ERG Common Statement for VoIP regulatory approaches

Content

1 Introduction

The ERG welcomes the introduction of VoIP[1] services in Europe.

IP networks have the potential to enable a wide range of new voice services, some of which will differ significantly from the traditional telephone services.

VoIP services are expected to increase competition as they have several compelling advantages; mainly lower infrastructure deployment costs as well as more efficient network utilisation.

VoIP services are expected to offer significant benefits to users; mainly benefits related to the creation of new innovative services, price competition and integration of various services.

VoIP has the potential to become an important pan-European and international service.

The ERG is dedicated to enabling the development and widespread use of VoIP services in Europe by promoting competition, supporting the development of the internal market and the promotion of interests of citizens for the benefit of service providers and consumers.

The ERG is therefore committed to creating a regulatory environment in which VoIP services can flourish.

The ERG will adopt a regulatory approach that is consistent with the objectives of the European regulatory framework and which will enable the greatest possible level of innovation and competitive entry in the market, whilst ensuring that European citizens are adequately protected. In particular this should mean that any regulatory obligations on VoIP services are objective, technology neutral, non-discriminatory and transparent.

The ERG believes that if European citizens are to realise the full benefits of these innovations it is essential that European citizens are empowered to make informed choices about services and should be given the freedom to choose services that differ from traditional telephone services.

During the past months, the ERG has undertaken extensive research and analysis into the regulatory challenges presented by the introduction of VoIP services. A key finding of the Group is that within the common European regulatory framework - not withstanding the differences between member states – NRA's may need to apply different measures to achieve the ERG's objective of creating a positive environment for VoIP services. The ERG has therefore adopted a flexible approach to achieving its policy aims, which will allow NRAs to choose solutions that are consistent with the European regulatory framework and take into account the respective national circumstances. The ERG believes that this is a pragmatic approach that is in accordance with the objective of harmonisation whilst acknowledging that a one-size-fits-all solution is not suitable at this point.

VoIP constitutes the first major wave of new IP-based services that has come about since the introduction of these new directives in 2003 and has therefore been identified as a priority by the ERG. During the coming year, the ERG will closely follow the development of VoIP services.

ERG is committed to addressing the fundamental issues that will face regulators as VoIP services are rolled out in ever more innovative ways.

[1] VoIP is used here as the generic term for the conveyance of voice, fax and related services partially or wholly over packet-switched IP-based networks.

To facilitate the introduction and widespread use of VoIP-services, this Common Statement contains a set of agreed principles that should govern the way that regulators apply the existing European regulatory framework.

Market

VoIP has the potential to radically change the existing market[2] structure.

IP technology is seen as a hugely important building block for the expected convergence of voice and data networks. Indeed, one of the major drivers for the adoption of VoIP is the expected cost savings from the implementation of IP networks into existing telecommunications networks.

Because VoIP services, broadband access, access to the IP network and IP transport can be supplied by different providers, barriers to entry, specific to the provision of VoIP services only, are reduced. VoIP providers who may not have the need to invest in significant infrastructure could become serious competitors to vertically integrated incumbents. This could very well lead to more diverse and innovative services in the market.

On the other hand it has been argued that although new innovative providers could push the market, in the long run it would be the established players (including incumbents) with their own networks that continue to dominate the market due to their reputation, reliability, as well as their established customer base and ancillary services such as billing systems, etc. The cost structure of IP networks with high fixed costs and low marginal costs of service provision may reinforce a trend towards flat rate tariffs for users. Such a trend may be advantageous for those providers with established customer relations. This advantage applies specifically to all providers controlling the access infrastructure (irrespective of the technology applied). Based on an existing customer relationship they can bundle broadband access with broadband data connectivity and/or IP-based voice services. In this way they can leverage their market position from the access component to other parts of the value chain.

It is impossible at this stage to predict what will happen in this increasingly volatile market. The regulatory challenge is to ensure that it is the market place that will ultimately determine which services are finally successful.

Policy objectives and regulatory principles

The current regulatory practice regarding telephone services was formulated over a long time when the dominant technology used for telephony was circuit-switched. Regulation to date has therefore been historically focused on this technology. The current directives are, however, based on a fundamental recognition of the fact that the inevitable convergence of the telecommunications, media and information technology sectors means that all transmission networks and services should be covered by a single European regulatory framework (cons. 5 FD).

The application of the directives in regards to VoIP services should entail a justified balance between the policy objectives: promotion of competition, the development of the internal market and the promotion of interests of citizens (FD Art 8). It is important at this point in time to recognize that the VoIP evolution path has just begun.

Focus on the regulatory principles of objectivity, technological neutrality, transparency, non-discrimination and proportionality should be maintained when interpreting and applying the rights and obligations of the European regulatory framework.

[2] The term market is used in a generic way and does not refer to the term relevant market as specified in the EC recommendation.

Legal certainty as expressed by a consistent regulatory practice reflects the very fundamental judicial, financial and social interests of the market (including established service providers, new service providers, industry and consumers) in predictability, objectivity and transparency in regards to legislation, rights and obligations. In this sense the consistent regulatory practice and application of the directives regarding similar services strongly influences innovation, investment, market entry, competition and consumer use and confidence in services.

Harmonisation

Harmonisation of legislation regarding electronic communication networks and services in Europe is a primary policy objective of the European regulatory framework.

The ERG recognises the importance of achieving harmonisation, and the work of the ERG will support this principle.

Harmonisation is an ongoing process; not only dependent on the implementation of the European regulatory framework but also on national circumstances and the scope of interpretation of the European regulatory framework. The consequences in the market of the application of the European regulatory framework may therefore vary between member states.

These differences are recognised by the ERG – also the fact that therefore barriers to market entry specific to certain member states may be experienced.

Member states should commit to addressing barriers to market entry if they arise and in accordance with the European regulatory framework.

2 ERG Common Statement

The ERG recognises that:

- VoIP holds potentially significant benefits for the market and for the users.
- The European regulatory framework provides the legal framework related to provision and use of VoIP in Europe today.
- VoIP services exist today and are currently evolving. At this point no common conclusions on the evolution or revolution of the market posed by VoIP can be drawn. The market has not yet developed sufficiently.
- A particular challenge is to apply existing regulations to services based on different technologies (e.g. circuit-switched vs. IP) in a technologically neutral manner. This is especially complicated when specific service features (like nomadic use) are linked specifically to a particular technology such as IP.

The ERG agrees that:

- The regulatory approach to VoIP in Europe under the European regulatory framework[3] for the benefit of consumers should enable the greatest possible level of innovation and competitive entry in the market, whilst ensuring that consumers are adequately protected.

- Application and interpretation of rights and obligations in relation to VoIP should be in accordance with the European regulatory framework including the policy goals and regulatory principles existing today.

- Legal analysis of the European regulatory framework in relation to VoIP by the ERG is more appropriate when the market has further developed.

- The NRAs will further clarify the rights and obligations for VoIP providers.

- The NRAs are committed to address barriers to market entry if they arise and in accordance with the European regulatory framework.

- Consumers and service providers should be provided adequate information and be empowered to make informed choices about services and service provision.

ERG future work

- The ERG will provide information and guidance on VoIP related issues in order to increase predictability in the market and the consistent application of the European regulatory framework across Europe for the benefit of consumers and service providers.

- The ERG will continue to monitor and facilitate the development of the VoIP-market.

- The future work will be addressed according to the IRG/ERG Work Program.[4]

[3] Directives 2002/19/EC (Access Directive), 2002/20/EC (Authorisation Directive), 2002/21/EC (Framework Directive) and 2002/22/EC (Universal Service Directive).

[4] Work on the report with analysis of the wholesale broadband market situation (market 12 in the Commission's Recommendation on relevant markets) was started in 2003. The results will be used as material for the review of the Common Position on remedies as well as input for a Common Position on VoIP dealing with issues not addressed so far. The rapid growth of broadband access penetration enables new IP-based business models and services. The currently most prominent such new service is voice over IP (VoIP). The issues related to a common regulatory approach of ERG Members will focus in particular on VoIP's effects on fixed-line competition and on the regulatory questions that relate to Next Generation Networks, including VoIP-Interconnection (IP-IP as well as IP-PSTN). Topics such as competition in the fixed networks in relation to broadband access provision, including unbundled DSL services and bitstream access will also be examined. Cooperation with the Commission on the Common Position will be sought.

3 Specific Statement for Numbering and Number Portability

According to the ERG Common Statement, the ERG will provide information and guidance on VoIP related issues in order to increase predictability in the market and the consistent application of the European regulatory framework. In reference to this, this topic paper provides more clarification on numbering and number portability.

E.164 Numbering plan and the use of numbers for VoIP services

VoIP services can be addressed in many alternative forms such as through IP addresses, SIP addresses, H.323 addresses or E.164 numbers. It is important to acknowledge that using traditional E.164 numbers is just one option and it might gradually loose its dominant role in the future. However, since E.164 numbers are still needed to originate and receive calls from traditional voice services, they play an important role in addressing VoIP services and are therefore discussed here.

E.164 numbering ranges are usually divided into several generic types indicating the services that may be offered using these numbers. The ECC VoIP report[5] includes the following existing number ranges to be relevant for VoIP services: geographic numbers, mobile numbers, personal numbers and corporate numbers.

At the moment the position regarding the availability of geographic numbers for VoIP services varies in different Member States. The main argument in favour of allocating geographic numbers to VoIP services is that they offer the best support for competition, especially combined with number portability. The main arguments against it have been the nomadic use of VoIP and exhaustion of geographic numbering resources. The ECC VoIP report identifies three ways for allocating geographic numbers in order to support VoIP services:

- allowing nomadicity in a limited area,
- allowing nomadicity countrywide but requiring relation with geographical area of the number or
- removing requirements for relationship to geographical location.

Also mobile, personal and corporate numbers can be used to address VoIP subscribers. These are, however, seen as less attractive in many Member States because of the perceived high retail tariff for calling.

NRAs may also open new number ranges for nomadic VoIP services, whether or not existing number ranges are changed. The ECC VoIP report identifies three types of possible new number ranges: a general-purpose number range, a number range for nomadic services and a number range for ENUM-based services. The new number ranges could be motivated mainly by the high tariffs associated by end users to existing non-geographic numbers, the aim to keep the existing number ranges intact and by giving freedom to service providers to create their own service description. However, there is no guarantee that the tariff for a new number range will settle at a certain (low) level.

Number portability

Number portability is one of the main enablers of competition by enabling end-users to retain their telephone number when changing a service provider.

Therefore, number portability should be seen as one tool for lowering barrier to market entry instead of being a restriction to it. This view is supported also in the Recital 40 of the US Directive, which states that "Number portability is a key facilitator of consumer choice and effective competition in a competitive telecommunications environment such that end-users who so request should be able to

[5] European Communications Commitee.

retain their number(s) on the public telephone network independently of the organization providing service."

Current national regulations concerning numbering and number portability

The geographic number ranges are open for VoIP services in 18 of a total of 25 countries examined. However 7 of these name miscellaneous requirements that have to be fulfilled by VoIP services. They are not open in 5 countries. 4 countries are reviewing the situation.

6 countries allow VoIP services with geographic numbers from locations other than the fixed home location (nomadic use), however in 2 counties there are some restrictions for the nomadic use. 6 countries do not allow nomadic use of geographic numbers. In 3 countries it is partly allowed. 7 countries are reviewing the situation.

Concerning number portability, it seems that in most countries portability is possible for all services, inside each range of services (that seems to mostly consist of geographic numbers, mobile numbers, and other numbers).

ERG Statement on Numbering and Number Portability:

- In order to foster competition by stimulating the emergence of new services as well as promoting number portability numbering plans should be technologically neutral, based on the service descriptions and the same number ranges should in principle be available for both traditional voice and VoIP services.
- Number portability is an important point from the consumer’s as well as the provider’s point of view while enabling end-users to retain their telephone number when changing a service provider. Number portability is one of the main enablers of competition.
- Conditions concerning number portability should be equal for similar types of voice services within the scope of national numbering plans in order to facilitate consumer choice and promote effective competition.

4 Specific Statement on Access to Emergency Services

According to the ERG Common Statement, the ERG will provide information and guidance on VoIP related issues in order to increase predictability in the market and the consistent application of the European regulatory framework. In reference to this, this topic paper provides more clarification on provision of access to emergency services.

Access to emergency services is extremely important for citizens, irrespective of how a voice service may be classified for legal and regulatory purposes. This view is also reinforced in Recital 36 of the US Directive, which states that *"it is important that users should be able to call the single European emergency number '112', and any other national emergency telephone numbers, free of charge, from any telephone, including public pay telephones."*

In principle, basic access to the single European emergency number ("112") and other national emergency numbers can be arranged without significant difficulties at least for all VoIP services at fixed or otherwise known locations. However, because routing of national emergency calls is generally not possible in the international PSTN signalling network it will be necessary for VoIP providers to ensure that calls are routed to an appropriate national gateway.

Problems in providing access to emergency services are more often related to the nomadic nature of VoIP and the fact that a user can access the network at any access point in any country and the VoIP service provider can be located in any country. This raises practical questions on how to route an emergency call to the nearest emergency centre or to a specific emergency service answering point and how to get information on the location of caller.

The US Directive leaves room for technical feasibility when imposing obligations relating to the provision of location information. According to Article 26(2) of the US Directive, *"Member States shall ensure that calls to the single European emergency call number 112 are appropriately answered and handled in a manner best suited to the national organisation of emergency systems and within the technological possibilities of the networks"*. Also, in Article 26(3) it is stated that "*Member States shall ensure that undertakings which operate public telephone networks make caller location information available to authorities handling emergencies, to the extent technically feasible, for all calls to the single European emergency call number 112."* It is also desirable from a public policy point of view that access to emergency services is available from as wide a range of electronic communications services as possible.

It is also important to note that the number range used by the caller does not affect the ability of the emergency service to locate the caller because the emergency service is normally dependent on a database for obtaining a street address. The problems of whether or not such a database is available and whether or not the call is made from home or away cannot be solved by the choice of number range.

The ERG encourages the Industry to develop solutions to overcome any technical limitations to the provision of location information and adequate routing of emergency calls.

In the future, it may be necessary to update emergency service centres and emergency services to accommodate VoIP and other means of communication. This could mean for example a SIP address for emergency calls, an SMS number (112) for emergency SMS messages, an email address for emergency messages, etc. Further requirements should be discussed after technology and standards have matured.

<u>Current national implementations concerning access to emergency services</u>

Structure and arrangements for emergency services varies among European countries. 14 of a total of 17 countries examined impose the legal requirement that emergency calls have to be routed to an

appropriate emergency response centre. 12 countries also legally mandate that emergency calls have to be delivered with an accompanying CLI, but in some countries this is restricted to the cases where this is technically feasible. 5 of these countries also legally mandate that a call back capability for the emergency response team has to be provided. In some cases this obligation is restricted to these cases, where this is technically feasible. 10 countries also legally mandate that a capability to identify the caller also has to be provided. In some cases this obligation is restricted to these cases, where this is technically feasible. 14 countries also impose the legal requirement that the caller location has to be made available for the emergency response team. Often this requirement is restricted to the case where the fulfilment of this requirement is technically feasible. Several countries also put into force some other legal requirements.

Nomadic VoIP service providers could fulfil the national legal requirements regarding emergency services in 4 countries – although in this case restriction with respect to the functionalities which can be provided to the end user had to be accepted.

Nomadic VoIP service providers could not currently fulfil the national legal requirements in 2 countries and problems may arise in 5 countries.

ERG Statement on Emergency Services

- Access to Emergency services is extremely important for citizens, irrespective of how a voice service may be classified for legal and regulatory purposes.
- From a public policy point of view it is desirable that access to emergency services is available from as wide a range of electronic communications services as possible.
- VoIP emergency calls from fixed or otherwise known locations should be routed to the nearest emergency centre on the basis of the contractually agreed physical address.[6]
- When calling the emergency number, caller location information should be provided to the extent technically feasible.
- In those cases where the caller location cannot be determined by the VoIP provider (most likely in the case of nomadic use of VoIP services), the end-user should be clearly and unambiguously informed by the VoIP provider about any restrictions in routing emergency calls and providing caller location information and the potential consequences.
- Further requirements for nomadic VoIP services related to routing and caller location information should be discussed after technology and standards have matured.
- Further requirements related to other types of VoIP services, SIP emergency calls, SMS emergency messages, email emergency messages, etc. should be discussed after technology and standards have matured.

[6] Note this is not relevant in countries where the first stage emergency operator answers all calls regardless of geographic location

Annex 1: Summary of the Questionnaire on Numbering and Number Portability

1. Preliminary summary of the answers to the questionnaire on numbering for VoIP services

We received 25 answers from the following NRAs: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, UK.

A Geographic numbers

Denmark has a closed non-geographical numbering plan, and as a consequence has not contributed to questions A 1-9

- Who is eligible to apply for geographic numbers (e.g. network operator, service provider)?

14 *countries (Austria, Belgium, Cyprus, Czech Republic, Estonia, Finland, Hungary, Ireland, Malta, the Netherlands, Norway, , Sweden, Switzerland, UK) have an eligibility for* ***network operators and service providers****.* ***6*** *countries (Bulgaria, France, Germany, Iceland, Poland, Slovenia)* ***restrict*** *it* ***to network operators****.* ***3*** *countries (Romania, Spain and Portugal) have an* ***eligibility for PATS providers****. In* ***Greece*** *not only network operators but* ***also virtual network operators*** *are eligible.*

- What is the lot size for geographic numbers (e.g. block of 100, 1000, 10 000)?

This ranges from ***100*** *(for example Estonia) to* ***1 000 000*** *(for example Bulgaria) numbers. Most NRAs* ***allocate different lot sizes****, mostly* ***1 000*** *(existing in at least 12 countries) or* ***10 000*** *(existing in at least 17 countries).*

- How is the service characterized that can be provided with geographic numbers?

Analysing the answers to this question is difficult. There is a ***variety of different answers*** *that may be very similar although they differ in its wording.*
The main answers are:

- *addressing of (location) fixed network termination points and the provision of public available telephone services in fixed networks (Austria)*
- *information on the geographical localisation of the network termination point and the user (Belgium)*
- *addressing physical termination points of subscribers located in the geographic area which is identified with the area code; considered to be changed (Germany)*
- *geographically specified destinations and for access to or identification of end users, network operators, services, network termination points, or other network elements; considered to be modified (the Netherlands)*
- *the service is related to a fixed location; the fixed location indicates the Network Termination Point (NTP), where a terminal equipment may be connected; any NTP is located in a specific (geographic) area (Romania)*
- *a service available to the general public that includes initiating and receiving national and international calls; number contains geographic significance used for routing calls to the physical location of the network termination point (Slovenia)*
- *part of numbers digit structure contains a Geographic Area Code that is adopted or otherwise for routing calls to the physical location of the Network Termination Point (UK)*
- *Fixed voice service (Bulgaria)*

- *All kind of services on fixed networks (Switzerland)*
- *fixed telephony services within geographical areas (Norway, Sweden)*
- *provide access to subscribers of public fixed telecommunications networks (Cyprus)*
- *public telephone service (Czech Republic)*
- *PATS at fixed location (Portugal)*
- *mostly subscriber numbers (Finland)*
- *guaranteeing the location of the terminals using numbers allocated for a specific area and offering a full telephonic service (France)*
- *PATS (Hungary, Iceland)*
- *PATS with geographic meaning (Spain)*
- *usually routed to a fixed destination in a discrete geographical area (Ireland)*
- *PSTN. Prefix denotes operator and region. (Malta)*
- *services provided in PSTN (Poland)*
- *Telephony services (Greece)*

- Are geographic number ranges open for VoIP services?

*They are **open** in **18** countries (Austria, Belgium, Bulgaria, Finland, France, Germany, Greece, Hungary, Ireland, Malta, the Netherlands, Norway, Portugal, Romania, Spain, Sweden, Switzerland, UK). **7 of them** (Austria, Bulgaria, Malta, the Netherlands, Portugal, Romania, Spain) name miscellaneous requirements that have to be fulfilled by VoIP services. They are **not open** in **5** countries (Cyprus, Czech Republic, Estonia, Poland, Slovenia). **3** countries are reviewing this subject (Cyprus, Iceland and Malta).*

- Which conditions does the VoIP service have to fulfil to be eligible for geographic numbers (e.g. number tied to physical Network Termination Point, end-user needs to have a street address in the respective geographic area, etc.)?

*Same difficulties analysing the answers to this question as in question 3. There is a **variety of different answers** that may be very similar although they differ in its wording:*

- *They have to fulfil the purpose and usage conditions for geographic numbers (Austria)*
- *End-users must use geographic numbers which belong to the numbering area where their access to Internet is located. (Belgium)*
- *When VoIP service has a certain QoS and is a substitute for the fixed voice service, then it is eligible for geographic numbers. (Bulgaria)*
- *To be VoIP provider eligible for geographic numbers, he has provide VoIP as PATS / all which is obligatory for PATS. (Czech Republic, Hungary)*
- *All numbers belonging to a certain number range must behave in a similar manner in network interface. (Finland)*
- *It is asked to the operator to justify it can fulfil the condition of fixed location within a given geographic zone, the most common proof being that he also controls the access line. (France)*
- *Geographic numbers e.g. have to be used for/by subscriber of a certain geographic area. To ensure that this obligation is fulfilled, geographic numbers are tied to a physical Network Termination Point up to now. (Germany)*
- *generally; one number per termination point, and the number may only be used within the minimum numbering area (Ireland)*
- *Connection to the geographic number has to be terminated in the geographic area. (the Netherlands)*
- *The geographic numbers must be tied to physical NTP in a public fixed network according to the defined geographic areas. (Portugal)*

- *number tied to physical NTP, end-user needs to have a street address in the respective geographic area (Romania)*
- *a geo-number is associated to a geo-NTP (Spain)*
- *Geographic numbers should be used within the geographical area. (Greece, Sweden)*
- *If they want to offer public telephony service, they have to fulfil all conditions applying to or linked with this service. (Switzerland)*
- *General condition of using numbers in line with regulation and specified numbering plan (Norway)*

- Are geographic numbers for VoIP services differentiated in any way from numbers used by traditional PSTN services?

***18** countries **have no differentiation**. **4** are **reviewing** this issue.*

- Is it allowed to use these VoIP services from locations other than the fixed home location (nomadic use)?

*It is **allowed in 6** countries (Belgium, Finland, Ireland, Malta, Switzerland, UK) and **not allowed in 6** other countries (Austria, Bulgaria, Czech Republic, Hungary, Portugal, Spain). In **3** countries (France, the Netherlands and in Norway) it is **partially allowed**. **7** NRAs are **reviewing** this subject at the moment (Cyprus, Germany, Iceland, Poland, Romania, Slovenia, Sweden). **Greece** points out that there has been no interest so far for nomadic use.*

- If so, are there any restrictions for the nomadic use of geographic numbers?

*From the countries where nomadic use is allowed (see q. 8) there are **3 without any restrictions** (Finland, Switzerland, UK). **Belgium** doesn't allow calls to emergency services when the end-user makes a call not from his home location. **The Netherlands** restrict it to the geographic area of the number. In Ireland, nomadic operation for geographic numbers outside of the relevant minimum numbering area (MNA) is permitted, but permanent out-of MNA use is not permitted. In **Germany** it is not allowed to use geographic numbers for services without a fixed home location although this is under consideration for the future. In **Norway** the use of numbers is restricted to the geographical area the numbers are reserved for in the national numbering plan. **5 NRAs** are reviewing this subject (Cyprus, France, Malta, Poland, Slovenia).*

B Non-geographic numbers (e.g. national numbers, personal numbers etc.)

- Are non-geographic number ranges open for VoIP services or do you intend to open new ranges for these services? If yes, please list them.

***17 countries** have non-geographic number ranges **open for VoIP services or intend to do so** (Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, the Netherlands, Norway, Slovenia, Spain, Sweden, Switzerland, UK, Romania). The possibilities differ from using existing number ranges (0700 etc.) to wholly new number ranges. In **6 countries they are not open** for VoIP services (Belgium, Bulgaria, Hungary, Iceland, Poland, Portugal,). **4 countries are still reviewing** this subject.*

- Who is eligible to apply for these numbers (e.g. network operator, service provider)?

***14 countries** (Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Ireland, the Netherlands, Norway, Sweden, Switzerland, UK) have an eligibility for **network operators and service providers**. **3 countries** (Iceland, Poland, Slovenia) restrict it to **network operators**. **Spain** has an eligibility for **PATS providers**. In Romania, ECS providers are eligible*

*for applying for these numbers. In **Germany** it **differs** depending on the number range. In **Greece** not only network operators but also virtual network operators are eligible. **2 countries are reviewing** this subject (Malta, Portugal,).*

- What is the lot size for these numbers (e.g. block of 100, 1000, 10 000)?

*This differs depending on different number ranges and **varies** from a **number-by-number** allocation in Austria, Switzerland and Germany to blocks of **100** numbers (7 countries), **1 000** numbers (7 countries), **10 000** (9 countries), **100 000** (Denmark) or even **1 000 000** (Germany). A lot of countries have more than one block size.*

- How is the service characterized that can be provided with these numbers?

In some countries this differs depending on the different number ranges (Belgium, Cyprus, Finland, Germany, the Netherlands, Switzerland). Other mentions are:

- *Location independent fixed network numbers serve for the addressing of subscribers in connection with telephone services, which allow the subscriber to keep his subscriber number independent of his location (Austria).*
- *Access to the service "transfer voice over IP". (Czech Republic)*
- *The service has to be characterized as electronic communications networks or services. (Denmark)*
- *Officially, non-geographic numbers are attributed to "any operator of telecommunications". (France)*
- *The planned national subscriber numbers shall have no connection to a special geographic area. (Germany)*
- *Mobile Service (Iceland)*
- *No restrictions on the geographic area where the number must be terminated. (Ireland)*
- *VoIP services (Slovenia)*
- *Personal numbers (Spain)*
- *non geographic telephony services (Sweden)*
- *VoIP telephony service not restricted to a geographical area (Norway)*
- *where the Numbering Plan for the 056 number of the Communications provider offering the service has no geographic significance; where the location of the customer's apparatus identified by a given telephone number at the time of use is not necessarily permanently associated with a particular Network Termination Point; where translation to a geographic number is not involved; and services which are not a mobile service. (UK)*
- *IN services (Poland)*
- *Telephony services (Greece)*

- Which conditions does the VoIP service have to fulfil to be eligible for these numbers?

Different answers, for example:

- *The VoIP service has to fulfil the conditions of the service characterisation (Austria, Romania)*
- *In principle the same conditions as those which apply for non VoIP-services (Belgium, Estonia, Sweden)*
- *To be registered for service "voice communication via internet". (Czech Republic)*
- *All numbers belonging to a certain number range must behave in a similar manner in network interfaces (Finland).*
- *None (France)*

- *Concerning the planned national subscriber numbers: The numbers should be given to end users; the numbers should enable incoming and outgoing connections with the German public telephone network; no money should be paid from the VoIP-service to the number holder for connections from or to the number; number portability should be valid and the procedures established for numbers of area codes could be used; SMP company is obliged to offer carrier (pre) selection. (Germany)*
- *Must have notified ComReg of operating a publicly available electronic communications network. (Ireland)*
- *Correct registration - prior to the commencement of the provision of public communications networks or services, notification must be given in writing to the Agency. (Slovenia)*
- *To provide PATS (Spain)*
- *Correct registration - prior to the commencement of the provision of public communications networks or services, notification must be given in writing to the Agency. (UK)*
- *General conditions (Norway)*
- *The VoIP service that fulfils the charging principles (i.e. freephone) for a specific non-geographic number range is eligible for the numbers of that specific number range (Greece).*

- Is it allowed to use these VoIP services from locations other than the fixed home location (nomadic use)?

*It is **allowed in 14 countries** (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, the Netherlands, Norway, Spain, Switzerland, UK). **5 countries** (Cyprus, Malta, Poland, Portugal, Slovenia) are **reviewing** this issue. **Greece** points out that there has been no interest so far for nomadic use.*

- If so, are there any restrictions for the nomadic use of these numbers?

***7 countries have no special restrictions** (Finland, France, Germany, Norway, Slovenia, Switzerland, UK). **The Netherlands** do not allow to use the numbers outside of the particular country. **Austria** mandates that the main focus of the usage have to be in Austria. **Belgium** doesn't allow calls to emergency services when the end-user makes a call not from his home location. In the **Czech Republic** the maximum length of number is 24 digits and the number is not portable. Cyprus and Ireland are reviewing the subject.*

C Consultations

- Did you consult on geographic numbers and/or non-geographic numbers with regard to VoIP or do you intend to do so?

Consultations in Austria, Ireland and the UK have already been finished. There are ongoing consultations in Denmark, France, Germany, Malta, Norway, Poland and Spain. The following NRAs plan to make consultations: Belgium, Cyprus, the Netherlands and Romania.

- If yes, when can results be expected?

This differs from now until the end of 2005.

2. Portability

One of the questions asked on portability was:

> ***Is portability possible between numbers belonging to different ranges (e.g. between geographic fixed, mobile or nomadic numbers)?***

Answers show that in **17** countries from 19 (all except Estonia and Denmark), portability is not possible between different types of services. . Luxembourg is even planning to create a sub-category of geographic VoIP numbers, in order to allow portability between VoIP services and not with other services.
In Estonia, portability between geographic and nomadic numbers seems to be possible, if it is technically feasible. In Denmark portability between fixed and mobile numbers will be compulsory from December the 31st 2005.

Location portability

Location portability is an aspect that was not mentioned in the questions, but on which some countries gave elements. The situation seems to vary a lot. In some countries, location portability is not mandatory (Ireland, Romania), when in Norway it is not even possible, and in Czech Republic, it seems to be an obligation (within the local area for geographic numbers, everywhere for non-geographic numbers).

In some countries (France, Netherlands, Sweden), location portability is restricted within local areas only.

Annex 2: Summary of the Emergency Services Questionnaire

1 Introduction

This report aims to support a common ERG statement regarding the EU consultation document on the treatment of the voice over the internet protocol (VoIP) under the EU Regulatory Framework.[7] The report explores issues regarding the provision of access to emergency services based on information obtained from seventeen European countries by way of a questionnaire.

Chapter two examines what legal requirements exist for access to emergency services, and chapter three whether there are any other agreements dealing with access to emergency services and if this is the case, which requirements are set in these voluntary agreements. Chapter four explores the requirements which cannot be sufficiently fulfilled by VoIP providers, while chapter five focuses on other national emergency numbers besides the single European emergency call number "112". The conclusions are given in chapter six.

2 Legal requirements for access to emergency services

2.1 Routing an emergency call to an appropriate emergency response centre

Most countries – Austria, the Czech Republic, Denmark, Finland, France, Germany, Iceland, Norway, Poland, Portugal, Romania, Switzerland and Sweden – mandate (at least if technically feasible) that emergency calls has to be routed to an appropriate emergency response centre. Only Estonia, Hungary and the United Kingdom do not have an obligation to route an emergency call to an appropriate emergency response centre in their respective laws. Estonia regulates this with an agreement between the Telecommunications Operator and the Estonian Rescue Board (see chapter 4). In Ireland all emergency calls are routed to either of two emergency call handling centres who then forward callers to the appropriate emergency service based on geographic location and type of service sought. The United Kingdom uses the approach of first stage emergency communications providers who answer all emergency calls.8

Table 1: Legal requirements regarding routing an emergency call to an appropriate emergency response centre

Country	Statement
Austria	Yes, technical and commercial possibilities has to be taken into account
Czech Republic	Yes
Denmark	Yes - Service providers must terminate calls immediately in the network of the USP. USP delivers calls to the nearest emergency center
Estonia	No
Finland	Yes
France	Yes
Germany	Yes
Hungary	No
Iceland	Yes
Ireland	Call is delivered to the nearest appropriate emergency service centre
Norway	Yes
Poland	Yes
Portugal	Yes

[7] European Commission, The treatment of the Voice over the Internet Protocol (VoIP) under the EU Regulatory Framework, Commission staff working document, 14 June 2004, Brussels.

[8] Ofcom response to the European Commission's information and consultation document on "The treatment of Voice over Internet Protocol (VoIP) under the EU Regulatory Framework", 27 August 2004, p. 4

Romania	Yes
Sweden	Yes
Switzerland	Yes
United Kingdom	No

2.2 Delivering a call with an according Calling Line Identification (CLI)

Many countries – Austria, Estonia, Finland, Hungary, Norway, Poland, Portugal, Romania, Sweden, Switzerland, Ireland and the United Kingdom – mandate calls to be delivered with an according CLI attached, either as a general obligation or – at least – if this is possible from a technical point of view. Furthermore, the Czech Republic mandates that the USP has to provide identification information. Only Denmark, France and Iceland do not have an obligation, which requires the transmission of the CLI implemented, while information on the situation in Germany is not available.

Table 2: Legal requirements on delivering a call with an according Calling Line Identification (CLI)

Country	Statement
Austria	Yes
Czech Republic	USP has to provide identification information
Denmark	No – the USP in practice receives all 112 calls with CLI and the USP must deliver them with CLI to the emergency authorities – Based on agreement between USP and emergency authorities
Estonia	Yes – if technically possible.
Finland	Yes
France	No – but agreement
Germany	N/A, ordinance and technical directive is in preparation
Hungary	Yes
Iceland	No
Ireland	Yes
Norway	Yes
Poland	Yes
Portugal	Yes
Romania	Yes
Sweden	Yes – if technically feasible
Switzerland	Yes
United Kingdom	Yes – if technically feasible and commercially viable

2.3 Providing a call back possibility for the emergency response team

The feature of providing a call back possibility for the emergency response team is related to question 2b. Several countries mandating a CLI to be attached to every call – Estonia, Finland, Portugal, Switzerland and the United Kingdom – also mandate the provision of a call back possibility for the emergency response team – at least if this is technically feasible. Austria, Denmark, the Czech Republic, France, Hungary, Iceland, Ireland, Norway, Poland, Romania and Sweden do not have such an obligation implemented, while information on the situation in Germany is not available.

Table 3: Legal requirements on providing a call back possibility for the emergency response team

Country	Statement
Austria	No (usually available via CLI)
Czech Republic	No – but used
Denmark	No (usually available via CLI) Based on agreement between USP and emergency services
Estonia	Yes
Finland	Yes (CLI)
France	No – but agreement
Germany	N/A, ordinance and technical directive is in preparation
Hungary	No
Iceland	No
Ireland	No – but a call back mechanism is available
Norway	No
Poland	No
Portugal	Yes
Romania	No
Sweden	No
Switzerland	Yes
United Kingdom	Yes – if technically feasible and commercially viable

2.4 Providing a possibility to identify the caller (e.g. via the CLI)

The feature of providing a possibility to identify the caller is also strongly related to question 2b. The countries mandating a CLI to be attached to every call typically also legally mandate (at least to some extent) the provision of a possibility to identify the caller. The Czech Republic also does have such an obligation, while Denmark, France, Iceland, Ireland, Sweden and the United Kingdom do not. No information is available from Germany.

Table 4: Legal requirements on providing a possibility to identify the caller

Country	Statement
Austria	Yes
Czech Republic	Yes
Denmark	No - (usually available via CLI) Based on agreement between USP and emergency services[9]
Estonia	Yes – if technically possible
Finland	Yes (CLI + access to information of the subscriber)
France	No – but agreement
Germany	N/A, ordinance and technical directive is in preparation
Hungary	Yes
Iceland	No
Ireland	No
Norway	Yes
Poland	Yes
Portugal	Yes (CLI + access to information of the subscriber)
Romania	The operator could be obliged to provide the CLI in case of 112 calls, at the request of the authorities, under the conditions set out by Romanian Ombudsman (with the advice of ANRC). The conditions have not been adopted yet by the Ombudsman.
Sweden	No
Switzerland	Yes

[9] The USP must maintain a comprehensive Directory. This is the basis of transferral of Caller ID.

United Kingdom	No

2.5 Providing the location information of the caller

The provision of the caller location (at least if technically feasible) is mandated in Austria, the Czech Republic, Denmark, Estonia, Finland, France, Hungary, Norway, Sweden, Poland, Romania, Switzerland, Ireland and the United Kingdom.[10] No such obligation is in place in Iceland and in Portugal. For Germany no information is available.

Table 5: Legal requirements on providing the location information of the caller

Country	Statement
Austria	Yes – those information data, which are processed in a communications network
Czech Republic	Yes
Denmark	Yes – can based on agreement between USP and emergency authorities
Estonia	Yes – if technically possible
Finland	Yes – if technically possible, with the best accuracy the communications provider provides for business purposes
France	Yes – if technically possible
Germany	N/A, ordinance and technical directive is in preparation
Hungary	Yes
Iceland	No
Ireland	Yes – if technically feasible
Norway	Yes, however, on application, providers of public telephone services may be given time-limited exceptions to the duty to offer origination marking
Poland	Yes
Portugal	No
Romania	The operator could be obliged to provide the CLI in case of 112 calls, at the request of the authorities, under the conditions set out by Romanian Ombudsman (with the advice of ANRC). The conditions have not been adopted yet by the Ombudsman.
Sweden	Yes – if technically feasible
Switzerland	Yes
United Kingdom	Yes – if technically feasible

2.6 Other requirements

Several countries have additional legal obligations implemented in their national laws. Denmark mandates emergency calls to be immediately terminated in the USP's network, Finland mandates "same requirements" for all telephony service providers, Germany mandates emergency call numbers 110 and 112 not to be used by automatically generated emergency calls, Norway mandates a possibility to identify the subscriber, also in the case of the use of hidden/secret telephone numbers and Sweden requires "alternative forwarding paths" for emergency calls from PATS providers.

[10] In Norway, on application, providers of public telephone services may be given time-limited exceptions to the duty to offer origination marking.

Table 6: Other legal requirements

Country	Statement
Austria	No
Czech Republic	No
Denmark	Yes - Same requirements for all telephony service providers
Estonia	No
Finland	Yes - Same requirements for all telephony service providers
France	No
Germany	Emergency call numbers 110 and 112 must not be used by automatically generated emergency calls
Hungary	No
Iceland	No
Ireland	-[11]
Norway	It should be possible to identify the subscriber, also in the case of hidden/secret telephone number
Poland	No
Portugal	-[12]
Romania	No
Sweden	The PATS provider is to ensure that the provision of an emergency call can be made through alternative forwarding paths to the emergency response centre, but this requirement has to take into consideration to the size of the service.
Switzerland	No
United Kingdom	-[13]

3 Other agreements dealing with access to emergency services

Several countries have agreements implemented, which are not mandated by national law, but contribute to the handling of emergency calls. In Austria an agreement between incumbent and OLOs deals with technical details regarding routing and CLI, in Denmark agreements between the service providers and the universal service provider (USP) establish the immediate termination of calls in the USP-network and an agreement between USP and emergency authorities deals with issues regarding appropriate handling of emergency calls and in Estonia an agreement between the Estonian Rescue Board and the communications providers establishes the routing to one of four emergency call centres depending on the caller location. In France several issues like transport of CLI, postcode of BTS or reverse directory are implemented according to agreements between communications providers and emergency services. In Ireland an SLA for handling emergency calls between incumbent and other communications providers identifies obligations in relation to provision of caller information and routing. Norway in some places has agreements with local emergency response centres including double cable connections to the telephone exchange and increased service level. In Sweden a standard dealing with positioning of mobile terminals and emergency calls was decided recently and could influence VoIP services and in the United Kingdom various requirements that are governed by a code of practice owned by the 999 Liaison Committee are in place.

[11] No information, whether this requirement is obliged or not.
[12] No information, whether this requirement is obliged or not.
[13] No information, whether this requirement is obliged or not.

Table 7: Other agreements and requirements

Country	Statement
Austria	Yes, non-binding guidelines between incumbent and OLOs regarding routing and CLI
Czech Republic	No
Denmark	Yes – agreements between the SP and USP are necessary regarding the immediate termination of calls in the USP-network, agreement between USP and emergency authorities is necessary and also possible alternative for the automatic routing to the nearest emergency centre.
Estonia	Agreement on routing to one of 4 emergency call centres depending on caller location
Finland	No
France	Agreements between communications providers and emergency services regarding CLI, postcode of BTS, and reverse directory
Germany	No
Hungary	No
Iceland	No
Ireland	SLA for handling emergency calls between incumbent and OAOS
Norway	Agreements including double cable connections to the telephone exchange and increased service level
Poland	No
Portugal	No
Romania	No
Sweden	Swedish Standard regarding positioning of mobile terminals and emergency calls was decided
Switzerland	No
United Kingdom	A code of practice regarding the issue of non-technical administration

4 Requirements which cannot be sufficiently fulfilled by VoIP providers

Many countries – the Czech Republic, Estonia, Finland, France, Norway and Sweden – identified (at least to some extent) possible problems for VoIP providers regarding the routing to an appropriate emergency response centre. Several countries – the Czech Republic, Denmark, Finland, Norway, Romania, Sweden, and the United Kingdom – also identified (at least to some extent) possible problems for VoIP providers regarding the provision of caller location. In Ireland all providers can currently fulfil all criteria given in question 2 and 3. In Portugal PATS VoIP services can fulfil the requirements mentioned in question 2, but currently no nomadic VoIP services are provided. In Austria all requirements regarding question 2 and 3 can be fulfilled from the legal point of view, but for practical usage the providers will probably not be able to route the call to the appropriate emergency centre and to provide the caller location information in all cases. In Switzerland all requirements mentioned in question 2 and 3 can sufficiently be fulfilled by VoIP providers. No information is available from Germany, Hungary and Iceland.

Table 8: Requirements mentioned in questions 2 and 3 which cannot be sufficiently fulfilled by VoIP providers

Country	Statement
Austria	All requirements can be fulfilled from the legal point of view, but for practical usage the providers will probably not be able to route the call to the appropriate emergency centre and to provide the caller location information in all cases
Czech Republic	Any requirement relating to the emergency calls
Denmark	Location information can pose a problem - only for nomadic VoIP services
Estonia	In future it may be a problem to fulfil the requirements of the agreement regarding routing of an emergency call to one of the 4 emergency call centres based on the caller location
Finland	In some cases, routing to the nearest emergency response centre and location information of the caller
France	VoIP providers unable to locate their caller should find solutions to route the call
Germany	N/A, ordinance and technical directive with defining legal requirements is currently in preparation
Hungary	N/A, ordinance and technical directive with defining legal requirements is currently in preparation
Iceland	Information not available
Ireland	VoIP providers should ensure that best efforts are made to deliver calls to the emergency numbers. Caller location information may not be available, especially in the case of nomadic users
Norway	Regarding nomadic use of VoIP services, location information can pose a problem
Poland	Currently no VoIP services
Portugal	Currently no nomadic VoIP services are provided. PATS VoIP services fulfil the requirements mentioned in 2
Romania	Due to technical reasons, some VoIP providers will not be able to give to the emergency service provider access to location of the end-user.
Sweden	The providers of nomadic VoIP cannot fulfil the requirements regarding routing to the nearest emergency response centre providing location information of the caller
Switzerland	All requirements can be sufficiently fulfilled by VoIP providers
United Kingdom	It may not be technically feasible for services to provide accurate Caller Location Information, if the service can be used via an Internet connection in any location.

5 Other national emergency numbers besides the single European emergency call number '112'

Most countries have emergency numbers in addition to the single European emergency call number "112" in operation. As shown in the list below, these emergency numbers do not follow a common principle and differ from country to country.

Table 9: Other national emergency numbers than 112

Country	Statement
Austria	122 - fire Brigade 128 - gas Brigade 133 - police 140 - mountain Rescue Service 141 - medical Help 142 - crisis Line 144 - ambulance 147 - emergency Service for Children and Juveniles
Czech Republic	150 - fire brigade 155 - rescue service 158 - state police
Denmark	None
Estonia	110 - police call
Finland	10022 - police
France	15 - call to SAMU, i.e. mobile emergency medical service 17 - police 18 - fire departments 115 - social emergency 119 - abused childhood
Germany	It is planned to use 110 as a further national emergency number
Hungary	104 - ambulance 105 - fire brigade 107 - police
Iceland	None
Ireland	999
Norway	110 - fire brigade 113 - ambulance, hospital 1412 - for text telephone users
Poland	984 - river rescue service 985 - mountain/sea rescue service 986 - municipal police 991 - power stations brigade 992 - gas brigade 993 - heating brigade 994 - waterworks brigade 997 - police 998 - fire brigade 999 - ambulance
Portugal	117 - fire brigade 115 - the old emergency number (to be dropped)
Romania	955 - police 981 - fire department 961 - ambulance
Sweden	90000
Switzerland	117 - police 118 - fire Brigade 143 - samaritans 144 - ambulance 147 - samaritans for children
United Kingdom	999