not discriminate between providers of public telecommunications networks with regard to the granting of rights of way for the provision of such networks. Where the granting of additional rights of way to undertakings wishing to provide public telecommunications networks is not possible due to applicable Essential Requirements, Member States shall ensure access to existing facilities established under rights of way which may not be duplicated at reasonable terms.* The number of network operators can therefore not be limited on the ground of protection of the environment or town and country planning.

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<sup>29</sup> Consideration (7) Such regulatory restrictions cannot be justified for public policy reasons or in terms of Essential Requirements, since the latter, and in particular the Essential Requirements of interworking networks whenever cable TV networks and telecommunications networks are interconnected, can be guaranteed by less restrictive measures, such as objective, non-discriminatory and transparent declaration or licensing conditions

Conditions limiting the number of licences can only be related to the lack of availability of frequencies. Besides that, protection of the environment and town and country planning requirements can restrict the granting of rights of way so that sharing of facilities established under rights of way must be ensured.

### 2.3.2 Essential Requirements as operating conditions

A) Concerning the **security of network operations during an emergency situation**, the ONP-leased line directive and the draft Interconnection Directive demand that telecommunication organisations should make every endeavour to ensure the availability of public telecommunication networks and publicly available telecommunication services or to maintain the highest level of service to meet any priority laid down by the competent national authorities<sup>30</sup>. The following measures may be taken to safeguard the network..<sup>31</sup>

- *interruption of the service,*
- *limitation of service features,*
- *denial of access to the service.*

In case such measures are taken, *the telecommunications organization has to immediately notify to the users and the national regulatory authority the beginning and the end of the emergency as well as the nature and extent of temporary service restrictions.*

**Conditions for securing network operations as an operating condition must be applied, but only to public telecommunication networks and services. These sorts of measures to safeguard networks is only described in the leased line directive and there it appears to be very broad and drastic.**

B) In order to **protect the network from user induced harm**, restrictions can be applied through licensing conditions or through technical standards.

For the use of leased lines, the relevant directive saw no justification for restrictions on use on the ground of maintenance of network integrity *as long as the access conditions related to terminal equipment are fulfilled*<sup>32</sup>. But terminals could malfunction or users could deliberately attempt to defraud.

The Interconnection Directive says in article 10 (b) *that national regulatory authorities shall take all necessary steps to ensure that the integrity of public telecommunications networks is maintained. The national regulatory authority shall ensure that conditions for interconnection related to protection of network integrity, including specific conditions to compensate one party in the event of network harm caused by the other party, are proportional and non-discriminatory in nature, and are based on objective criteria identified in advance.*

**The network integrity of public telecommunications networks and services has to be maintained. Conditions should, however, be limited to cases where access conditions related to terminal equipment are not fulfilled.**

C) The **interoperability of services** may include requirements both in relation to the terminal and in relation to the network.

Concerning terminal equipment, directive 91/263 imposes the obligation of interworking of terminal equipment via the public telecommunications network only **in justified cases**.

<sup>30</sup> The reference to contingency plans can only be found in the draft ONP interconnect directive

<sup>31</sup> article 6, 3 (a) of the leased line directive.

<sup>32</sup> article 22, 5 (b) of the ONP voice telephony directive

Justified cases are defined in general in article 4 as cases where the terminal equipment supports:

- a) services for which special or exclusive rights were granted by Member States, according to Community law
- b) a service for which the Council has decided that there should be Community-wide availability.

The only justified cases at present are the voice telephony service, and voice calls over GSM and DECT. The implementation of these services is secured on the basis of ETSI standards. Those functions of the network which have to be regulated in order to ensure interworking are, for example, numbering, signalling, charging, protocol conversion, fault location etc.

The ONP essential requirement of interoperability of services has, until now, had no immediate impact on standardisation but that could change under the ONP Interconnection Directive.

According to the ONP Leased Line Directive, *the use of a leased line should not be restricted on the grounds of the interoperability of services, when the access conditions related to terminal equipment are fulfilled*<sup>33</sup>.

For packet switching as well as for ISDN there are no ONP mandatory requirements for ISDN interoperability. But for ISDN, a minimum set of ISDN offerings, to be made available on a Community-wide basis, is fixed. A list of the voluntary network standards produced by ETSI and including considerations of interworking between ISDN and non-ISDN is published in the OJ.

The ONP Interconnection Directive foresees that *national regulatory authorities may impose conditions in interconnection agreements in order to ensure interoperability of services, including conditions designed to ensure satisfactory end-to-end quality. Such conditions may include implementation of specific technical standards, or specifications, or industry-agreed codes of conduct.*<sup>34</sup> Moreover, article 3 of that Directive obliges interconnection of fixed public telephone networks, leased line services and public mobile telephone networks to the extent necessary to ensure interoperability of these services for all users within the Community.

New European standards for interconnection may be needed. They should take into account the harmonisation of technical interfaces and access conditions on the international level. As long as harmonised European standards are not under development, national standards can be applied.<sup>35</sup>

**Operating conditions linked to interoperability can be limited to public telephone networks (fixed and mobile) and to leased line services. Such conditions may include requirements for both the terminal and the network.**

#### **D) Datacommunication**

The provisions of the proposal for a directive concerning the processing of personal data and the protection of privacy in the telecommunications sector only apply to public

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<sup>33</sup> article 6, 3 (c)

<sup>34</sup> Article 10, (c)

<sup>35</sup> Directive 83/189 of the Council of 28 March 1983, amended by Council Decision 96/139

telecommunications networks and services. The directive 95/46<sup>36</sup>, on the other hand, does not distinguish between public and private networks.

**The protection of data can result in licensing conditions for all telecommunications services and networks.**

**E) Efficient use of frequencies**

Frequencies are always a scarce resource, if they are used for private or for public telecommunications. Therefore, **conditions to guarantee the efficient use of frequencies apply in all cases where wireless technologies are used.**

F) Article 9, 5 of the licensing directive states that *in the event of harmful interferences between a telecommunications network using radio frequencies and other technical systems the national regulatory authority may take immediate action to remedy that problem. In such a case the undertaking concerned shall thereafter be given a reasonable opportunity to state its view and to propose any remedy to the harmful interference.*

**Conditions related to the event of harmful interferences can be imposed on all kinds of telecommunications networks using radiofrequencies and other technical systems. If action has to be taken, this should be done by an NRA in a way proportionate to the problem created by the harmful interferences.**

G) **Protection of the environment and town and country planning objectives** are often mentioned together. The only reference found in directives relates to the sharing of facilities.

Article 3c of Directive 96/2 concerning liberalisation of CATV networks puts forward for the first time the lifting of constraints on the sharing of infrastructure, other facilities and sites.

The Interconnection Directive is more explicit; facility sharing is recognised as a benefit for town planning, environmental, economic or other reasons<sup>37</sup>. Therefore, it should be encouraged in cases where one of the organisations has rights of way, especially between organisations providing public telecommunications services or networks. Collocation or facility sharing, according to article 11, should normally be a matter for commercial and technical agreement between the parties concerned. It can, however, be imposed after public consultation.

In this way, it is possible to avoid this essential requirement becoming too severe a restriction on the liberalisation of infrastructure. Consideration 23 of Directive 96/19 expresses this clearly : *"...all public telecommunication network operators having essential resources for which competitors do not have economic alternatives are to provide open and non-discriminatory access to those resources."*

After public consultation, conditions can be imposed concerning the sharing of facilities between organisations providing public telecommunications services or networks holding essential resources and their competitors which normally do not have access to these resources.

Operating conditions can reflect all Essential Requirements.

- Obligations in the framework of the security of network operations and maintenance of network integrity are mandatory, but only for public telecommunications networks.

<sup>36</sup> Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ L 281 of 23.11.1995)

<sup>37</sup> Consideration 14 of the Interconnection Directive.

- Interoperability can only be imposed in justified cases; for example on public telephone networks (fixed and mobile) and on leased line services.
- Requirements concerning the protection of datacommunication can apply to all telecommunications networks and services (public as well as private)
- Avoidance of harmful interferences can be imposed on all kinds of telecommunications networks using radio frequencies and other technical systems
- Conditions imposed concerning the sharing of facilities can only involve organisations providing telecommunications services or networks holding essential resources.

### 2.3.3 Essential Requirements in interoperator relations

As stated before, the Interconnection Directive only enumerates 4 Essential Requirements (security of network operations, maintenance of network integrity, interoperability of services and protection of data). Protection of the environment and town and country planning objectives can, however, also be considered because article 11 focusses on collocation and facility sharing. Agreements concerning interconnection with public telecommunications networks and/or services can reflect conditions related to all of these Essential Requirements. However, they do not constitute a valid reason for refusal to negotiate terms for interconnection<sup>38</sup>.

Maintenance of the integrity of the network and interoperability of services are explicitly cited as elements to be taken into account for the resolution of disputes.

Interconnection agreements may include specific conditions to compensate one party in the event of unavailability of the other party's facilities during an emergency.<sup>39</sup>

The regulation of access to information is, along with the guarantee of equal access, one of the basic underlying goals of this directive<sup>40</sup>. Article 3 (3) explicitly stimulates that Member States shall ensure that organisations which interconnect their facilities with public telecommunications networks and/or publicly available telecommunications services *respect at all times the confidentiality of information transmitted or stored*.

Article 6 (d) mentions that *information received from an organisation seeking interconnection is used only for the purpose for which it was supplied. It shall not be passed on to other departments, subsidiaries or partners for whom such information could provide a competitive advantage*.

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<sup>38</sup> article 10 of the Interconnection Directive

<sup>39</sup> article 10 (b) of the Interconnection Directive

<sup>40</sup> Consideration 9 of the Interconnection Directive

The Essential Requirements in the context of interconnection agreements are limited to security of network operations, maintenance of network integrity, interoperability of services, protection of data, protection of the environment and town/country planning objectives. Such conditions do not constitute valid reasons for refusing to negotiate terms for interconnection. Only public telecommunications networks and services can be subject to such conditions.

### 3 Experiences of non-incumbent operators

During the meeting of the Project Team on Licensing in Rome in May 97, it was agreed that ETO would consult non-incumbent operators.

On the basis of the ETO-database and addresses provided by NRAs, a questionnaire was sent out to 70 operators and service-providers in 11 countries. A full list of the addressees can be found in annex .

The questionnaire, attached in annex 3, was based on the structure of the report and therefore composed of four parts :

- A. identification
- B. Essential Requirements as conditions for access to the market (*referring to the stage where an applicant applies for an authorisation*)
- C. Essential Requirements as operating conditions (*referring to the conditions which have to be observed while operating normally*).
- D. Essential Requirements as conditions for access to networks (*referring to the context of interconnecting to other networks or access to public networks*).

Furthermore, the aim of the questionnaire was to find out the impact of conditions based on Essential Requirements. Have these conditions ever been used or abused?

The emphasis of the questionnaire was therefore on non-respect of Essential Requirements. The subjects treated were mainly : what were the sanctions, who provided interpretation of the essential requirement (NRA or operator), what procedure was followed. This emphasis on cases of non-respect could give the wrong impression that Essential Requirements were narrowly interpreted as “conditions which could restrict access to networks”. It is therefore important to specify again that Essential Requirements involve a wide range of licensing conditions in the general interest. But the questionnaire did not include questions related to specific licensing conditions because it was not used to discover which conditions were imposed and to check if the information on licensing conditions contained in the first interim report is complete and correct. This was judged to be the task of the NRAs and the members of the project team.

As was mentioned in the accompanying letter, all the information provided has been treated as confidential way by ETO and the assessment of the answers was done in an abstract and anonymous way.

#### **PART A : Identification**

##### **Number of questionnaires and response**

Of the 70 questionnaires sent out, 10 elicited replies. Four more companies were enthusiastic about collaborating, but two of them decided in the end not to reply due to lack of time. The other two did not give a specific reason.

##### **Telecommunications activities represented**

However, as the table demonstrates, the activities of the ones that did reply represent the full scale of telecom operators and service providers. It must be said that all companies answering were active in more than one domain.

mobile operator	2
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airtime reseller	0
satellite networks and services	1
operator of alternative infrastructure	4
provider of value added services	5
provider of premium rate services	1
provider of internet access	3
provider of bearer data services	2
provider of voice telephony	4
fixed public telephone network under universal service obligations	1

### Countries involved

The countries in which conditions related to Essential Requirements were experienced were : Denmark, Italy, The Netherlands, Norway, Spain, Sweden, Cyprus and Poland.

It should be clear that this list of countries cannot lead to the conclusion that in these countries there are more limitations or that in the countries which do not appear in the list no specific conditions have ever been applied.

First of all, although great effort was put into reaching the most representative newcomers in the different countries and into motivating them to reply, it could very well be possible that a company with interesting experiences was not included in the mailing-list or found it not expedient to reply.

Secondly, it must be underlined that Essential Requirements should not be defined in a limited way, as in “the old days”, as *reasons to restrict access* to the public telecommunications network or services. The new ONP framework directive and the licensing directive redefine the concept as reasons which may impose *conditions* on the establishment and/or operation of telecommunications services and networks.

In other words, Essential Requirements do not necessarily have to appear as negative arguments for limiting competition. They can take the form of a large scale of “normal”, non-restrictive, licensing conditions. The specificity these conditions have is that they serve specific goals in the public interest.

The conclusions on the findings are given for each of the parts B, C and D of the questionnaire.

### **PART B: Essential Requirements as conditions limiting the number of licences.**

In chapter 2, the only essential requirement retained to limit the number of licences was “efficient use of frequencies”. No other essential requirement is mentioned in European directives as being a sufficient reason to impose conditions before starting to operate the service.

The questions in part B of the questionnaire are aimed at finding out if

- Essential Requirements other than “efficient use of frequencies” have ever been invoked
- licences or permissions to operate a service has ever been refused
- licences or permissions to operate a service were ever limited in time.

From the answers received it appears that :
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- none of the operators or service providers have ever been refused a licence or a permission to operate a service on the basis of Essential Requirements. However, it was revealed that spectrum allocation was sometimes a problem but this was due to the fact that mobile licences have been given often on a case by case basis and are technology oriented. If legislation was not put in place on time, the licence to use the spectrum was not delivered. This sort of problem to access the market is however not related to the application of “efficient use of frequencies”, strictly speaking.
- no time limits were encountered

### **PART C : Essential Requirements as operating conditions**

Operating conditions can reflect all Essential Requirements. The questions related however mainly to the efficient use of frequencies and avoidance of harmful interference.

Obligations in the framework of the security of network operations and maintenance of network integrity are mandatory, but only for public telecommunications networks. Interoperability is secured in the context of interconnection.

Moreover, the country-related analysis had already made clear what practical measures are imposed in the different countries. What was most interesting to know was therefore if authorisations or permissions to operate a service or network had ever been revoked, suspended or altered on the grounds of efficient use of frequencies or avoidance of harmful interferences.

- As stated before, although problems with frequency allocation were revealed, the source for this must be situated in the preparation of relevant legislation. This, as a consequence, influences access to the market.
- No experiences regarding the sanctioning of conditions imposed on behalf of efficient use of frequencies or harmful interferences while operating the service or network were mentioned

### **PART D : Essential Requirements in the context of interconnection**

According to the Interconnection Directive, the Essential Requirements in the context of interconnection agreements are limited to security of network operations, maintenance of network integrity, interoperability of services and protection of data. Protection of the environment and town and country planning objectives can, however, also be considered because article 11 of the Interconnection Directive refers to collocation and facility sharing. Such conditions do not constitute valid reasons for refusing to negotiate terms for interconnection. Only public telecommunications networks and services can be subject to such conditions.

Here, distinction is made between the use of Essential Requirements as conditions imposed on interconnection and Essential Requirements as motivation for the refusal of interconnection.

Although interconnection is only starting to become an issue for most operators, it appears that this will be the field where conditions imposed on behalf of Essential Requirements will be most relevant.

Operators with significant market power have invoked data protection and network integrity to refuse identification services.

In section 4 of the report, the case of refusal of identification services on the basis of data protection will be examined further. The collection of information on this subject can be found in annex 4 of this report.

## 4. Survey and analysis

The discussion with ECTRA members during the extra ordinary plenary of 7 April resulted in the decision that ETO should prepare detailed formulations on

- the distinction between different kinds of services or operators.
- clear descriptions of each essential requirement
- a list of detailed measures which can be imposed

The country analysis, contained in annex 2, and the results of the consultation with newcomers, summarised in section 3, above will be used to work out the three aspects mentioned. For the survey of “security of network operations” and “data-protection”, extra information has been collected. First, interviews were conducted with representatives of Belgium, Denmark, the Netherlands, Norway and the UK in the NATO Civil Emergency Planning Committee in order to find out how NATO recommendations on the subject of security of network operations were influencing the licensing regime of telecommunications services and networks. Concerning data-protection, the consultation with industry revealed that some restrictions were experienced in the context of interconnection because data-protection was used as an argument to refuse identifications services. By means of a questionnaire sent out to all members of the ECTRA Project Team on Licensing the national provisions concerning the following aspects of line identification services were examined:

1. obligations comparable to the provisions in article 8 of the European data-protection directive
2. what sort of services and networks are subject to provisions on line identification
3. regulation concerning authenticity of the calling number
4. specific provisions for CLI in case of calls to emergency services
5. specific provisions for the use of CLI for malicious call tracing
6. differentiation of responsibilities for the operators of the originating network, transit network and receiving network
7. provisions of line identification in the context of interconnection and specifically the possibility for operators (with significant market power) to refuse line identification to operators requesting interconnection on the basis of data-protection.

Information from the following countries was included: Belgium, Denmark, France, Luxembourg, the Netherlands, Switzerland; Sweden and UK.

The results of this collection of information can be found in annex 4.

In this chapter, a first section (**4.1**), called “When to apply Essential Requirements?” sets out the basic structure for the other sections in line with the way the country analysis was presented in the annex 2.

The section **4.2** on “Who is subject to Essential Requirements?” aims at distinguishing between different kinds of services or operators. This will be done for each essential requirement separately.

The descriptions and the detailed measures will be treated together in section **4.3**. As set out before, already when the consultant Sagatel presented the first collection of information it became obvious that a clear description of each of the Essential Requirements would be of great value to determine which detailed measures to take into account in the study. Therefore, descriptions were proposed, mainly on the basis of community legislation, in section 2.2. Because the aim of these descriptions is to clarify the detailed measures taken into account for each essential requirement, it is expedient to include both the description and the detailed measures in the same section.

Finally, the consequences of non-respect of Essential Requirements are treated in section **4.4**.

## 4.1 When to apply Essential Requirements

The Essential Requirements taken into account in this study are, as set out in the work requirement, those which are found in service related EC-directives. For an in-depth analysis of the Essential Requirements that are considered, reference is made to section 2.

Throughout the study, the licensing conditions are categorised according to their role. Distinctions are made between

1. conditions used to limit the number of operators
2. operating conditions (conditions to be respected while carrying on the business)
3. conditions in the context of interconnection

If we represent the result of the analysis of EC legislation (see section 2) in a table, the following result emerges :

	<b>limitation of number of licences</b>	<b>operating conditions</b>	<b>interconnection</b>
<b>security of network operations</b>		X	X
<b>maintenance of network integrity</b>		X	X
<b>interoperability of services</b>		X	X
<b>data-protection</b>		X	X
<b>efficient use of frequencies</b>	X	X	
<b>avoidance of harmful interferences</b>	X	X	
<b>protection of the environment</b>		X	X
<b>town and country planning</b>		X	X

Conditions to limit the number of licences can only be related to the lack of availability of frequencies.

Operating conditions can reflect all Essential Requirements. However, the kind of service or operator they address differs substantially.

The Essential Requirements in the context of interconnection do not include the frequency related requirements.

## 4.2 Who is subject to Essential Requirements?

From the country analysis in annex 2 it appears that the entities subject to detailed measures vary greatly, both with regard to different Essential Requirements and in the different countries.

The survey results will be given for each Essential Requirement separately.

- **Security of network operations**

This obligation was traditionally imposed on the operator who had the infrastructure monopoly. The emergence of new access networks and the interconnection of networks changes the situation completely. The issue is at the moment very much under discussion in most countries.

The following table is the result of restructuring the information found in the country analysis (see annex 2) according to the table set out in section 4.1

limitation to the number of licences	operating conditions	interconnection
<i>not relevant</i>	<ul style="list-style-type: none"> <li>• all operators 2</li> <li>• Public telecom operators (PTO) 5</li> <li>• PTO, providers of leased lines and operators with SMP 1</li> <li>• Buildings and centres of telecom and operators of leased lines 1</li> <li>• operators with SMP 1</li> </ul>	Public telecom operators 5 operators with SMP 3

There seems to be a tendency to impose the obligation on all public operators, independent of whether or not they provide the access network.

- **Maintenance of network integrity**

This issue becomes important in the context of interconnection. As can be concluded from the information collected in annex 2 represented in the table below, the tendency is to address public operators or operators with significant market power. Detailed measures, however, were hardly imposed. The matter seems to have been mainly left to the parties discussing a commercial interconnection agreement. Both parties have an interest to secure network integrity. The operator with significant market power has the onus to reasonably protect itself. The newcomer has no interest in jeopardizing the network over which services are provided to its own customers. Therefore, there should be no a priori refusal of interconnection for reasons of network integrity. However, in case of service outage or degradation in the operational phase, the afflicted operator should retain the right to disconnect.

limitation of the number of licences	operating conditions*	interconnection*
<i>not relevant</i>	Public telecom operators 5 All operators 1 Providers of leased lines 1	Public telecom operators 5 operators with SMP 3

- ***Interoperability***

Ensuring interoperability is only an obligation in justified cases. As the Interconnection Directive imposes interoperability of fixed public telephone networks, leased line services and public mobile telephone networks, these services and networks have been considered the justified cases. It can therefore be supported that the operators offering these services are subject to this requirement. However, the main responsibility is with manufacturers of terminal equipment. As analysed in section 2.1.3 licensing conditions should not impose restrictions on the grounds of interoperability when terminal equipment is operating in compliance with Directive 91/263/EEC.

- ***Efficient use of frequencies and avoidance of harmful interferences***

These obligations apply to all holders of licences who use the spectrum. However, limitation of access to frequencies should be exceptional. When shortage does occur, procedures should aim at allowing on the market those services and networks showing the best frequency economy compared with other alternative applications and a wide range of services of good quality and value.

- ***Data-protection, protection of the environment, town and country planning***

For this study only specific telecommunications regulation has been taken into account. As these Essential Requirements concern matters where the general interest is broader than the telecommunications sector, the obligations often are laid down outside the telecommunications regulation. Only the aspect of line identification has been studied in-depth. The organisations subject to the regulation, are operators of public voice, (fixed as well as mobile), in the Netherlands and Denmark.

**Conclusion:**

**The entities subject to detailed measures vary greatly, both with regard to different Essential Requirements and in the different countries. It is therefore impossible to list in a general way the entities to which Essential Requirements should apply.**

### 4.3 Detailed measures

As set out before, the country analysis contained in annex 2 and the results of the consultation with newcomers summarised in section 3 will be used as the basis for the survey and analysis of the detailed measures imposed to ensure Essential Requirements. However; for the survey of “security of network operations” and “data-protection”, extra information has been collected.

Additional interviews were conducted with representatives of Belgium, Denmark, The Netherlands, Norway and the UK in the NATO Civil Emergency Planning Committee in order to find out how NATO recommendations on the subject of security of network operations were influencing the licensing regime of telecommunications services and networks.

Concerning data-protection, the consultation with industry revealed that some restrictions were experienced in the context of interconnection because data-protection was used as an argument to refuse identifications services. By means of a questionnaire sent out to all members of the ECTRA Project Team on Licensing, the national provisions concerning the data-protection aspects of line identification services were examined.

Finally, it is useful to mention in advance that each subsection will start with the description worked out in section 2.2. This seems expedient, because the aim of working out these descriptions was exactly to clarify the detailed measures taken into account for each essential requirement.

In the summary table included for most of the subsections, the first column indicates in how many countries the detailed measure was found. In the following column it is stated by which legal instrument the measure is enforced. This can be general telecommunications legislation (Gen), individual licence (indiv lic), other non-telecom specific legislation (other) or interconnection agreement (inter agr)

#### 4.3.1 Security of network operations

- **Description**

*Measures to safeguard the security of the network during emergency situations are related to protecting the network against external events such as extreme weather, earthquakes, flood, lightning, fire and catastrophic network breakdown which could compromise network operations. This protection has the goal of maintaining at least a minimum guaranteed functioning during such civil emergency situations.*

During emergency situations, telecommunications networks become of vital importance. Sweden has included this essential requirement as one of the primary goals of its telecommunications act. Often, in these civil emergency situations, the network capacity is not adequate to cope with the traffic. This can be either because parts of the network are out of service or because the number of calls increases dramatically (e.g.. due to the fact that people want to reassure their friends and relatives.). The consequence is congestion of the network and loss of quality, which may be manifested through a large number of unsuccessful call attempts and call setup delays.

- **Measures**

Detailed measures found in national legislation are:

- Description of emergency situations (4 countries)
- Internal organisation in preparation for emergency situations (7 countries)
- Obligations in terms of equipment in preparation for emergency situations (4 countries)

- Measures and possible actions in case of emergency situations to enable the use of the network for the most vital users (4 countries)
- Obligation to establish contingency planning (4 countries)
- Obligations to notify users and regulator of the nature and duration of the emergency (3 countries)
- Ground for operator to impose specific conditions (1 country)

**From the analysis it appears that all countries enforce specific regulation. The provisions are often of an organisational nature.**

**However it must be observed that often no distinction is made between measures for civil emergency situations and measures related to “state security”. The general framework is often not the telecommunications legislation.**

The measures related to safeguarding the security of the network during emergency situations are in some countries, to a certain extent, implemented to enforce NATO recommendations elaborated by the Civil Communications Planning Committee. The provisions apply to civil emergencies, but many can be traced back to provisions for war time and they relate mainly to

- the obligation for telecommunications operators to take precautionary measures in order to be prepared for extraordinary circumstances
- obligations to use the networks for the most vital users in case of emergency
- the establishment of an emergency preference, allowing certain users a higher priority in setting up their connections.

An emergency preference scheme intends to ensure that call attempts from (and sometimes to) the vital users are switched through successfully and without delay. This can be realised, for example, by

- not limiting the call duration of these users whereas other calls are limited and automatically disconnected after a certain limited time
- reserving a certain percentage of the normal network capacity for calls from (and sometimes to) these vital users.

The implementation of this NATO recommendation in telecommunications legislation and the consequences on telecommunications licences are analysed for the following 4 countries : Denmark<sup>41</sup>, Norway<sup>42</sup>, the Netherlands<sup>43</sup> and UK<sup>44</sup>.

- **Denmark**

New, specific telecommunications regulation will be in place by the end of October 1997. As a general rule all providers are subject to rules on preparedness. Operators of networks have to implement a priority system where essential users enjoy preference.

- **Norway**

The Telecommunications Act is being changed at this moment regarding this aspect. A hearing was organised in September on this matter. At this moment, only the concession of Telenor includes provisions on technical, operational and organisational aspects of civil emergency planning. It has not yet been decided which additional operators to impose

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<sup>41</sup> Information based on an interview with a responsible from the National Telecom Agency

<sup>42</sup> Information based on an interview with a responsible from the Ministry of Transport and Communication

<sup>43</sup> Information based on an interview with a responsible from HDTP

<sup>44</sup> Information based on an interview with a responsible from the Home-Office

obligations on in order to guarantee the functioning of the network in emergency situations nor has it been decided what precise provisions they will need to respect.

- **The Netherlands**

At this moment an updating and review of emergency legislation is taking place. The idea is to incorporate specific provisions into sector specific legislation in place of a separate (global) emergency legislation.

Emergency powers and legislation can be applied in normal as well as in extraordinary circumstances. Normal circumstances in this respect are situations wherein a certain sector of society might be affected, but this does not lead to major disturbances of other (vital) sectors (e.g. a breakdown of a local switch in the PSTN).

Article 60 of the Telecommunications Act provides a basis for the national authorities to oblige the telecommunications operators to take precautionary measures, in order to be prepared for extraordinary circumstances. These obligations are specified in separate licences that were granted to the operators and consist of obligations concerning equipment, personnel and organization. On a regular basis, these operators have to report to the national authorities on the measures taken.

The new Telecommunications Act will include the same provisions concerning network-security. However, in order to harmonize the obligations imposed on different telecommunications providers, the conditions will no longer be part of individual licences but will be part of a system of general directives under article 14.1.

- **UK**

All individual licences include clauses related to emergency situations.

Three operators (BT, Mercury and Kingston) are obliged to deliver emergency calls to 999 free to the subscriber. All other licensed operators have to deliver these services through one of the three mentioned before.

All operators have the obligation to discuss with relevant emergency planning personnel (police, firebrigade, ambulance, central government and local authorities) the technical and organisational aspects of specific requirements in the area.

In peace time, an emergency preference system can be used to protect the network against overload.

Operators of cellular mobile networks also have an obligation to prevent overload on the network.

Finally, it is of interest to mention that in the future ITU-T SG2 and ITU-T SG11 will probably work on this subject with the aim of implementing a common European preference scheme. The adoption in ITU-T of one or two questions is needed in order to develop an international standard. At the moment, the submission of the study question to SG 2 is in preparation. If the study group accepts the question, a service description needs to be given on the basis of which SG 11 will then elaborate specifications for the switching and signalling systems.

**For future developments, the ITU work should therefore be followed.**

- **Summary of detailed measures related to safeguarding the security of network operations**

The first column indicates in how many countries the detailed measure was found. In the following column it is stated by which legal instrument the measure is enforced. This can be general telecommunications legislation (Gen), individual licence (indiv lic), other non-telecom specific legislation (other) or interconnection agreement (inter agr).

<i>description</i>	Measures to safeguard the security of the network during emergency situations are related to protecting the network against external events such as extreme weather, earthquakes, flood, lightening, fire and catastrophic network breakdown which could compromise network operations. This protection has the goal of maintaining at least a minimum guaranteed functioning during such civil emergency situations.	<b>Detailed measures</b>					<b>implementation</b>					
							nr/ 12	gen	indiv .lic	other	inter agr	
<i>limitation to the number of licences</i>	<i>not applicable</i>											
<i>operating conditions</i>	<ul style="list-style-type: none"> <li>• Description of emergency situations</li> <li>• Obligations in terms of internal organisation in preparation for emergency situations</li> <li>• Obligations in terms of equipment in preparation for emergency situations</li> <li>• Measures and possible actions in case of emergency situations to enable the use of the network for the most vital users</li> <li>• Obligation to set up contingency plans</li> <li>• Notify users and regulator of the nature and duration of emergency</li> </ul>	4	X		X							
		7	X	X	X							
		4	X	X	X							
		4	X	X	X							
		4							X			
		3							X			
<i>intercon- nection</i>	<ul style="list-style-type: none"> <li>• Ground for operator to impose specific conditions</li> <li>• Standardisation</li> </ul>	1 na	X						X		X	X

**Conclusion :**

- *This essential requirement is specific for the telecommunication sector. All countries consider it of importance and it can be assumed that the measures set out before will continue to exist even in a fully and fairly competitive market.*
- *In the future, ITU will probably start work on harmonisation. This will be based on provisions related to preference regulation as well as organisational and technical precautionary measures already implemented in NATO-countries.*
- *In a multi-network environment, the responsibilities in terms of cost and responsibilities need to be reconsidered.*

### 4.3.2 Maintenance of network integrity

- **Description**

*This essential requirement can be described as the protection of the physical and functional operation of a network against and its resistance to breakdown caused by electrical conditions, signalling protocols or traffic loads (which can be induced via interfaces between terminals and networks or between networks).*

- **Measures**

Unlike in the US<sup>45</sup>, no major network breakdowns have ever occurred in Europe. It is therefore not surprising that in all countries national legislation holds little more than a general reference to the protection of network integrity or to ONP-standards.

Different price structures, different technologies and the existence of monopolies can explain why network integrity was not jeopardized. In the US the absence of pricing of local calls and a high penetration of internet use has created overload on the networks. Furthermore, protection of network integrity becomes an crucial element for interconnection in a multi-network environment. Notwithstanding this, it can be expected that interconnection, in a first phase, will not influence the licensing conditions imposed by general or individual authorisation. Industry seems to believe in self-regulation and guidelines on interconnection testing and fault-reporting elaborated in the framework interconnection agreement proposed by the EIF. Only if it appears that significant difficulties arise for new entrants, NRAs should envisage regulation on these points.

- From discussions **within TRIS**, it became apparent that with regard to hat for the security aspect in the context of interconnection, distinction has to be made between the intelligent networks and non- intelligent networks. In the case of interconnection of non-IN networks, the risk of jeopardising network integrity is limited if the measures mentioned above are taken into account, especially interconnection testing. In an IN environment the risks for network failure and expansion of failures is higher and network protection becomes even more important but at the same time more complicated. Standards are being developed at the ITU-T and ETSI level. In a first phase, Capability Set 1, the work has been almost completed for the introduction of IN in one network. CS-2, addressing security procedures for the interconnection of several INs, is still in process.

In general, the key points of the TRIS position are:

- Place the onus on the operators with significant market power to include reasonable self protection of their networks
- During interconnection agreement the agreed tests should not present unreasonable cost and time burdens on the requesting parties
- Testing specifications should be agreed voluntarily by industry and where appropriate they should be developed in ETSI.
- Network integrity should not be an a-priori reason for refusing interconnection unless the concern can be proven.
- Where a-priori integrity concerns exist, the operator should publish full technical argumentation but still interconnect
- The operator should retain the right to disconnect during in-service operation if an integrity problem causes service outage or degradation.

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<sup>45</sup> Illustration of problems in the US problems with congestion of the network due to internet traffic can be found in the following articles : “*Phone levy unites US Internet Providers*”, Communications Week International, 20 January 1997 p. 6; “*Baby Bells turn to the FCC as internet traffic row escalates*” Communications Week International, 3 February 1997 p. 10

- The a posteriori solutions should be published
- The **Network Integrity Working Group of the European Interconnection Forum** (EIF WG) identified the following issues of particular interest for the safeguarding of network integrity in the context of interconnection:
  - network interoperability and interconnection testing
  - establishment of a pan-European fault reporting procedure
  - special network access.

The orientation given by this group resulted in sections 12 and 13 of the EIF Framework Interconnection Agreement Guidelines. No progress was made on special network access.

The need for testing interconnection hardware and software is deemed necessary to maintain network integrity and verify the interoperability of services as well as to ensure a reasonable quality of service and continuous service provision to the end customer.

The EIF gives the following guidelines concerning this aspect:

- national or international standardisation of interfaces between networks as well as special national and/or international solutions;
- compatibility measures to ensure that networks or systems with different levels of performance work together correctly;
- requirements on reliability, performance and expertise to maintain network integrity including the following stipulations
  - every network operator should have competent personnel and technical equipment available 24 hours per day
  - each party should be responsible for the safety and operation of its own system
  - there should be points of contact and escalation procedures to guarantee a rapid, non-discriminatory response in case of faults
  - every network operator should be informed at all times about the condition/status of his network and should pass on relevant information to other interconnected operators in order to be able to identify and clear faults and overloads rapidly
- differentiation between four categories of CSS7 testing for which the testing content and procedure may vary according to national specifications of technical solutions

Interconnection testing is an important element in securing network integrity but in a “multinetwork” environment it may not be sufficient. The EIF WG therefore studied the establishment of a voluntary European fault reporting procedure, as already proposed in a study of UCL and existing in the US. The main benefits of the implementation of such a system which were recognised during discussions within ETNO and the EIF WG were<sup>46</sup>:

- reassurance of all actors that the network integrity issue is being competently handled,
- provision of overall trends which could be a reliable basis for industry to decide what other joint initiatives could be required,
- avoidance of accidents being repeated thanks to information provided to individual operators.

Notwithstanding the acknowledgement of these benefits, it was felt that no such initiative should be undertaken for the moment. The reasons are the wide divergence of network

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<sup>46</sup> Final Report of the European Interconnection Forum Network Integrity Working Group, p 6

equipment and network figuration together with the circulation of information by manufacturers.

Guidelines for fault reporting in the Framework Interconnection Agreement Guidelines include:

- prompt information on any faults in a system by the first party who becomes aware of it and prompt action to resolve the problem by the party in whose system the fault has arisen. If rectification cannot be carried out immediately, the other party should be kept informed of progress on a regular basis
- development and operation of a maintenance manual including a series of agreed response times for different fault conditions as well as indicative restoration times and procedures
- priority of service restoration over the clearance of faults not affecting service
- provision of notice of any planned maintenance which may affect the other party's system.

### Summary of the detailed national measures related to the maintenance of network integrity

The first column under "implementation" indicates in how many countries the detailed measure was found. In the following column it is stated by which legal instrument the measure is enforced. This can be general telecommunications legislation (Gen), individual licence (indiv lic), other non-telecom specific legislation (other) or interconnection agreement (inter agr).

<i>description</i>	Detailed measures	Implementation				
		nr/12	gen	indiv lic	other	int-agre
<i>limitation to the number of licences</i>	<i>Not relevant</i>					
<i>operating conditions</i>	<ul style="list-style-type: none"> <li>Rules on overload of traffic (televoting, call repeaters, internet)</li> <li>Rules on corruption of charging</li> <li>Implementation of protective measures at the entry points to the networks and into other parts of the network as appropriate</li> </ul>	1 na na	X			
<i>interconnection</i>	<ul style="list-style-type: none"> <li>Reason for operator to impose specific conditions</li> <li>Implementation of standards for the signalling specifications for the interfaces</li> <li>implementation of technical specifications for a separate gateway to be used as a firewall</li> <li>effective interconnection testing</li> <li>fault reporting</li> <li>Existence of back-up procedures in case of sub-system failure</li> </ul>	1 na na na na				X

na means that this information is not available from the country analysis in annex 2.

#### Conclusion

**In the past, no major network breakdowns have occurred in Europe. In all countries national legislation therefore holds little more than a general reference to the protection of network integrity or to ONP-standards. In most of the countries no detailed measures were found. However, in the new multi-network environment, the protection of the network integrity becomes a crucial element for interconnection.**

**Notwithstanding this, it can be expected that in a first phase this will not influence the licensing conditions imposed by general or individual authorisation. Industry seems to believe in self-regulation and elaborated guidelines on interconnection testing and fault reporting in the framework interconnection agreement proposed by the EIF. Only if it appears that significant difficulties arise for new entrants, NRA's should envisage regulation on these points.**

### 4.3.3 Interoperability

- **Description**

*The interoperability requirement refers to the ability of two terminals to communicate with each other through one or more fixed public telephone networks, leased line services and public mobile telephone networks. In that context, interoperability considerations may include requirements both concerning the terminal and the network.*

- **Measures**

Ensuring interoperability is only an obligation in justified cases. As the Interconnection Directive imposes interoperability of fixed public telephone networks, leased line services and public mobile telephone networks, these services and networks have been considered the justified cases.

Interoperability appears to be mainly a matter of type approval of terminal equipment, standardisation, certification and technical regulations. The principles of the New Approach on technical harmonisation and the Global Approach on testing and certification apply here, in particular regarding the

- new status of the standards as voluntary specifications
- transposition of standards in the original language by the cover sheet method
- establishment of independent standardisation bodies
- harmonisation of technical regulations.

In general it can be said that the licensing of service providers and operators until now does not include measures related to the implementation of Essential Requirements as applied in the context of approval of terminal equipment. Those technical prescriptions and standards are imposed on manufacturers and entities putting terminal equipment on the market.

It is important that standardisation work is guided by the market. Standardisation can thus be seen more as a commercial activity than a licensing activity. The scope for standardisation, the simplification of methodology and acceleration of procedures and the impact (voluntary or obligatory) are ongoing discussions, which need to be followed, as their outcome will have an impact on the regulation.

A specific case is roaming. In most countries, it is not regulated at all, except for international roaming through the work of the GSM MoU. But Denmark and UK encourage national roaming. The underlying reason is however more to incite competition between different mobile operators than to realise interoperability. Therefore, this aspect will not be examined further in this study but will be part of the ETO study on mobile communications.

### Summary of the detailed national measures related to interoperability

The first column under "implementation" indicates in how many countries the detailed measure was found. In the following column it is stated by which legal instrument the measure is enforced. This can be general telecommunications legislation (Gen), individual licence (indiv lic), other non-telecom specific legislation (other) or interconnection agreement (inter agr).

<i>description</i>	The interoperability requirement refers to the ability of two terminals to communicate with each other through one or more fixed public telephone networks, leased line services and public mobile telephone networks. In that context, interoperability considerations may include requirements concerns both the terminal and the network.					
	<b>Detailed measures</b>		<b>Implementation</b>			
		nr/ 12	gen	ind lic	other	int agre
<i>limitation to the number of licences</i>	<i>not relevant</i>					
<i>operating conditions</i>	<ul style="list-style-type: none"> <li>• Obligatory or voluntary interconnection standards</li> <li>• Obligation to interconnect</li> <li>• Obligation to roam in certain cases</li> </ul>	na all 2				
<i>intercon- nection</i>	<ul style="list-style-type: none"> <li>• Standardisation</li> <li>• Reason to impose specific conditions</li> </ul>	all 1	X X			X X

#### Conclusion

**Interoperability is mainly guaranteed by the implementation of standards. For the services for which interoperability on a pan-European basis is a goal put forward (fixed public telephone services, leased line services and public mobile telephone services), official standardisation laid down in ETSI recommendations, ITU-T recommendations and national standards seems appropriate. In that sense, it is important that standardisation bodies keep up with technological change.**

#### 4.3.4 Data-protection

- **Description**

*Data-protection covers the need to protect both personal data and information about the network itself.*

*This includes protection of personal data, confidentiality of information transmitted and stored and protection of privacy.*

*Protection of personal data covers the protection of data stored about individual users of the network, such as call data or call location.*

*Protection of user privacy is mainly related to provisions against the receipt of unwanted calls.*

*Confidentiality of information being transmitted across the network relates to the content of the calls while confidentiality of information stored relates to the data about the network and related systems*

- **Detailed measures**

As set out in section 2.2.4, data-protection is already regulated in a very detailed way in European legislation. National provisions result mainly from the transposition of European directives on data-protection. Furthermore, those provisions are often not found in the licensing framework but in data-protection legislation that applies across all sectors.

Consultation with the industry showed that newcomers face problems when operators holding the access network refuse to provide identification services, using data-protection as an argument. In the following section this specific aspect will be examined in detail.

- **Data-protection and line identification**

Line identification is used for different purposes such as:

- identifying the call origin for interconnection billing and direct billing by long-distance carriers
- malicious call identification
- routeing and call delivery based on the geographic location of the calling customer
- offering Calling Line Identification Presentation (CLIP) to users.

It can be expected that the importance of the issue will increase as CLI creates the possibility for innovative applications and becomes indispensable in the context of interconnection and carrier selection.

An important aspect to take into account when offering CLI is data-protection. A questionnaire was sent out to the ECTRA PTL in order to gather more details about the regulation of data-protection applicable when line identification is offered. The underlying reason was the fact that consultation with the industry had disclosed that operators use data-protection as an argument to refuse CLI to interconnecting parties,

Before analysing the different national regulations, several forms of CLI need to be defined. Furthermore, the dispositions found in the data-protection directive will be summarized. Finally, specific provisions for CLI in the context of interconnection need to be looked into.

#### A. Various forms of identification services

Depending on the direction from which the data are transferred, distinction is made between *calling line* and *connected line* identification services. “*Calling line*” indicates that the information is transferred from the calling party to the called party. The opposite case, where the information is transferred from the called party to the calling party, is indicated by “*connected line*”.

In each direction there is the possibility to *present* the identification or to *restrict* the presentation of the identification.

The main forms of identification services are:

- Calling line identification presentation (CLIP)  
where the display of the identification of the calling party gives the called party the possibility to recognise the origin of the call.
- Calling line identity restriction (CLIR)  
enables the calling party to prevent the presentation of identification to the called party
- Connected line identification presentation (COLP)  
enables the calling party to receive the identification of the called party.
- Connected line identification restriction (COLR)  
enables the called party to prevent the presentation of its identification to the calling party.

### **B. Provisions concerning identification services in EU legislation**

In article 15 (1) of the common position with a view of adopting the new ONP Voice Telephony Directive<sup>47</sup>, calling line identification presentation (CLIP) is one of the additional facilities which organisations with significant market power providing voice have to provide if technically feasible and economical viable.

Article 8 of the common position with a view of adopting the specific data-protection Directive<sup>48</sup> imposes that wherever CLIP and COLP are offered, CLIR and COLR should also be made available as well to the subscriber via a simple means and free of charge. In the case of CLI, the called subscriber must have the possibility to reject incoming calls where the CLIP has been eliminated by the calling party (CLIR).

### **C. Provisions concerning line identification in the context of interconnection**

The provisions mentioned above relate to the use of line identification to offer facilities to users. The EU legislation does not foresee any provisions concerning the use of line identification in the context of interconnection.

The Framework Interconnection Agreement Guidelines<sup>49</sup> however recommends to include a section in interconnection agreements defining conditions under which an operator should convey CLI to another operator requesting for this. This might include :

- The purpose for which the CLI may be used by the receiving operator, e.g. billing, call routing, display and validation
- Possible restrictions on the use of CLI, including e.g. number presentation
- Free use of CLI for signalling and billing purposes.

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<sup>47</sup> Common position adopted by the Council on 9 June 1997 with a view of adopting Council Directive 97/ /EC of the European Parliament and of the Council on the application of Open Network Provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment.

<sup>48</sup> Common position by the Council in view of adopting the Directive of the European Parliament and of the Council concerning the processing of personal data and protection of privacy in the telecommunications sector, in particular in the Integrated Services Digital Network (ISDN) and in the digital mobile networks.

<sup>49</sup> Document produced by the European Interconnect Forum

#### **D. Provisions in different national legislations**

The national provisions concerning the following aspects of CLI were examined:

1. obligations comparable to the provisions in article 8 of the European data-protection directive
2. what sort of services and networks are subject to provisions on line identification
3. regulation concerning authenticity of the calling number
4. specific provisions for CLI in case of calls to emergency services
5. specific provisions for the use of CLI for malicious call tracing
6. differentiation of responsibilities for the operators of the originating network, transit network and receiving network
7. provisions on line identification in the context of interconnection and specifically the possibility for operators (with significant market power) to refuse line identification to operators requesting interconnection on the basis of data-protection.

The countries included are: Belgium, Denmark, France, Luxembourg, The Netherlands, Switzerland; Sweden and UK. Data from each country is presented in annex 5, wherever possible numbered according to the 1 to 7 aspects of CLI listed above.

#### **E. Conclusion**

##### **CLIP**

The confidentiality aspect of CLIP is generally regulated in a detailed way, in conformity to the provisions of the data-protection directives of the European Union.

##### **Identification services as part of interconnection services**

Contrary to that, identification services as part of interconnection services are left to commercial agreements between interconnecting parties. However in almost all countries, identification services cannot be refused in the context of interconnection because they are part of the reference interconnection offer or part of a code of practice with which every interconnecting party has to abide.

Only in Denmark was the theoretical possibility found of refusing identification services on the basis of data-protection. Of course, in practice it is up to the NRA to decide if the refusal of interconnection is proportionate with the goal of data-protection.

As newcomers seem to experience problems with identification services in an interconnection context and the legal framework is not very specific or clear (except for the UK), this aspect merits, perhaps, some monitoring and general guidelines. The ECTRA TRIS working group and the European Interconnection Forum are studying the subject.

### 4.3.5 Efficient use of frequencies

- **Description**

*Efficient use of frequencies implies that this resource is used in the most efficient and least wasteful manner so that as many users as possible can make use of the frequency spectrum without mutually interfering with each other*

- **Detailed measures**

Of all Essential Requirements, efficient use of frequencies is probably the one which in practice is used most to limit the free provision of telecommunications services and networks.

Efficient use of frequencies is typically the field where licensing and frequency management join each other. Frequency management can be situated on three levels:

- On the international level (e.g. ITU decisions and ERC recommendations), frequency destination plans are made which reserve certain frequencies for a certain type of use (e.g. landmobile) or certain groups of users (e.g. broadcast, defence...).
- The national frequency plan takes into account the international allotment when frequencies are attributed to national categories of users (e.g. emergency services, commercial usage, broadcast...)
- Finally, frequencies can be assigned to entities for actual use.

For the study, the third level is of importance because it influences the **licensing procedure** and entails rights and **obligations** for the licensee. The first two levels mainly involve responsibilities for NRAs and are not considered.

The licensing **procedure** is a means to achieve the frequency assignment. It can be done by giving preferential rights to certain users (e.g. emergency services), by assigning in order of demands received (first come first served) or by introducing a competition element. This is typically followed when the scarcity of frequencies and the care for efficient use of frequencies are reason to limit the number of licences. The following selection methods can be distinguished in that case: lottery, auction and comparative bidding.

Examples of the details of these procedures and the influence on the licensing conditions are discussed in more detail in the ETO study on mobile communications.

The **obligations** which are imposed on a licensee relate mainly to

- limitation of the duration of the licence
- obligation to use the frequencies in the most efficient way, according to certain parameters for traffic loading or according to a certain technology
- other obligations, e.g. sharing of frequencies.

Detailed measures related to the limitation of the duration of the licence and obligation to use a certain technology can be found in most countries. Parameters for traffic loading on the other hand seem not to be available in the form of a transparent standard.

#### **Conclusion**

**Efficient use of frequencies influences the licensing procedure and entails rights and obligations for the licensee. The obligations which were found relate mainly to**

- **limitation of the duration of the licence**
- **obligation to use the frequencies in the most efficient way, according to certain parameters for traffic loading or according to a certain technology**

#### 4.3.6 Avoidance of harmful interferences

- **Description**

*This notion is critical to co-ordination of frequency assignments between administrations. It relates to intentional signals, where electromagnetic compatibility relates to signals of an accidental nature that may be emitted by terminals. The exact definition of harmful interference is however a controversial issue in ITU circles.*

Avoidance of harmful interference appears to be mainly a question of frequency management, standards and technical regulation.

The specificity of this essential requirement is that in the licensing Directive it is the only event where NRAs may always take immediate action to remedy the problem.

### 4.3.7 Protection of the environment<sup>50</sup>

- **Description**

*This Essential Requirement relates to the protection of air, water, animals, plants and other natural resources from pollution or its effects.*

- **Detailed measures**

Only a few countries give attention to the protection of the environment in their telecommunications legislation.

The following detailed measures were found as operating conditions:

- Rules on the laying or fixing of cables (2 countries)
- Rules on visual and other constraints on the building of infrastructure (1 country)
- Regulation on poles (1 country)
- Rules to protect trees (1 country)
- Obligation to place cables underground (2 countries)

Operators building their own infrastructure can be confronted with possibly burdensome procedures or conditions which result from legislation on environmental protection. However, during the consultation with the newcomers and the industry, this did not come up as an aspect that was seen as particularly limiting the provision of telecommunications services and networks.

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<sup>50</sup> Based on the description in of 'environmentalist' in Webster's Encyclopedic Unabridged Dictionary of the English Language, ed. 1994, p. 447 as *any person who advocates or works to protect the air, water, animals, plants and other natural resources from pollution or its effects*

- **Summary of the detailed national measures related to the protection of the environment**

The first column under “implementation” indicates in how many countries the detailed measure was found. In the following column it is stated by which legal instrument the measure is enforced. This can be general telecommunications legislation (Gen), individual licence (indiv lic), other non-telecom specific legislation (other) or interconnection agreement (inter agr).

<i>description</i>	These measures relate to the protection of air, water, animals, plants and other natural resources from pollution or its effects.					
	<b>Detailed measures</b>	<b>Implementation</b>				
		nr/12	gen.	ind lic	other	int- con agr
<i>limitation to the number of licences</i>	<i>not relevant</i>					
<i>operating conditions</i>	<ul style="list-style-type: none"> <li>• Rules on the laying or fixing of cables</li> <li>• Rules on visual and other constraints on the building of infrastructure</li> <li>• Regulation on poles</li> <li>• Protection of specific areas or buildings</li> <li>• Rules to protect birds and other animals</li> <li>• Rules to protect trees</li> <li>• Situations where placing of cables underground is obligatory</li> </ul>	4 1 1 3 0 2 2	X X X X X X	X X X X	X X	
<i>Interconnection</i>						

### Conclusion

**This Essential Requirement has not led to a large number of obligations until now. Only a few countries give attention to this aspect in their telecommunications legislation.**

### 4.3.8 Town and country planning

- **Description**

Town and country planning can be seen as *the determination of the future physical arrangements and conditions of a community or country, involving a series of constructional and legal conditions*<sup>51</sup>.

- **Detailed measures**

Also in this case, few detailed measures were found as operating conditions. Those found consisted of:

- Sharing of sites and ducts (4 countries)
- Free access to public land for public telecommunications operators (3 countries)
- Obligation to take into account other plans to use the area (3 countries)
- Obligation not to hinder the purpose of traffic ways (2 countries)

Along with what was said for protection of the environment, these conditions are often based on horizontally applicable rules outside of the national Telecommunications Act. But again in this case consultation with the industry did not bring up evidence to conclude that these rules lead to limiting the provision of telecommunications services and networks.

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<sup>51</sup> Based on the description of 'cityplanning' in the Webster's Encyclopedic Unabridged Dictionary of the English Language, ed. 1994, p.270 as *the activity or profession of determining the future physical arrangement and condition of a community, involving an appraisal of the present condition, a forecast of future requirements, a plan for the fulfillment of these requirements, and proposals for a series of constructional, legal, and financial programs and provisions to implement the plan.*

### Summary of the detailed national measures related to town and country planning

The first column under “implementation” indicates in how many countries the detailed measure was found. In the following column it is stated by which legal instrument the measure is enforced. This can be general telecommunications legislation (Gen), individual licence (indiv lic), other non-telecom specific legislation (other) or interconnection agreement (inter agr).

<i>description</i>	The determination of the future physical arrangements and conditions of a community or country, involving a series of constructional and legal conditions.					
	<b>Detailed measures</b>	<b>Implementation</b>				
		nr/12	gen.	ind. lic	other	inter- con agr
<i>limitation to the number</i>	<i>Not relevant</i>					
<i>operating conditions</i>	<ul style="list-style-type: none"> <li>• Sharing of sites and ducts</li> <li>• Free access to public land for public telecom operators</li> <li>• Obligation to take into account other plans to use the area</li> <li>• Obligation not to hinder the purpose of traffic ways</li> </ul>	4 3 3 2	X  X X	   X	X  X X	
<i>intercon- nection</i>	<ul style="list-style-type: none"> <li>• Imposed facility sharing (physical collocation)</li> </ul>	n.a				

#### Conclusion

**Town and country planning has not led to a large number of obligations until now and it is only in a few countries that the telecommunications legislation imposes licensing conditions in this respect.**

#### **4.4 Consequences of non-respect of detailed measures**

The sanctions imposed and the procedures to be followed in case of non-respect of the detailed licensing conditions set out in section 6.3 depend largely upon the legal instrument enforcing the measure.

The procedures and sanctions for conditions imposed by general authorisation and individual licence should respect the articles 5,(3), 9,(4) and 9,(5) of the licensing directive.

In case of non-respect of conditions found in **general authorisations**, the regulatory authority can withdraw the benefit of the general authorisation or impose specific measures, aimed at ensuring compliance within a period of one month. If the breaches are remedied, the NRA annuls or modifies its decision within two months of its initial intervention. If not, the initial decision is confirmed.

In case of non-respect of conditions stipulated in **individual licences**, the national regulator can withdraw, amend or suspend the individual licence or impose specific measures, aimed at ensuring compliance within one month. Immediate action can be undertaken in case of repeated breaches. If the breaches are remedied, the NRA annuls or modifies its decision within two months of its initial intervention. If not, the initial decision is confirmed.

In the event of **harmful interferences**, the NRA may however always take immediate action to remedy the problem.

In all cases, the reasons for the action must be stated and an appropriate procedure for appealing against refusals, withdrawals, amendments or suspensions must be foreseen.

The sanction for conditions which result from **other general legislation**, (for example general data-protection legislation or local building prescriptions) may take a wide variety of forms; extending from breaking down an installation to penalties imposed by criminal law.

Finally, the non-respect of Essential Requirements in the context of interconnection can lead to long and difficult negotiations or to sanctions included in the agreement. In some cases, NRA's can intervene if no agreement can be reached among the parties.

#### **Conclusion:**

**It was found that most of the detailed measures to ensure Essential Requirements figure in general telecommunications law. Conditions related to access to frequencies and avoidance of harmful interferences were typically part of an individual licence. This is also the case for security of the network operations, as this is currently a specific obligation for the incumbent fixed network operator. This might however change in the future.**

**The detailed conditions were found to be not very different from other operating conditions which are not related to Essential Requirements. Consultation with newcomers and the industry gave no evidence of Essential Requirements being used to withdraw a licence, suspend a service or refuse interconnection.**

## 5. Conclusions

As set out in the introduction, the main concern of the study was on network integrity, security of network operations and interoperability, as regulations concerning the other Essential Requirements were found to be often not part of the telecommunications specific regulation.

As a result of the study, ETO has presented:

- 4 a clarification of the concept (5.1) in general
- 5 proposals for descriptions as a tool for obtaining a coherent approach in different countries with regard to the detailed measures used to implement essential requirements (5.2)
- 6 recommendations (5.3) concerning the following specific aspects where industry would benefit from harmonisation,
  - preference emergency schemes
  - responsibilities for ensuring network integrity
  - responsibilities for ensuring interoperability
  - guidelines for the use of CLI as an interconnection service
  - recommendations on how to implement Essential Requirements ( a-priori conditions, operating conditions or industry self-regulation)

### 5.1 Concept

Essential Requirements occupy a special place among the licensing conditions imposed on telecommunications networks and services.

Originating from the rule of reason of the Court of Justice they lead to conditions on telecommunications services and networks, justified by goals superior to the principle of free trade and outside commercial regulations. This means that in a fully competitive market, where fair competition has been achieved, measures to ensure Essential Requirements might still be necessary. This also implies that they are seen as a last resort, to foresee the unforeseeable. Therefore, it was found that licensing conditions seldom make more than a general reference to the concept and detailed conditions setting out how to respond to Essential Requirements were often non-existent.

### 5.2 Descriptions

All national legislations of the 12 countries involved in the study make reference to Essential Requirements in a general way. However, in no national legislation has it been made clear which specific measures have to be respected in order to ensure compliance with the goals set out. From the beginning it was obvious that in order to trace those detailed measures a description of each of the Essential Requirements would be of value.

**ETO proposes the following descriptions as a tool for the purpose of clarification and obtaining a coherent approach in different countries:**

**Security of network operations :**

Measures to safeguard the security of the network during emergency situations are related to protection against external events such as extreme weather, earthquakes, flood, lightning, fire and catastrophic network breakdown which could compromise network operations. This protection has the goal of maintaining at least a minimum guaranteed functioning during those civil emergency situations

**Maintenance of network integrity**

The protection of the physical and functional operation of a network against and its resistance to breakdown or degradation caused by electrical conditions, signalling protocols or traffic loads (which can be induced via interfaces between terminals and networks or between networks).

**Interoperability**

The interoperability requirements refer to the ability of two terminals to communicate with each other through one or several fixed public telephone networks, leased line services and public mobile telephone networks. In that context, interoperability considerations may include requirements both concerning the terminal and the network.

**Data-protection**

Data-protection covers the need to protect both personal data and information about the network itself.

This includes protection of personal data, confidentiality of information transmitted and stored and protection of privacy.

- Protection of personal data covers the protection of *data stored about individual users of the network, such as call data or call location.*
- Protection of user privacy is *mainly related to provisions against the receipt of unwanted calls.*
- Confidentiality of information being transmitted across the network relates to *the content of the calls* while confidentiality of information stored relates to *the data about the network and related systems.*

**Efficient use of frequencies**

Efficient use of frequencies implies that this resource is used in the most efficient and least wasteful manner so that as many users as possible can make use of the frequency spectrum without mutually interfering with each other.

**Avoidance of harmful interference**

This notion is critical to co-ordination of frequency assignments between administrations. It relates to intentional signals, where electromagnetic compatibility relates to signals of an accidental nature that may be emitted by terminals.

**Protection of the environment**

This essential requirement is related to the protection of air, water, animals, plants and other natural resources from pollution or its effects.

**Town and Country planning**

The determining of the future physical arrangements and conditions of a community or country, involving a series of constructional and legal conditions.

**5.3 Detailed measures**

The entities subject to detailed measures vary greatly, both with regard to different Essential Requirements and in the different countries. The variety of detailed measures, the close link to divergent political priorities and the existence of a certain degree of harmonisation in the European framework made it impossible to work out a harmonised list of licensing conditions.

However, ETO makes the following recommendations concerning some specific aspects where industry would benefit from harmonisation:

All countries consider **Security of network operations** to be of great importance. The responsibility to ensure the availability of telecommunications services in emergency situations has until now mainly been an obligation for the monopolist. In a multi-network environment there is an issue to reconsider the matter in terms of obligations (and the related costs) as well as the entities which will have responsibilities. In the future, ITU will probably start work on the harmonisation of provisions related to preference regulation as well as organisational and technical precautionary measures already implemented in NATO-countries.

**ETO recommends that the future work of the ITU be closely followed by the EC. In addition to that, further study of a proportionate way of dividing the burden in a multi-operator environment seems necessary.**

**Concerning Network integrity, ECTRA endorsed in December 1997, in accordance with the results of this study and based on a proposal by the TRIS working group, a Draft Recommendation on a set of guidelines on responsibilities for ensuring network integrity (see annex 6).**

**Concerning interoperability, ETO recommends that**

- **the responsibility to ensure interoperability remains with the party responsible for putting terminal equipment on the market**
- **it should be referred to in the licensing of service providers or operators only as an operating condition for the services stipulated in the interconnection directive : fixed public telephone networks, leased line services and public mobile telephone networks.**

**Concerning data-protection, ETO recommends that industry should be encouraged to develop voluntary guidelines on the use of CLI as an interconnection service in accordance with the directives on Voice Telephony and Data-protection.**

It can be concluded in a general way that the nature of the detailed conditions was found to be similar to the nature of operating conditions which are not related to Essential Requirements. The conditions are mainly implemented through the general telecommunications legislation which also results in sanctions that are not specific to Essential Requirements. Only efficient use of frequencies and avoidance of harmful interferences give rise to conditions prior to market entry or to restriction of the number of operators in the market.

**ETO recommends that Essential Requirements should be implemented through operating conditions. It is recommended that exception should only be made in case the service or network uses frequencies. Only in such cases efficient use of frequencies and avoidance of harmful interferences can be valid reasons to impose conditions prior to market access or to limit the number of licences.**

**ETO further recommends that in the context of interconnection, detailed regulation concerning Essential Requirements should be avoided as far as possible, if the sector attains self-regulation (e.g. through collaboration in the European Interconnection Forum).**

Finally, consultation with newcomers and the industry through a questionnaire and during a workshop, gave no evidence of Essential Requirements being used to withdraw a licence, suspend a service or refuse interconnection. The application of Essential Requirements seems therefore not to have led to unproportional burdens or restrictions on the provision of telecommunications services or networks. In a multi-network environment, after the full liberalisation of networks and services, this, however, could change.

**ETO therefore proposes to stay in contact with new entrants after the full liberalisation of telecommunications services and networks, in order to verify whether or not the application of Essential Requirements (in particular network integrity, security of network operations, interoperability and efficient use of frequencies) continues to be experienced as neither burdensome nor restrictive of competition.**

# Annexes

## **Annex 1 Work Requirement No 48372**

### **1. Subject: Essential Requirements.**

### 2. Purpose

To identify and analyse the Essential Requirements imposed by telecommunications Union directives, and to propose a detailed set of harmonised requirements to be attached to authorisations of service providers and infrastructures operators in CEPT/ECTRA countries, after the liberalisation of voice telephony services and infrastructure in the European Union.

### 3. Justification

Council resolution of 22 July 1993 on the review of the situation in the telecommunications sectors and the need for further development in that market, establishing the timetable of the liberalisation of telecommunications services, including additional periods of up to five years to 5 Member States.

Council resolution of 18 September 1995 on the implementation of the future regulatory framework for telecommunications, inviting the Member States to foster the establishment of dynamic competition by defining and publishing at the earliest opportunity, with a view to the future Community regulatory framework, the general authorisation and individual licensing regimes applicable to the whole telecommunication sector.

Council Directive of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision defining the Essential Requirements.

Proposal of 14 November 1995 for a “European Parliament and Council Directive on a common framework for general authorisations and individual licences in the field of telecommunications services”

which concerns the procedures associated with the granting of authorisations and the conditions which may be attached to such authorisations, including those conditions aiming at ensuring compliance with relevant Essential Requirements.

Proposal for a European Parliament and Council Directive on Interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP).

### 4. Work requirement

- (1) to analyse each essential requirement and to describe its implementation in national regulations.
- (2) to describe and analyse the procedures followed by NRAs when it has been established that one of these Essential Requirements has not been fulfilled.
- (3) to propose detailed harmonised Essential Requirements that could be included, in the near future, in the set of licensing conditions for telecommunications services, and to indicate categories of services for which they must be respected.

### 5. Execution

The final report on this work requirement will be made available to the Commission on 1 September 1997

## 6. Deliverables

Two interim reports and one final report shall be delivered.

The first interim report shall be delivered during the course of the work, containing description and analysis of Essential Requirements and national procedures to be considered in the provision or authorisation of telecommunications services and infrastructures (November 1996).

The second interim report shall contain the draft findings and proposals as they will be submitted to CEPT/ECTRA for approval (May 1997).

The final report shall contain the findings and proposals, as approved by CEPT/ECTRA and will include any comments individual CEPT/ECTRA members have on the implementation with regard to their respective national regimes.

All reports shall be made available in draft form one month before a liaison meeting at which the results will be discussed and approval can be given for their release.

The Commission shall receive three copies of the interim reports, while the approved final report shall be made available in 15 bound copies, one unbound copy and one copy on floppy disk in Word for Windows V2.0 format. Graphics shall be made available on separate hard copies.



## ***Annex 2 Country analysis***

### **Implementation of Essential Requirements in national legislations -**

This section is based on information collected from different sources. The consultant SAGATEL made an initial search on the following countries: Denmark, Finland, France, Germany, Norway, The Netherlands, Spain, Sweden and UK. In collaboration with the members of the ECTRA Project-Team on Licensing this was corrected and the information was added for Belgium, Portugal and Ireland. Where blanks appear in the following table, the information is not available for the country.

The table is an attempt to include all information gathered in a form that is as complete, user-friendly and concise as possible. The table is composed of the following three parts :

- Essential Requirements as conditions to limit the number of licences (only efficient use of frequencies and avoidance of harmful interferences)
- Essential Requirements as operating conditions (all Essential Requirements)
- Essential Requirements as conditions for access to networks -referring to legislation on interconnection (all Essential Requirements except efficient use of frequencies and avoidance of harmful interference)

This collection of information has been used to analyse the detailed measures related to Essential Requirements in section 4 of the report.

## 1 Essential Requirements as conditions to limit the number of licences

	BE *	DK	FIN	FR	GER	IRL	NW	NL	PO	SP	SW	UK
<b>Efficient use of frequencies</b>												
Subject?	all		all	all	all	All		all	all		all	
Refusal of license on this ground?	X				X			X				
Ground for limiting the duration of the licenses?	X	X			X			X				
Ground for withdrawal of the license?	X			X	X			X				

## 2 Essential Requirements as operating conditons

	BE*	DK	FIN	FR	GER	IRL	NW	NL	PO	SP	SW	UK
<b>Security of network operations</b>												
Subject? Public telecom operators (PTO) Service providers (SP) Buildings and centres of telecom services (B), operators of leased lines (LL)	all		PTO	PTO	All	PTO	PTO	PTO, SP, LL	PTO	B - LL	all	PTO
What in case of emergency? Interruption of the service (I), limitation of service features (L), denial of access to new users (D)	I, L, D				I,L,D	I,L,D	I, L,D		I,L,D			I, L,D
Are emergency situations defined?	no		no	X	X	no	X	X	?	?		X
Are there obligations on the internal organisation of operators for emergency working?	C		X		X			X	X	X		X



	BE*	DK	FIN	FR	GER	IRL	NW	NL	PO	SP	SW	UK
- itemised call billing, - calling line identification, - call forwarding, - unsolicited messages, - consumer profiles,												
Is there an obligation on an operator of voice telephony to provide information or access to the customer database for enquiry services?	X		X	X	X	X		VT/ PTO			X	X
Do some operators have to provide directory enquiry services? providers of Voice Telephony (VT)	US							VT/ PTO			VT	
rules regarding storage of identification information	C		X	X	X			X				
Maximum to storage period	C		X	X	X			X				
<i>B) Protection of user privacy</i>												
non disclosure clause for employees (E) or any person (A)	E/A		E	E	E, A		E		E		A	E
What are the sanctions on abuse of information? criminal law (CL)	CL				CL							
Obligation to inform users of the level of security?	no			X	no			X				
<i>C) Confidentiality of information being transmitted accross the network (content of the calls)</i>												
Who is subject? Telecommunications operators (TO), service provider (SP), Regulatory Authority (RA), any person (A), operators of voice telephony (VT)	all			PTO VT	SP, TO, RA, VT		TO,SP RA, E fitters	Public network s/service s		all		PTO
What is the sanction for operators or service providers on illegal interception? criminal law (CL)	CL				CL					major offence		offenc e
<b>Efficient use of frequencies</b>												
Revocation (R) or suspension (S) of the license on this ground?	R, S	R			R			R	X	major offence		

<b>Avoidance of harmful interference</b>												
Who is subject?	all		PTO	PTO	all	all						
Disconnect in case of non-respect?	X		X		yes							
Is frequency co-ordination necessary before delivering a service license?	no				yes							
Is a service or network license necessary before frequency coordination?	yes					yes	yes					
Is intervention of the NRA necessary to disconnect a terminal, service provider of interconnected network?	no		yes		some times	no	no					
<b>Protection of the environment</b>												
Who is subject?			PTO	PTO	PTO			PTO				
What in case of non-respect?												
Is there legislation on the laying or fixing of cables?			X		X			X				X
How are visual and other constraints of the building of infrastructure regulated? Regulation on poles?								not TA				X
Are specific areas or buildings protected?								not TA	X			X
Rules to protect birds and other animals								not TA				
Rules to protect trees				X	X			not TA				
Situations where placing of cables is obligatory underground?										X		X
<b>Town and Country planning</b>												
Who is subject?			PTO	PTO				PTO				
What in case of non-respect?									no			
Is there a limitation to the number of operators having rights of way?				no				no		no		
What about the sharing of sites and ducts? Encouraged (E)			O		E					E	E	O





	BE*	DK	FL	FR	GER	IRL	NW	NL	PO	SP	SW	UK
<b><i>C) Confidentiality of information being transmitted across the network (content of the calls)</i></b>												
Sanction for operators or service providers on illegal interception?					X							
Reason to reject interconnection request?												
<b><i>D) Confidentiality of information stored in the network</i></b>												
Are there provisions on the confidentiality of information concerning networks interconnecting?												
Is it regulated to what extent access to such data can be asked in the context of interconnection?												
Is it regulated to what extent access to such data can be denied in the context of interconnection?												
Reason to reject interconnection request?		X										
<b>Protection of the environment</b>												
Who is subject?												
What in case of non-respect?												
<b>Town and Country planning</b>												
Who is subject?												
What in case of non-respect?												

- Belgium is in the process of elaborating new telecommunications legislation. The draft proposal has been taken into consideration for filling in the table. Therefore, where “C” appears it means “under consideration”.

### **Annex 3 Questionnaire sent out to newcomers**

Your reference

Copenhagen 23 May 1997

Our reference 97-89-AV

Subject: Experience with the application of conditions linked to Essential Requirements.

Dear Sir/Madam

The European Telecommunications Office is conducting a study on behalf of ECTRA for the European Commission concerning the implementation of Essential Requirements in the field of telecommunications services and networks. The purpose is to analyse Essential Requirements, to describe their implementation in national regulations and to describe and analyse the procedures followed by NRAs when it has been established that one of these conditions has not been fulfilled.

The particular Essential Requirements included are:

- protection of the security of network operations (*measures to safeguard the security of a network during emergency situations against external events like extreme weather, flood, fire, lightening or catastrophic breakdown of the network*)
- protection of network integrity (*measures taken to safeguard the ability of a network to continue functioning when placed under jeopardy by external events which may include electrical voltages, signalling protocols, traffic loads induced by interferences...*)
- interoperability of networks and services

Data-protection, efficient use of frequencies, avoidance of harmful interferences, protection of the environment and town and country planning are however also treated.

The aim is to make a proposal for

- clear descriptions of each essential requirement,
- a list of detailed measures imposed in different countries as licensing conditions,
- distinction between different kinds of services or operators.

As a first step to achieve this, information has been collected about the provisions in national legislations which reflect the detailed legal implementation of Essential Requirements in different countries.

This has been done in collaboration with national experts of regulatory authorities. From the analysis of this information, it became evident that Essential Requirements, as a concept, are vague and in consequence result in a very diverse set of measures and clauses, dispersed over general legislation, authorisations (general and individual) and interconnection agreements. But practical examples of cases where those measures have actually been applied were lacking.

As a second step, it seems therefore important to gather information from industry and non-incumbent operators about the experience they have with barriers to free trade, based on the detailed national conditions linked to Essential Requirements. Indeed, the practical consequences of these conditions and in particular the procedures and measures imposed in case of non-respect of Essential Requirements, are of primary importance. This information will allow ETO to clearly evaluate the effect of measures imposed by reason of Essential Requirements and to make proposals which give Essential Requirements their appropriate place in the licensing framework.

With this letter, I would like to invite you to fill in the questionnaire attached even if your company has never been confronted with measures related to Essential Requirements.

ETO would appreciate receiving your answers by fax before May 15.

The information provided will be treated in a confidential way by ETO. The way the report will reflect facts will be anonymous and by way of general country-related information.

If you might have questions or prefer to give oral comments concerning the questionnaire or the subject in general, please do not hesitate to contact me. This can be done by telephone or by e-mail on the following address: [ann@eto.dk](mailto:ann@eto.dk).

Finally, I would like to thank you in advance for your co-operation.

Yours sincerely,

Ann Vandembroucke  
Licensing Expert

### **Preliminary comments**

Most questions relate to sanctions imposed in case of non respect of licensing conditions related to Essential Requirements. In the detailed questions, the main concern is with security of network operations, network integrity and interoperability.

The questionnaire is composed of four parts:

E. identification

F. Essential Requirements as conditions to access the market (*referring to the stage where an applicant applies for an authorisation*)

G. Essential Requirements as operating conditions (*referring to the conditions which have to be observed while operating normally*).

H. Essential Requirements as conditions to access networks (*referring to the context of interconnecting to other networks or access to public networks*)

I hereby kindly request you to fill out the parts A, B and C even if conditions related to Essential Requirements were never applied. Part D is more detailed and looks for the way dominant operators or operators with control over network facilities limit the access to their networks for service providers or other operators on the basis of Essential Requirements. In particular the answers to part D are very valuable for the following reasons. First of all, in proposing a list of measures related to Essential Requirements, it must be avoided that they could be misused to limit competition. Secondly, there are no other means to gather this sort of information than through this questionnaire. Thirdly, ETO is always seeking to come up with proposals which are useful and broadly accepted as well by NRA's, operators, industry as interest groups.

It must be noted finally that the term "authorisation" is used in the sense of the licensing directive, and can therefore take the form of for example a class license, general law, registration, notification as well as an individual license.

You are kindly requested to fax the filled in questionnaire back by 30 May to

ETO

Ann Vandenbroucke

Holsteinsgade 63

2100 Copenhagen

Fax nr 00 45 35 43 60 05

If you prefer to use E-mail, an electronic version can be asked for at the following address [ann@eto.dk](mailto:ann@eto.dk).

**PART A : Identification**

Name of the Company :  
Address :  
Person to contact :  
Telephone number :  
Fax number :  
e-mail address :

Please indicate in which quality your company experienced the effect of measures related to Essential Requirements.

- mobile operator (paging, mobile data, GSM, DCS-1800, CT2)
- airtimereseller
- provider of satellite networks and services
- operator of alternative infrastructure (including carriers carrier)
- service provider of value added services (including voice to closed user groups)
- premium rate services (shared revenue services)
- internet access provider
- service provider of bearer data services
- provider of voice telephony
- provider of fixed public telephone network under universal service obligations
- other (please specify)

Country in which conditions linked to Essential Requirements were experienced :  
*(if the experiences described refer to different countries, please differentiate carefully)*

*Information will be treated confidentially by ETO. The experiences mentioned will be taken into account in the report in a general way as part of the section comparing the measures implemented in the different countries.*

**PART B: Essential Requirements as conditions to access the market  
(conditions linked to the process of applying for an authorisation)**

1.1 Was an authorisation or permission to operate a service or network ever refused by an NRA on grounds of Essential Requirements?  
 Yes  No

1.2 If this was the case, please indicate which essential requirement was invoked :  
 security of network operations  network integrity  interoperability  
 data-protection  
 efficient use of frequencies  avoidance of harmful interferences  
 protection of the environment  town and country planning

1.3 If the answer to question 1.1. is “yes”, please indicate the motivation the NRA gave for the decision.

1.4 Was an authorisation or permission to operate a service or network limited in time for reason of respect of Essential Requirements?  
 Yes, limitation to..... years  No

1.5 If there was a limitation in time, please indicate which essential requirement was invoked :  
 security of network operations  network integrity  interoperability  
 data-protection  
 efficient use of frequencies  avoidance of harmful interferences  
 protection of the environment  town and country planning

1.6 Others

**PART C. Essential Requirements as operating conditions**

**(authorisation conditions to be respected while running the network and/or service)**

2.1 Has an authorisation or permission to operate a service or network ever been revoked, suspended or altered on the ground of efficient use of frequencies?

yes

no

2.1.1 If the answer to question 2.1 is “yes” please detail the case and the measures imposed

2.1.2 If the answer to question 2.1 is “yes”, please describe which authorities were involved and what were the different steps in the procedure (including delays given to you).

2.2 Has an authorisation or permission to operate a service or network ever been revoked, suspended or altered on the ground of creation of harmful interferences?

yes

no

2.2.1 If the answer to question 2.2 is “yes”, please detail the case and the measures imposed .

2.2.2 If the answer to question 2.2 is “yes”, please describe which authorities were involved and what were the different steps in the procedure (including delays imposed).

2.3 Others

**PART D. Essential Requirements as conditions to access networks  
(conditions in the context of interconnection or provision of liberalised services  
over the public telecommunications network)**

3.1 Was access to public telecommunications networks or public telecommunications services ever restricted for reasons based on Essential Requirements? (for example, refusal to access the signaling system)

yes      no

3.2 If access to public telecommunications networks or public telecommunications services was restricted on the basis of Essential Requirements :

3.2.1- please specify which essential requirement was invoked

security of network operations   network integrity   interoperability   data-protection

3.2.2 - please specify the sort of restriction

3.2.3 please specify if access was restricted

- by administrative measures imposed by the NRA
- by the operator without the intervention of the NRA
- by the operator after intervention by the NRA
- by the operator with confirmation afterwards by the NRA.

3.2.4 -please specify the motivation used by the operator and/or NRA

3.3 Were conditions linked to the respect of Essential Requirements used by an operator to

- refuse to start negotiating an interconnection agreement   yes      no
  - refuse to contract an interconnection agreement      yes      no
  - revise an existing interconnection agreement      yes      no
  - terminate an interconnection agreement      yes      no
  - create other difficulties to obtain interconnection      yes      no
- (please specify)

3.3.1 Please indicate the motivation given by the operator in the cases where the answer to question 3.3 was “yes”.

3.3.2 In the case the answer to question 3.3 was “yes”, was the operator having control over the network facilities and invoking Essential Requirements a dominant operator? yes no (please specify).....

3.4 Most national regulations foresee that in the event of catastrophic network breakdown or in exceptional cases of force majeure (such as extreme weather, earthquakes, flood, lightning or fire), measures can be applied in order to maintain a certain service level for public telecommunications networks and/or public telecommunications services. This safeguarding could lead the operator of the public network or service to interrupt for the duration of the emergency the service delivered to interconnected parties, limit service features or deny access to new users....

3.4.1 Do interconnection agreements contain clauses related to this sort of situations? (f.ex. definition of emergency situation, measures which can be imposed, ways of informing about the limitations, liabilities...)

3.4.2 Has a situation as described in 3.4.1 ever occurred? yes no

3.4.3 If such an occasion did occur, please describe on a separate page

- \* the case
- \* the measures imposed and the consequences for your service and/or network
- \* the way you were informed about the measures
- \* the settlement of liabilities afterwards
- \* what was imposed by the operator and what by the NRA.

3.5 What procedure do you need to follow to ensure the integrity of the public telecommunications networks with which you are interconnected? (f.ex. confirming to a voluntary standard, case-by-case interconnection testing controlled by the operator of the public network...)

3.6 What experience do you have with procedures for fault reporting? (f.ex single customer contact point as described in ITU-recommendation E.440 )

3.7 Have operators with control over network facilities ever refused to communicate information on the basis of

3.7.1 protection of personal data yes no

3.7.2 confidentiality of information transmitted across the network

yes no

3.7.3 confidentiality of information stored in the network yes no

3.7.4 protection of privacy yes no

3.8 If the answer to questions 3.7 is “yes” at some point, please specify each case and the motivation used by the operator.

3.9 If the answer to question 3.7 is “yes” at some point, please specify if the denial occurred

by the operator without the intervention of the NRA

by the operator after intervention by the NRA

by the operator with confirmation afterwards by the NRA.

in a different way. Please specify.

3.10 Others

## COMPANIES CONSULTED

Belgium	Telenet Operaties Global One Hermes Europe Railtel NV NV Worldcom Unisource
Denmark	Connect Denmark CyberCity Interoute Danmark NetCom Systems Danmark A/S Global One Communications A/S Nordiska Tele 8 AB Dansk MobilTelefon I/S Tele Danmark Erhverv A/S Telepartner A/S Telia A/S
Finland	Nordnet Oy Global One Oy Uni-Telecommunications Oy RSL COM Finland Oy
France	CEGETEL LYONNAISE CABLE Bouygues Télécom COLT BELGACOM TELEPORT MFS CABLE AND WIRELESS OMNICOM Téléport Marseille Provence TELCITE-RATP
Germany	Mannesmann arcor AC & Co O. TEL. O Communications GmbH VIAG INTERKOM GmbH & Co THYSSEN TELECOM AG COLT TELECOM GmbH ISIS Multimedia Net GmbH MFS Communications GmbH NetCologne GmbH World Com Telecommunications Services GmbH
Ireland	ISAT Digiphone ISAT Telecom
Italy	Autostrade S.P.A Ferrovie Dello Stato SPA Infostrada Albacom Cable and wireless S.P.A France Telecom Omnitel – Pronto Italia SPA Mediaset/Fininvest

Norway	Datamatrix AS EITele AS Enitel AS Nanco Kabel-TV AS Oslo Energi Tele AS Tele 3 Norge As
OSS	World Telecom Intergram International IMS Telecom Interaktieve Media Services European Telecom SITA
Sweden	TELE2 AB Telia AB Telenordia AB Nordiska Tele8 AB Global One Services AB MFS Communications Telecom Finland AB
The Netherlands	Netelcom Libertel Enertel Telfort Vecai VAN Leveranciers Esprit Telecom
UK	COLT



## ***Annex 4 Data-protection and identification services***

- **Belgium**

The subject has been addressed in a working group of the Consultative Committee for Telecommunications as part of the discussion on the general terms and conditions applicable to the voice telephony service. No more details were provided.

- **Denmark**

1. Distinction is made between

- telecommunications networks and services in general, including mobile communications and universal service
- mobile communications and services
- universal service provision

DCS-1800 licensees can have an obligation to offer CLIP, CLIR, COLP or COLR, a number of these services or none of them. In the GSM licence it is not specifically mentioned though reference is made to the GSM specification. Finally, specific rules are contained in the terms of subscription for GSM and NMT of Tele Danmark Mobil. CLIP is offered and the customer can choose to permanently block CLIP when subscribing. This blocking is automatically established in the case of a secret number.

Until 31 December 1997 Tele Danmark holds the universal service obligation. CLIP is offered. Using a code the customer can block CLIP for each individual call. The customer can ask for permanent blocking of CLIP. This blocking is automatically established in the case of a secret number. Using a code, the customer can unblock a permanent blocking of CLIP for each individual call.

2. The distinction between categories of organisations is described previously under 1.
3. No information available on authenticity of the calling number.
4. Section 13 of the Executive Order No 712 obliges all providers of telecommunications networks and services to make it impossible to prevent calling line identification in connection with calls to emergency services (112 and 000).
5. No specific provisions exist concerning the use of CLI for malicious call identification.
6. No specific responsibilities apart from those mentioned in 1 are found
7. On the basis of Section 9 of Executive Order nr 657 of 18 August operators can reject a demand for interconnection on the basis of Essential Requirements.

- **France**

In France, CLIP and CLIR are part of the reference interconnection offer of France Telecom. Concerning confidentiality, terms and conditions elaborated under the articles L33-1 and L34-1 contain a standard clause.

- **Luxembourg**

The Luxembourg legislator is examining new regulation that addresses CLI in the context of the licensing of fixed telephony operators. This regulation is not yet enacted and therefore no reliable and detailed information can be provided at this moment.

- **The Netherlands**

1. Article 11.9 of the draft new Telecommunications Act includes obligations comparable to those of article 8 of the European data-protection directive. So, where CLIP and COLP are offered also CLIR and COLR should be made available to the subscriber via a simple means and free of charge. In the case of CLI, the called subscriber must have the possibility to reject incoming calls where the CLIP has been eliminated by the calling party (CLIR).
2. The following organisations are subject to obligations concerning identification facilities:
  - the fixed public telephone service
  - digital mobile public telephone services
  - digital integrated telecommunications services
  - other telecommunications services to be designated by a regulation from the Minister
3. No rules exist concerning the authenticity of the calling number
4. Article 11.10 of the draft new Telecommunications Act foresees that if telecommunication with an alarm number is completed, any provider of number identification has to respect the following rules :
  - the number of the calling network termination point has to be provided even if use is made of a blocking possibility
  - identification has to include name, address, postcode and residence of the subscriber or the location of the public telephone facility on public land which is connected under the number in question
  - the numbers and data shall only be given to certain services designated by the Minister of Interior and charged with lending assistance
  - fixed periods for keeping numbers in the personal data register have to be respected :
    - one month if the numbers and data relate to cases in which there is obviously a request for assistance in an emergency situation
    - six months if the numbers and data relate to cases in which there is obvious misuse of an alarm number
    - 24 hours a day in all other cases
5. CLI is used in some cases for malicious call tracing. In case of misuse of an alarm number, the number and data from the personal data register are given to the provider of the numbers and data in question and to those who are involved with the investigation of penal offences
6. The responsibilities for the operator of the originating network, the transit network and the receiving network will not be specified because not all consequences can be foreseen.
7. The provision of CLI in the context of interconnection and the possibility to refuse line identification to a party asking for interconnection on the basis of data-protection, is an issue which is still under consideration.

- **Switzerland**

1. The new Telecommunications Act includes the obligation that where CLIP and COLP are offered, CLIR and COLR should also be made available to the subscriber via a simple means and free of charge. In the case of CLI, the called subscriber must have the possibility to reject incoming calls where the CLIP has been eliminated by the calling party (CLIR).
- 2-3 No provisions exist concerning the organisations subject to the provisions on line identification services and the authenticity of numbers.
4. Under the universal service licence, identification of location in the case of emergency calls must be offered (if it is possible within the scope of the technique used), even if CLIR has been set.

5. The offering of malicious call identification (MCID) is part of the reference interconnection offer of operators with SMP.
- 6-7 The transmission of several line identification services (CLIP, COLP, CLIR, CLOL and MCID) is included in the list of interconnection services which the operator with significant market power is obliged to offer, conform article 33 of the draft “Ordonnance sur les services de télécommunication”. Data-protection is not an argument for the operator to refuse line identification in the context of interconnection.

- **Sweden**

The Swedish regulation does not include any obligation concerning CLI.

A licence holder, regardless of market power, cannot refuse CLI to an interconnecting party as this is seen as part of the interconnection if the number is used to provide a CLIP service. However, the operator providing the CLI shall be compensated and the price negotiated between the parties.

- **UK**

In UK a Code of Practice for Network Operators in relation to Calling Line Identification Display Services and Other Related Services has been drawn up by industry and published by OFTEL. Compliance with it is a contractual obligation of relevant interconnection agreements with BT.

1. There is no current licensing obligation although under the Amending Voice Telephony Directive BT and Kingston will be required to offer such services. However, like almost all other fixed line and digital mobile operators, they already do. CLIP is available as a commercial service, subject to an additional payment on top of the basic line rental fee. Customers may prevent the presentation of CLI by not subscribing to the service or by requesting their network operator to bar access to the call return service. CLIP may only be offered where CLIR is operational although this is not a licensing obligation.
2. There is no obligation.
3. Authenticity is a general obligation. Where the originating network is not able to screen the authenticity of CLI, an explicit agreement between the network and the customer has to exist.
4. CLIP is about the transmission of a CLI beyond the confines of a public network boundary to terminating equipment on the other side of the NTP. Emergency calls go to an operator within the public network who has access to the CLI linked with a database indicating the name and address of the subscriber for that line.
5. This is treated as internal to the network.
6. This is dealt with under the Code of Practice. The use of CLI for billing information is internal to public networks and not considered a CLIP related service.
7. This would be dealt with under fair trading rules. Virtually all interconnecting parties who wish to offer CLIP services have to comply with the Code of Practice as a contractual obligation of relevant interconnect agreements with BT.

	Denmark	The Netherlands	Switzerland	Sweden	UK
<b>1. If line identification is offered, what forms need to be available?</b> CLIP CLIR COLP COLR rejection if CLIR	depends on the sort of operator	yes yes yes yes yes	not mentioned yes not mentioned yes yes	Does not include any obligation concerning CLI	no obligation yes no (except ISDN) procedures being elaborated yes, on some networks
<b>2. organisations subject</b>	- telecommunications networks and services in general, including mobile communications and universal service - mobile communications and services - universal service provision	- the fixed public telephone service - digital mobile public telephone services - digital integrated telecommunications services - other telecommunications services to be designated by a regulation from the Minister		not applicable	No obligation but BT and Kingston will be required to provide such services, which they in fact already do
<b>3. regulation concerning the authenticity of the calling number?</b>	not available	no provisions	no provisions	not applicable	Authenticity is a general obligation. Where the originating network is not able to screen the authenticity of CLI, an explicit agreement between the network and the customer has to exist.
<b>4. specific provisions for emergency services?</b>	- provide the number of the calling network termination point even if use is made of a blocking possibility	- provide the number of the calling network termination point even if use is made of a blocking possibility - give name, address, postcode and residence of the subscriber or the location of the public telephone facility on public land which is connected under the number in question	Identification of location in the case of emergency calls must be offered (if it is possible within the scope of the technique used), even if CLIR has been set	no	Emergency calls go to an operator within the public network who has access to the CLI linked with a database indicating the name and address of the subscriber for that line.

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	Denmark	The Netherlands	Switzerland	Sweden	UK
		- the numbers and data shall only be given to certain services designated by the Minister of Interior and charged with lending assistance - fixed periods for keeping numbers in the personal data register			
5. <b>provisions concerning the use of CLI for malicious call identification</b>		In case of misuse of an alarm number, the number and data from the personal data register is given to the provider of the numbers and data in question and to those who are involved with the investigation of penal offences	yes offering of MCID is part of the reference interconnection offer of operators with SMP	no	no
6. <b>Are responsibilities set for the operator of the originating network, the transit network and the receiving network?</b>		No, this will not be regulated because it is too difficult to foresee all consequences	interconnection regulation includes transmission of CLIP, COLP, CLIR; CLOLR and MCID	no	yes in a Code of Practice
7. <b>Can an operator with significant market power refuse CLI to an interconnecting party on the basis of data-protection without the intervention of the NRA?</b>	no		no	No, regardless of market power. It is seen as part of the interconnection (cost oriented prices should be used). If the number is used to provide a CLIP service, the operator providing the CLI shall be compensated and the price negotiated between the parties.	This would be dealt with under fair trading rules. Virtually all interconnecting parties who wish to offer CLIP services have to comply with the Code of Practice as a contractual obligation of relevant interconnect agreements with BT.

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## ***Annex 5 Comments expressed during the workshop***

A Workshop was organised on 21<sup>st</sup> October during which ETO presented the survey and findings to telecommunications operators, service providers, European Associations, industry and administrations. Comments or questions for further clarification were expressed mainly in relation to the following aspects:

1. the descriptions of the different Essential Requirements
2. the experience of new comers
3. the need for harmonisation and a priori regulation
4. the entities which are subject to detailed measures.

As a result of the workshop, written comments have been received from an incumbent operator and from ETNO.

All of the comments have been grouped according to the three categories, mentioned before. Observations not related to those subjects have been assembled under "Other observations".

### **1. Description of Essential Requirements**

- A new entrant found it very useful to try to define and describe essential requirements because they always retain the potential to form a non-tariff market barrier to entry into the market.
- ETNO agrees with the picture of essential requirements given in the ETO studies. However, concern is expressed with the tendency that the scope of Essential Requirements is extending also to comprise environment and social needs, as can be seen in the proposal for a new terminal directive. This creates the risk that when essential requirements are applied in the telecommunications sector they may be used in a way so as to, for example, prevent competition, restrict the development of alternative infrastructure or provide an argument for sharing masts, ducts etc.
- An incumbent operator found the report a useful summary of features that are essential for the smooth operation of telecommunications in Europe.

### **2. The experience of new entrants**

- A new entrant found it not surprising that ETO did not receive more reaction about the experience with essential requirements. An example was given of the "defence lines" that incumbent operators use. The first line is to try to influence the process of legislation. The second defence line is the process of interpretation of those provisions and only as a third resort is argumentation based on essential requirements used. It was proposed to start up a new call for information after the full liberalisation of the telecommunications sector.
- ETNO noted that, although the sample was small, it nevertheless showed clearly that there has not been any abuse of Essential Requirements so far in order to prevent new entrants from entering the market.
- A new entrant asked for confirmation of the understanding that the ETO survey showed that the license obligation was not seen as a barrier to market entry. ETO replied that in principle even the lightest licensing conditions can be considered as restricting the market. The intention of the questionnaire sent out was to find out if industry found the measures proportionate and if they were not thought of as abuse or misuse of Essential Requirements to restrict competition. It was found that newcomers only experienced problems concerning line identification services and access to frequencies.

- The same new entrant wondered if the consulted new entrants felt that there is a logical link between the license obligation and the enforcement.  
ETO replied that this particular aspect was not part of the questionnaire. However, in general Essential Requirements are considered as operating conditions. So they do not lead to a priori conditions. Only if it is proved that licensees do not comply with one of the Essential Requirements, can the licence be withdrawn.
- Further on the preceding question, a consultant asked why there was no mention of the Netherlands where the argument of a limited frequency spectrum has been used to limit the number of wire-based infrastructures. These two aspects are however not necessarily related. One does not necessarily need frequencies to roll out a wire-based infrastructure.  
ETO replied that the experts of the different NRAs all agreed that the only acceptable ground to base limitation of the number of participants to the market is efficient use of frequencies. The argument can also be valid for wireless fixed links. It could be that using other Essential Requirements to limit the number of participants is contrary to EC law. However, it is not up to ETO to sit judgement on that issue<sup>52</sup>.
- A consultant spoke about his experience in drafting licence applications for Belgium France and Italy .The guidelines received from an NRA to prepare a licence application require you as an applicant to state how you intend to comply with the essential requirements. This means that the burden of proof is transferred to the applicant and then the NRA check whether or not it finds the suggestion acceptable. So in France and in Italy that is very clearly the case of interoperability; in Belgium in infrastructure licences it goes beyond to cover all the essential requirements. So there is a projection to the applicant to state how he intends to comply and then a test on the part of the NRA to see if the applicant complies or not.

### 3. The need for harmonisation and a priori regulation

- ETNO expressed the opinion that the experience from the European Interconnection Forum shows that within the industry it is possible to handle questions related to network integrity, questions related to interoperability and probably also to calling line identification.
- An incumbent operator agreed that detailed work on Essential Requirements, and any harmonisation that may usefully be promoted, can be done by the Industry within the European Interconnection Forum. It is believed that the telecommunications Industry is and can be self-managed in most areas.

### 4. Entities which are subject

<sup>52</sup> The Netherlands provided ETO on this issue with the following information:

"On July 15, 1996 the Netherlands enacted the so called interim legislation. This legislation consisted of an amendment to the old Telecommunications Act which anticipated the complete revision of the Act due January 1, 1998, and the Licensing Act which created the granting of licences to install, maintain, and operate for the fixed infrastructure (full liberalisation).

These infrastructure-licences could be issued in two forms: with territorial restriction (a regional licence) or without territorial restrictions (a national license). Because of the fact that network of the incumbent operator is frequency-supported (for instance in the case of network breakdown), it was decided to give the same supporting mechanism to the new national licencees. This decision meant that only two national licences were issued (with interconnection rights and digging rights). No restriction however was laid upon the number of regional licences; 1300 licences were issued by the end of 1996. By introducing this Act on July 15, 1996 the Netherlands anticipated the full liberalisation date of January 1998 and acted fully in line with 1996 EC-law."

- A new entrant wanted to know who has to pay for the measures taken to implement Essential Requirements in interconnection agreements. ETO referred in its reply to the outcome of the analysis of “who should be subject to Essential Requirements”. The general tendency is that conditions are imposed on all public operators.

## 5. Other observations

- A representative of the Norwegian Administration gave clarification concerning the sharing of duct and sites for mobile operators.
- An incumbent operator observed that concerning efficient use of frequencies the following factors have to be taken into account: availability of technology, the cost of equipment and the resultant commercial viability of the telecoms service. Furthermore, it was stated that the telecommunications industry will comply with town and country planning and takes a keen interest in protection of the environment. However, the cost of these aspects and the effect on end-user prices must not be overlooked. Finally it was suggested to expand the section on interoperability to mention the interoperability of services and applications.

## Conclusion of the workshop

- The descriptions were found useful and acceptable for a common understanding of each of the Essential Requirements.
- Concern was expressed concerning the extension of the list of Essential Requirements to environmental and social-oriented obligations.
- None of the participants had experienced restrictions to the free provision of services or networks due to Essential Requirements. This is fully in accordance with the outcome of the consultation ETO had with new entrants in May by means of a questionnaire. However, it was also pointed out that in the context of interconnection problems might arise. Therefore it was proposed that ETO should start a new collection of information after full liberalisation has been achieved.
- The ETO position that a priori regulation should be limited to a minimum and that, in particular in the context of interconnection, industry should be given the opportunity to be self-regulatory (e.g. by collaborating in the European Interconnection Forum) was supported. It might be worthwhile for ECTRA to consider how to follow up the work of this forum as well as how to take into account the guidelines produced by the EIF.
- It was mentioned that in some countries service providers have to demonstrate compliance with Essential Requirements in order to be allowed to start operating. ETO recommends however that all Essential Requirements (except for efficient use of frequencies and avoidance of harmful interferences) be implemented as operating conditions, which do not require verification before entering the market.
- Concern was expressed over the financial consequences of some detailed measure taken to implement Essential Requirements.



## ***Annex 6 ECTRA Recommendation (98)01 on a set of guidelines on responsibilities for ensuring maintenance of network integrity in an interconnected environment.***

Approved in Paris on 12 March 1998 at the XXVth ECTRA Plenary Meeting

### **Background**

- The Interconnect directive (97/33/EC - OJT 26/7/97) defines network integrity as one of the essential requirements, and requires that member states in CEC countries take all necessary steps to ensure that it is fully maintained. It also indicates that network integrity does not constitute a valid reason for refusal to negotiate interconnect and that NRAs must ensure that any interconnect conditions relating to protection of NI must be proportionate, non discriminatory and objective.
- Concerns have been expressed in the past about the potential for interconnect negotiations to become delayed or perhaps even blocked because one of the interconnecting parties believes that the interconnecting facilities of the other party could pose a threat to their network integrity. Strong technical arguments could be introduced to support these concerns and NRAs would be faced with having to determine the validity and soundness of technical arguments relating to integrity. NRAs would be concerned if the growth of the interconnect market was subjected to undue delays or hindrance because of a lack of clarity on what constitutes NI or because of a lack of basic guidelines on how network operators are expected to maintain NI in an interconnected environment
- Operators would in general wish to protect themselves from all potential threats introduced into their networks whether introduced intentionally or unintentionally. Operators can and do to a large extent introduce self protect measures into their networks but they also ensure that the facilities of those parties seeking interconnection are subject to extensive pre operational and integrity test procedures. The consequences of integrity damage resulting from a failure to protect or to initially ascertain the threat potential from other sources might be service interruption or perhaps degraded service quality.
- In most countries the operators with significant market power are responsible for the degree of testing that needs to be implemented during the pre operational phase to ensure operational and integrity aspects are maintained. It is important that the parties negotiating interconnection do not set unreasonably complex or cumbersome test requirements which could result in significant delays to the successful establishment of interconnection.
- There is a need to balance the justifiable concern of incumbent operators in wanting to protect the integrity of their networks from potential threats of new operators and the need not to hinder the interconnect market by imposing unreasonably costly and time consuming solutions in the name of network integrity on new operators and providers.
- It is therefore important to ensure that the issues concerning network integrity are clarified from the perspective of NRAs in the ECTRA countries, and that a set of basic guidelines clarifying the responsibilities of the network operators in respect to maintaining network integrity in an interconnection environment would be helpful to both ECTRA and European industry. The following recommendations constitute the proposed ECTRA guidelines:

## The European Committee of Telecommunication Regulatory Affairs

### considering:

- a) The maintenance of network integrity is the protection of the physical and functional operation of a network against disruption and degradation and its resistance to breakdown caused by electrical conditions, signalling protocols or traffic loads, which can be induced via interfaces between terminals and networks or between different networks.
- b) The ability of interconnected networks to maintain their network integrity includes their ability:
- a) to resist harm that may be caused by other networks
  - b) not themselves to cause harm to other networks.
- c) The maintenance of network integrity is an essential requirement under Directive 97/51/EEC of the European Parliament and of the Council amending Council Directive 90/387/EEC, for the Purpose of Adapting to a Competitive Environment in Telecommunications, on the basis of which conditions may be imposed by NRAs on networks and services.
- d) Interconnected networks may be disconnected if network integrity is affected.
- e) NRAs may have to resolve disputes between operators concerning the maintenance of network integrity.
- f) Risks to network integrity may arise from:
- technical incompatibilities between interconnected exchanges and their software that affect other exchanges in the networks
  - technical incompatibilities between networks and terminal equipment that affect services to other networks or terminal equipment's
  - unusually high traffic demands that result in failures of network control and management
  - deliberate actions by third parties (Note: this is not addressed in this Recommendation)

### Taking into account

- i. The risk of integrity problems due to network interconnections has been reported by the EIF (European Interconnect Forum, recently changed to European Telecommunications Platform – ETP) as being much lower in Europe than in the United States, however there has been some instances of network integrity disturbance occurring in some European networks but as a consequence of network upgrades rather than network interconnection.
- ii. Many new market entrants procure network equipment that conforms to European standards, that has been subjected to interworking testing, and is already in use in other networks;
- iii. Network operators have an incentive to ensure that they do not harm their own or other operators' network integrity
- iv. Each network operator needs to advise other interconnecting operators of any specific technical requirements necessary to avoid affecting its network integrity;
- v. Solutions to technical and operational problems are best achieved through voluntary agreements; detailed a priori technical regulations should only be employed if these other measures prove ineffective;

vii Directive 97/33/EC of the European Parliament and the Council of 30 June 1997 on Interconnection in Telecommunications with regard to ensuring Universal Service and Interoperability through the application of the principles of Open Network Provision (ONP).

viii. ETO report for the Commission of the European Union entitled “Harmonising Essential Requirements” (work order 48372)

**recommends:**

1. that NRAs shall avoid detailed a priori technical and operational regulations concerning network integrity should be avoided as far as possible unless there are special circumstances or factors
2. that NRAs shall encourage network operators to implement interconnection standards which incorporate necessary network integrity protection mechanisms. Where appropriate NRAs shall encourage standardisation bodies to take account of such mechanisms in the development of review of standards
3. that NRAs be guided by the following principles:
  - a) Network operators should make available to other network operators that are seeking interconnection the technical information necessary to enable interconnected networks to interwork correctly and to avoid endangering each other’s network integrity
  - b) Network operators should not refuse to establish new interconnections on the ground of possible risks to network integrity unless significant problems have been demonstrated during pre-operational testing;
  - c) Network operators should not determine unilaterally the level of pre-operational testing. The level of such testing should be determined either with the consent of the other network operator or the consent of the NRA. Where pre-operational testing has been carried out between a combination of exchange and software types for one interconnection point, the degree to which such testing should be repeated at other interconnection points that use the same combination of exchanges and software should be minimised.
  - d) Network operators should not disconnect other networks unless problems that affect network integrity have been experienced in practice.
  - e) Network operators that disconnect or refuse to connect another network on the grounds of network integrity should ensure that all networks that have or are seeking interconnection are informed within two weeks of the detailed technical measures needed to avoid such problems.