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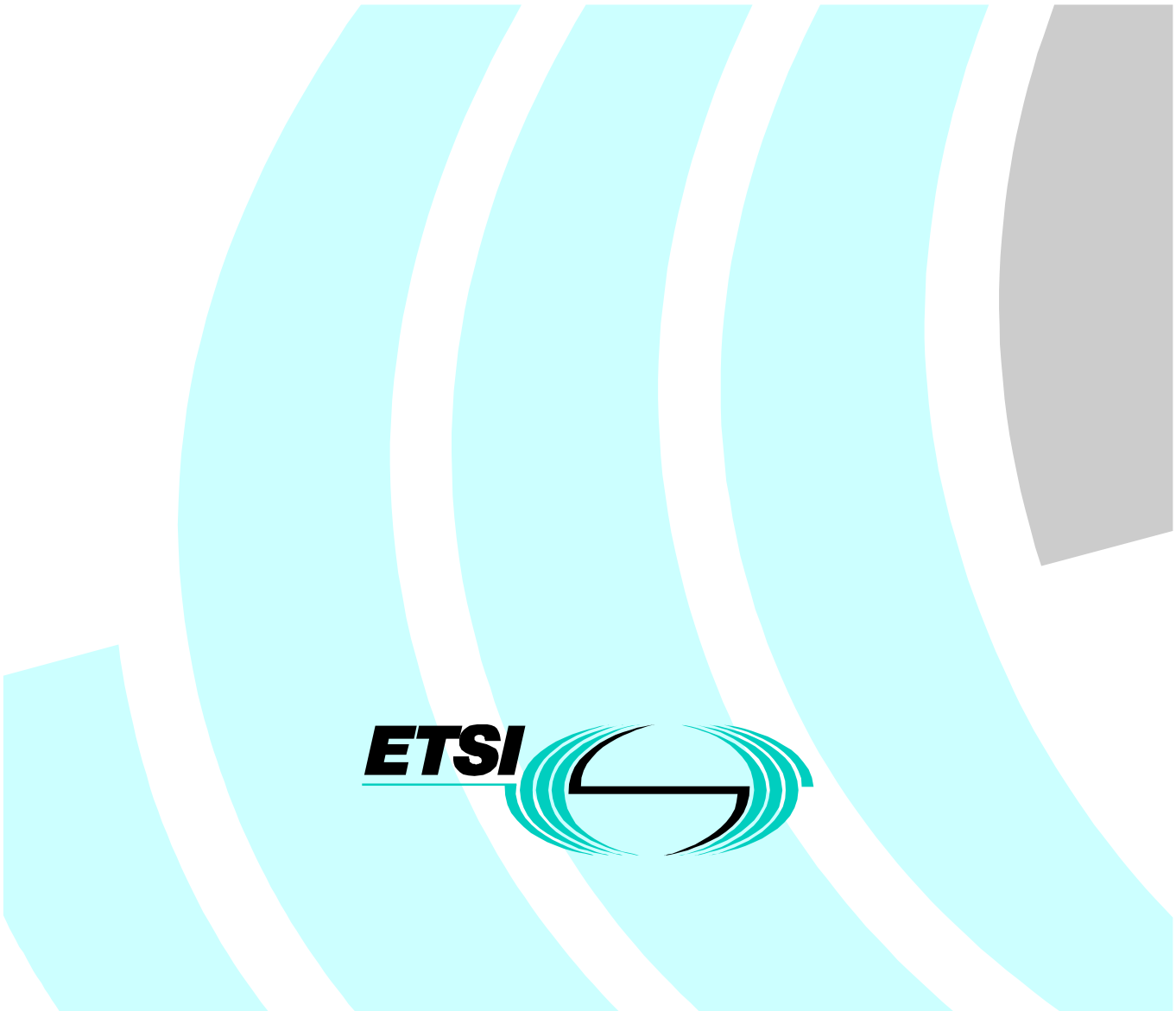
European Standard (Telecommunications series)

Human Factors (HF); Human factors requirements for a European Telephony Numbering Space (ETNS)



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ETSI

Postal address
F-06921 Sophia Antipolis Cedex - FRANCE

Office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16
Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Internet
secretariat@etsi.fr
http://www.etsi.org

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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Human Factors (HF).

The intended users of the present document include:

Table 1: Intended users and potential benefits

	User	ES used for	Potential Benefit
1	Service designers	Development of the structure and presentation of ETNS services	Establish a minimum level of usability through adherence to the requirements in the present document.
2	ETNS service providers	To establish a basis for ensuring that their services will meet the needs of their users	Minimum level of usability of services
3	User groups	To identify problems within ETNS services	Increased awareness by user groups of the value of a minimum level of usability through adherence to human factors requirements
4	ETSI Technical Bodies	Development of ETNS standards that support users' minimum needs	Minimum level of usability of services by ensuring that basic user needs are met

National transposition dates	
Date of adoption of this EN:	23 October 1998
Date of latest announcement of this EN (doa):	31 January 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 July 1999
Date of withdrawal of any conflicting National Standard (dow):	31 July 1999

1 Scope

The present document specifies the Human Factors (HF) requirements related to all aspects of a European Telephony Numbering Space (ETNS). It describes the requirements to be met jointly by the ETNS service provider and the network operator enabling access to the ETNS service.

The present document applies to any ETNS service provided within an ETNS scheme based upon a European Country Code (CC) and provided for access from public and private telecommunications networks.

It covers those aspects of ETNS services that would be of importance to the users of those services and to other telephony users who may be affected by the introduction of an ETNS. Requirements cover:

- the formatting of the written presentation of ETNS numbers to enable users:
  - to identify an ETNS service;
  - to minimize dialling errors caused by difficulties in memorizing long digit strings;
- rules for migrating from an ETNS Service to a Global Service that will minimize difficulties for users;
- rules that ensure that called users receive appropriate Calling Line Identity (CLI) information when called from a European Number (EN);
- rules that ensure calling users are still able to determine call charges after a EN has been ported to a new provider;
- rules that ensure the minimization of user difficulties caused by call delays;
- rules to overcome the potential linguistic difficulties associated with ETNS services.

Mobility aspects of an ETNS are outside the scope of the present document. Only those aspects of an ETNS to which specific requirements can be attached are covered in the present document. Other Human Factors aspects of an ETNS are presented in TR 101 056 [1].

2 References

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or

b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] TR 101 056: "Human Factors (HF); European Numbering Task Force (ENTF); Human Factors aspects of the European Telephony Numbering Space (ETNS)".

[2] ITU-T Recommendation E.721: "Network grade of service parameters and target values for circuit-switched services in the evolving ISDN".

[3] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[4] ITU-T Recommendation E.123: "Notation for national and international telephone numbers".

[5] TR 101 073: "Number portability for pan-European services".

[6] TR 101 041 Parts 1 and 2: "Human Factors (HF): European harmonization of network generated tones".

[7] COM(96) 590 Commission of the European Communities: "Towards a European Numbering Environment: Green Paper on a Numbering Policy for Telecommunications Services in Europe".

[8] D. MacDonald, S. Archambault, "Using Customer Expectation in Planning the Intelligent Network", The Fundamental Role of Teletraffic in the Evolution of Telecommunications Networks, Proc. of 14th ITC, Antibes Juan-les-Pins, France, June 1994, pp. 95-104.

[9] ETR 116: "Human Factors (HF); Human factors guidelines for ISDN Terminal equipment design".

[10] ETR 329: "Human Factors (HF); Guidelines for procedures and announcements in Stored Voice Services (SVS) and Universal Personal Telecommunication (UPT)".

[11] ETO 96 09 94 04: "Second Interim Report on Numbering related to the topic of user-friendliness".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following definitions apply:

post-dialling delay: for ISDN calls the post-dialling delay is the post-selection delay (en-bloc sending). For non-ISDN calls the post-dialling delay is the time interval from the caller pressing the last dialled digit or pressing a key to send all the digits of the called number until a call disposition message or signal is received by the calling terminal.

Post-Selection Delay (EN-Bloc Sending): the time interval from the instant the first bit of the initial SETUP message containing all the selection digits is passed by the calling terminal to the access signalling system until the last bit of the first message indicating call disposition is received by the calling terminal (ALERTING message in case of successful call) (see ITU-T Recommendation E.721 [2]).

ETNS service: a service that has been assigned a European Service Identity (ESI).

ETNS service provider: an entity that provides one or more ETNS service(s) to its ETNS Subscribers on a contractual basis.

ETNS subscriber: an entity that requests a European Number from a ETNS Service Provider in order to offer access from a Calling Party to an ETNS service.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CC	Country Code
CEC	Commission of the European Communities
CLI	Calling Line Identity
ECC	European Country Code
ECNA	European Corporate Network Access
EN	European Number
ENTF	European Numbering Task Force
ESC	European Service Code
ESI	European Service Identity
ESN	European Subscriber Number
ETNS	European Telephony Numbering Space
ETO	European Telecommunications Office
GSN	Global Service Number
HF	Human Factors
ITU-T	International Telecommunications Union - Telecommunications (formerly CCITT)

4 Structure of ETNS service numbers

4.1 Numbering scheme

The ETNS numbering scheme upon which the requirements in the present document are based assumes the use of a specific Country Code (CC) assigned to Europe (CC-388).

Subclauses 4.1.1 to 4.1.3 describe this scheme.

4.1.1 European Number (EN)

To implement the European Country Code (CC) scheme the allocation of a specific CC is required. The European CC is used to identify a set of ETNS services provided in two or more ETNS countries, instead of designating a specific country. Figure 1 describes the structure of the ETNS number.

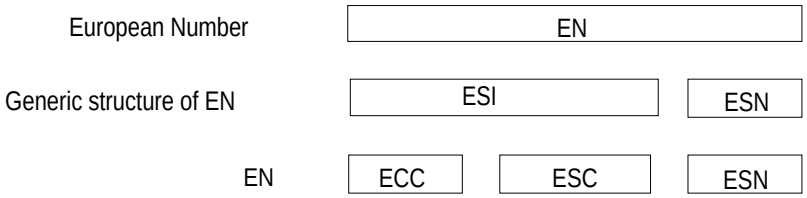

Figure 1: European Number Structure

The structure of the EN should not preclude evolution towards a global numbering scheme on a per service basis where this is a requirement.

ETNS shall be designed to have a minimum of 100 services and a potential of 10 million subscribers per service if required.

The total length of the number shall not exceed 15 digits.

4.1.2 European Service Identity (ESI)

An ESI is assigned to a service or a family of services in some specific cases.

An ESI shall begin with the CC allocated to the ETNS. The length of the ESC can vary between 1 and 4 digits. Examples of ESIs are:

- 388 3;
- 388 25;
- 388 326;
- 388 5432.

The length of the ESIs can either vary with a minimum length of 4 digits (e.g. 388 2) and a maximum of 7 (e.g. (388 2345)). In this scheme, there is no problem to find a hundred ESCs.

There shall not be any indication of an ETNS service provider in the ESI.

4.1.3 European Subscriber Number (ESN)

The structure and length of the ESN depends on the service, mostly according to the number of ETNS service providers and to the number of expected subscribers.

Initially the number's length is fixed for any given service, the use of variable length numbers is for further study.

To reach the goal of 10 million subscribers, the ESN shall be at least 7 digits long.

For some services the ESN is not required e.g. access to information services or services that require 2-stage dialling.

An ESN can be either structured or unstructured. In an unstructured number, there is no meaningful information embedded in the number. In a structured number, the first part of the number, called the domain entity, uniquely identifies one ETNS subscriber. By looking at the domain entity, the user would be able to determine who the ETNS subscriber is.

5 Number formatting

5.1 User dialling difficulties

Some of the schemes for moving from ETNS services to global services may result in longer numbers and these will reach the ITU-T limit of 15 digits (see ITU-T Recommendation E.164 [3]). When the need to allocate codes to corporate networks is taken into account, it is likely that European corporate network numbers will be longer than other ETNS numbers and, in some European countries, longer than existing national numbers and longer than existing corporate network numbers. This increased number length, to 14 or 15 digits, will mean that corporate network numbers will be amongst the most difficult for users to remember and to dial. The corporate network number length problem will only apply to people outside a corporate network trying to access someone within it. For internal calls within a corporate network, people will only have to dial abbreviated codes, and these need be no longer than codes used in any similarly sized corporate network not using ETNS numbers.

There is very good evidence that dialling accuracy will decrease significantly with number length (see TR 101 056 [1]). As numbers increase in length and become difficult to memorize the incidence of dialling errors or of call set-up being terminated by inter-digit time-outs is likely to increase as users repeatedly refer back to printed or written telephone numbers.

5.2 Number presentation

For printed material, the issue of how a number should be presented is addressed in ITU-T Recommendation E.123 [4]. The Recommendations in this clause are based on the principles contained in ITU-T Recommendation E.123 [4].

If someone had to dial a telephone number such as:

(00)388522759763456

(the maximum length of a corporate network number if the 15th digit eventually came into use) they would find it impossible without having the number broken down into smaller groups. To aid the user, telephone numbers are usually broken down into logically significant groups of digits such as the European corporate network access code (including the international prefix), the corporate network identity and finally the number identifying the specific addressable entity e.g.:

(00) 3885 272 52273456.

This grouping is used both when numbers are written or spoken. It has a clear benefit in aiding the user to read the digits from the page or store them in memory. In addition, where these groups of digits are very familiar e.g. the international prefix and, in the future perhaps, the European corporate network access code, they may be treated as discrete "chunks" rather than individual digits by the user's short-term memory. It is also common practice to further divide logical blocks of the number into shorter groups:

e.g. 52273456 might be presented as 52 27 34 56.

This again can improve the ease with which the number can be read from the page. In some cultures, users have become accustomed to remembering groups such as "double two", which would be memorized as a single chunk, and grouping into regular groups of two digits may interfere with this, e.g. in grouping a number as 52 27 the user is unlikely to spot the repeated digit 2 which might be more easily memorized as "five double-two seven".

When the ESN is structured, the domain identity should be shown as a contiguous group of digits and the remaining digits (the domain specific number) should be separated from the domain identity and formatted according to the standard rules for the formatting of ESNs.

In order to minimize user difficulties and possible errors, the requirements for presenting public or Corporate Network ETNS numbers in written or spoken form are:

1) When presenting ENs the international dialling prefix and the European CC or European Corporate Network Access Identity, they shall be grouped together as a single block of digits without using the brackets commonly placed around the international prefix e.g. 00388 or 003885. This will emphasize that ETNS services shall always be dialled using the international dialling prefix. This presentation that also omits brackets around the international prefix may also reduce user concerns that the ETNS call will automatically be charged at a potentially high international charging rate.

2) The European Service Code (ESC) or Corporate Network Identity shall be presented as a single block of digits e.g. 234 or 5234.

3) Where the ESN is structured, the domain identity shall be presented as a contiguous group of digits separated from the ESC or Corporate Network Identity and from the domain specific number.

4) The ESN or domain specific number shall be divided into groups of 2, 3 or 4 digits, e.g. 123 4567 or 12 34 56 78 except where the conditions of point 4 below can be shown to apply. The exact combination of these digit groups will be determined according to the number of digits remaining. This structuring shall be considered as part of the allocation of the ESI.

NOTE: Where an ETNS service subscriber wishes to use a memorable but non-standard structuring of the subscriber number, the ETNS service subscriber may, during the allocation process, propose that this structuring is used.

6 Migration to a global numbering scheme

It is possible that a service implemented as an ETNS service may at a later date be migrated to a global service numbering scheme. There are two options for how such a migration could be implemented.

The first option is for the whole ETNS number to be added after the new global service CC. In subclause 4.1.3, it is shown that the number length can be constrained to 12 digits and still meet the requirements of up to 100 services and up to 10 million subscribers. If the maximum number length for an ETNS number were restricted to 12 digits this would still lead to a situation where the number length would be increased by 3 digits to a minimum of 15 digits. Such a long number (as a minimum) is clearly not very desirable for service users e.g. "388 5 service number" would change to "nnn†388 5 service number".

The second option is to embed the European Service Number (ESN) in the Global Service Number (GSN) and add it after the global service CC. This assumes that the GSN is longer than the ESN. An additional digit might need to be added in front of the ESN to form the GSN but this would still mean that the number length could be kept to a 12 or 13 digits (minimum).

Both options retain significant parts of the original ETNS number, which will aid users. Both schemes introduce a new global service CC to the user, which will be something new and unfamiliar for them to learn. The second option is far better from a Human Factors (HF) perspective because of the much shorter number length, with the advantages outlined in subclause 5.1.

The difficulties of migrating corporate network numbers to a global scheme are the same as for public network numbers. They will, however, be at the longest end of the range of number lengths and hence they are likely to be the most difficult for users to deal with if migrated to a global numbering scheme.

7 Number portability issues

Number portability for ETNS services has been defined as a feature that allows a customer of an ETNS service to change the provider of this specific service retaining the same ETNS number (see TR 101 073 [5]). This definition does not allow changes between different ETNS services whilst retaining the same number.

7.1 Consistent charging

It is an important HF requirement that the calling party's ability to determine the charge of a call should not be affected by a change of ETNS service provider for an ETNS number. The following option shall be used to meet the consistent charging requirement:

- the mechanisms for apportioning costs between the various parties (calling party, customers, ETNS Service Providers, network providers, etc.) shall result in the charge to the calling party remaining the same no matter which ETNS service provider is used by the called party.

7.2 No change for calling party

Given the fact that charging to the calling party will not be affected by the change of ETNS Service Provider, the calling party does not need to be aware that the change has taken place. This viewpoint avoids valueless information being communicated to the calling party resulting in the overuse of the limited means of user feedback (e.g. tones, messages, etc.).

Calling parties, when calling numbers that has been moved to an alternative ETNS service provider, should not encounter any changes that adversely affect the user interface that they experiences. Examples of such changes include:

- a restriction or limitation of supplementary services;
- confusion or lack of comprehension of tones or announcements (see TR 101 041 Parts 1 and 2 [6]).

A change of ETNS service provider shall not cause a reduction in the usability of the ETNS service. The ETNS subscriber shall be responsible for demonstrating that no reduction in usability has taken place.

7.3 ETNS subscriber privacy

For privacy reasons, the ETNS subscriber may also require that a change of ETNS Service Provider supporting its ETNS number will not be identified by the calling party. Requirements in subclauses 7.1 and 7.2 satisfy this requirement.

8 Identification of ETNS services

In ETNS services where the ETNS subscriber is the called party, the European CC acts as a very clear signal to the calling party of that service that the number containing it is an ETNS service.

In ETNS services where the calling party originates a call from an EN (e.g. European Personal Services), it is important that the CLI correctly identifies the ETNS service. This leads to the following requirement:

- CLI information presented to the called party shall be the calling party's ETNS Number and not the telephone number of the location from which the telephone call originates.

CLI for ENs may be significantly different from CLIs for national calls. The issues surrounding such differences needs to be understood and require additional detailed study with respect to signalling, number presentation, CPE etc., prior to any service offering being made COM(96) 590 [7].

Emergency services need to be able to identify the physical location of the calling party. This leads to the following requirement:

- Emergency services shall be provided with a means to determine the physical location of the calling party. In many cases, access to the geographic telephone number of the calling party may be an appropriate means of obtaining this information.

9 Identification of charging

With the increasing diversity of ETNS services and special charging regimes on offer, it is getting increasingly difficult for calling parties to identify what the call charging rate will be from studying the number. In the longer term there may need to be different ways of indicating call charging rates to calling parties, but for now it is still possible to make some use of the number structure.

At present there is one fairly universal rule, that any calls preceded by an international prefix will be charged at a different and usually higher international charge rate. ETNS numbers will always need an international prefix. However, different services will be charged at potentially very different rates - some possibly as high or higher than international rates and some significantly lower. If calling parties are able to identify:

a) that the service is an ETNS service;

b) what type of service it is;

they may be able to infer the appropriate charge rate. If calling parties mis-identify the call as an ordinary international call, they will almost certainly be incorrect in their inferred charge. It is thus important that the calling party can clearly identify the type of service and that the service is an ETNS service. Various numbering options that improve the clear identification of ETNS services have been discussed in subclause 5.2.

10 Routeing delays

A very diverse range of routeing options may exist for ETNS services. These are too diverse to list in the present document, but it is possible to identify two usability criteria that can be used in evaluating the merits of the different routeing options. These usability criteria are:

a) Call set-up times should not be made unduly long as a result of very complex routeing methods;

b) The variability of call set-up times should not be too great.

Many of the routeing options involve passing the numbering information from one country to another and they may also involve several stages of number translation. Although modern digital telecommunications systems typically perform routeing operations very quickly, a succession of these may still take some time. These delays would mean that it would take a longer time before tones were returned to the calling party.

There is no HF imperative for a zero length call set-up time as this can cause users of certain terminals such as mobile telephones to fail to hear the start of the called party's response. However, long post-dialling delays before the return of a tone or message to calling parties may lead them to become impatient and, after longer post-dialling delays, they may abandon the call attempt because they presume that the call has failed.

A high level of user impatience is likely to give a very adverse impression of the called service even where calls are not abandoned. Prematurely terminated call attempts are likely to lead to undesirable repeat call attempts as well as causing very adverse user perceptions of the called service.

Where a tone or message can be returned, prior to receiving a genuine indication of call disposition, users may be prepared to tolerate longer post-dialling delays - dependant on the importance of the call and the effectiveness of the tone or message in implying the potential for a successful outcome. An example of where such a message might occur is when a call divert is in operation and a message informs the calling party that there will be a further delay before the call is connected. Nevertheless, impatience and call abandonment will still occur as the post-dialling delay increases.

Caller's tolerance to post-dialling delay has been shown to be dependant on the type of call being made [8] - with callers being tolerant of slightly longer post-dialling delays for long-distance calls when compared to local calls. Callers have no expectation for the length of time it takes to set-up a call to an ETNS number. Although the number the caller dials is in the format of an international number (see clause 5), it is important that callers perceive the calls to be similar to local or long-distance calls if the socio-political objectives of an ETNS are to be realized. As such, the post-dialling delays when dialling ETNS calls should not be significantly different from those experienced when currently dialling local or long-distance calls. The requirements on post-dialling delay set in the present document are based upon taking the mean of figures for local and for long-distance calls found in [8].

It is possible that if routeing options cause some calls to be routed via more than one country and some to be routed within the calling country, the variability of the post-dialling delays might be very great. This would mean that each different service might have a different post-dialling delay and that there might also be scope for delay variations even within one service. Significant post-dialling delay variability may increase the adverse effects due to excessive post-dialling delay. In call set-up, this effect should not be great if the delay criteria set out below are met.

Defining 98,5 % limits on post-dialling delay provides a method of setting limits that are comparatively independent of the mean value of the post-dialling delay distribution [8]. The following requirements should lead to acceptable routeing delay effects:

- Post-dialling delays shall not exceed 7 seconds for 98,5 % of all ETNS calls under normal network load conditions. Where a meaningful tone or message is returned to the calling party prior to any message or tone indicating call disposition, the 7 second limit may be raised to 7,5 seconds.

- Where significant variability of post-dialling delay exists, the above requirement shall still be met to ensure that user reaction to the service is maintained at an acceptable level. This may mean that the mean post-dialling delay may need to be lowered to allow the 98,5 % criterion to be met.

ETNS service providers shall incorporate features in their services that provide feedback to calling parties to minimize the adverse effects of post-dialling delays that fall outside the 98,5 % limits contained in the above requirements. Guidance on the provision of feedback to telephone users is provided in ETR 116 [9].

11 Handling languages within ETNS services

At present services such as television shopping channels often advertise a range of different numbers to access the service from different countries. Although this is often necessitated by the technical restrictions that the lack of an ETNS brings, it does make it very easy to offer the majority of callers a service in the language that they understand.

It is clear that certain services that do not depend on language, such as pure data transport services, will be easy to implement Europe-wide. It is also likely that the ETNS will provide a simple direct benefit to corporations trying to deploy corporate networks, as addressing cultural and linguistic differences is already an inherent factor in the day-to-day running of multi-national European corporations.

Although innovative service design should remain the preserve of ETNS service providers, it is necessary to ensure that unsuitable design solutions are avoided in order to ensure that ETNS services are able to reach their full potential. Requirements are listed that put constraints on the way in which basic language handling methods should be used.

One basic method is to select the service language according to the CC of the originating call (based on the CLI). This option has some limitations:

- the person accessing the service may only be visiting the country and may speak a different language;

- the total range of languages that would need to be supported (by human operators or software systems) is impracticably large.

Many countries have a number of different languages and hence the language might not suit the caller. The selection of service language based on the CLI of the calling party shall not be used as the sole method for selecting the language used in service messages. This method of selecting the language may be used for selecting the language for initial service messages where an alternative method by which the users of a service can select their preferred language is also provided.

Another method is where the calling party selects the service language after accessing the service by means of an auditory menu system. This method can significantly add to the complexity and inefficiency of the user interface to the service. This increased complexity may annoy customers and may cause them to experience difficulties in using the services.

Another limitation of using a menu for language choice is that the menu itself must either be presented in a single language which may be unfamiliar to many users or, each menu choice will have to be described in each language, one after the other. Neither of these options are very attractive.

If only a very limited range of languages, say 3, were supported the auditory menu option might be more acceptable. If the number of languages is greater than 6 the user interface will be very annoying to users.

Auditory language selection menus shall not be used when the number of languages is greater than 6. The guidelines contained in ETR 329 [10] shall be used in the design of any interactive language selection mechanism.

The last basic method for dealing with multiple languages is to use a separate service number for each different language. The offering of a range of different service access numbers covering only the most common European languages is a potentially very simple method for the calling party. Although similar to the present implementations used by television shopping channels, the ETNS service provider would no longer need to provide different numbers for countries that shared a common language and customers could select a number that suited them no matter which country they were calling from. The only problem with this solution is that it uses up the total range of service numbers at a much higher rate than either of the alternatives.

12 Usability testing

As candidate technical solutions for implementing an ETNS emerge it will become essential to evaluate the possible impact on potential users of accessing and using these services. As the Green Paper on a Numbering Policy for Telecommunications Services in Europe [11] states:

> "Furthermore, users must be closely involved in the formulation of a long-term numbering strategy for Europe, and where changes are necessary, a proper assessment must be made of both the costs involved and the benefits which will follow for both business and consumers".

Exactly the same situation exists for the ETNS.

In the present document a number of HF requirements have been stated. Compliance to these requirements alone will not guarantee that ETNS services are usable and useful. Prior to the design and implementation of an ETNS it is impossible to assess the impact that specific design decisions might have on the usage of ETNS services. For this reason it is necessary to incorporate a usability assessment of the ETNS within an ETNS test programme.

A usability test plan shall be produced prior to implementation of an ETNS. This test plan may be drafted in such a way that usability tests may be incorporated within the testing of the ETNS that was required by the ITU when allocating the 388 CC. The tests described in the usability test plan shall be carried out on each trial of an ETNS as well as on the final version of an ETNS.

13 Compliance

The present document contains a number of requirements. The requirements are fully described in the preceding clauses and subclauses of the present document and these descriptions represent the definitive mandatory requirements. The clauses and subclauses give further explanation of why the requirement is made.

For ease of compliance checking, the basic requirements are summarized below together with a reference to their location in the present document.

The following requirements are unique to the present document:

1) When presenting ENs the international dialling prefix and the European CC shall be grouped together as a single block of digits without using the brackets commonly placed around the international prefix (see subclause 5.2).

2) The ESC or corporate network identity shall be presented as a single block of digits (see subclause 5.2).

3) Where the ESN is structured, the domain identity shall be presented as a contiguous group of digits separated from the ESC or Corporate Network Identity and from the domain specific number (see subclause 5.2).

4) The ESN or domain specific number shall be divided into groups of 2, 3 or 4 digits, except where the conditions of point 5 below can be shown to apply. The exact combination of these digit groups will be determined according to the number of digits remaining. This structuring shall be considered as part of the allocation of the ESI (see subclause 5.2).

5) The mechanisms for apportioning costs between the various parties (user, customers, ETNS service providers, network providers, etc.) shall result in the charge to the user remaining the same no matter which ETNS service provider is used (see subclause 7.1).

6) A change of ETNS service provider shall not cause a reduction in the usability of the ETNS service. The ETNS subscriber shall be responsible for demonstrating that no reduction in usability has taken place (see subclause 7.2).

7) CLI information presented to the called party shall be the calling party's ETNS number and not the telephone number of the location from which the telephone call originates (see clause 8).

8) Emergency services shall be provided with a means to determine the physical location of the calling party. In many cases, access to the geographic telephone number of the calling party may be an appropriate means of obtaining this information (see clause 8).

9) Post-dialling delays shall not exceed 7 seconds for 98,5 % of all ETNS calls under normal network load conditions. Where a meaningful tone or message is returned to the calling party prior to any message or tone indicating call disposition, the 7 second limit may be raised to 7,5 seconds (see clause 10).

10) Where significant variability of post-dialling delay exists, the above requirement shall still be met to ensure that user reaction to the service is maintained at an acceptable level. This may mean that the mean post-dialling delay may need to be lowered to allow the 98,5 % criterion to be met (see clause 10).

11) ETNS service providers shall incorporate features in their services that provide feedback to calling parties to minimize the adverse effects of post-dialling delays that fall outside the 98,5 % limits contained in the above requirements (see clause 10).

12) The selection of service language based on the CLI of the calling party shall not be used as the sole method for selecting the language used in service messages. This method of selecting the language may be used for selecting the language for initial service messages where an alternative method by which the users of a service can select their preferred language is also provided (see clause 11).

13) Simple auditory language selection menus shall not be used when the number of languages is greater than 6 (see clause 11).

14) The guidelines contained in ETR 329 [10] shall be used in the design of any interactive language selection mechanism (see clause 11).

15) A usability test plan shall be produced prior to implementation of an ETNS. This test plan may be drafted in such a way that usability tests may be incorporated within the testing of the ETNS that was required by the ITU when allocating the 388 CC (see clause 12).

16) The tests described in the usability test plan shall be carried out on each trial of an ETNS as well as on the final version of an ETNS (see clause 12).

These requirements are not unique to the present document but are extracted from other ENs:

17) The ETNS shall be designed to have a minimum of 100 services and a potential of 10 million subscribers per service if required.

18) The total length of the number shall not exceed 15 digits.

19) An ESI shall begin with the CC allocated to the ETNS.

20) There shall not be any indication of ETNS service provider in the ESI.

History

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