5i’

SECTION 3

GENERAL PROVISIONS CONCERNING USERS

Recommendation E.120

INSTRUCTIONS FOR USERS OF THE INTERNATIONAL TELEPHONE SERVICE

Preamble

This Recommendation outlines the principles and guidelines for Administrations in the preparation of user instructions.

The growth of the worldwide telephone network emphasizes the urgency to improve customer performance when using telecommunications services. The absence of clear and up-to-date information and instructions for users of the worldwide telephone service can only result in a low degree of customer satisfaction and unnecessarily high costs to Administrations. Consequently, Administrations are urged to promote, through the use of this Recommendation, progress towards the adoption of the guidelines which follow.

1 General principles

1.1 Up-to-date comprehensive instructions should be made readily available to users of the public telephone service , by Administrations.

1.2 The objective of such instructions is to allow customers to complete calls themselves to the maximum extent possible and reduce errors in the use of the international network, thus:

— assisting the user and providing greater satisfaction on his part,

— effecting significant cost savings by Administrations through more efficient use of the network.

1.3 On this basis, the full availability of current instructions should be considered as equally important as the overall planning, provisioning, operating and maintaining processes, the costs of which are a normal and inherent part of the supplying of good telecommunications service.

1.4 Established instructions provided by Administrations should be evaluated on a regular and continuing basis with a view to their improvement. Observations of service quality, studies of customer calling difficulties, questionnaires, customer comments, laboratory experiments, and any other means which may be available or practicable should be considered the normal tools for furnishing good instructions.

Other Recommendations which should be considered in this respect are: E.115, E.121, E.122, E.123, E.126, E.127, E.128, E.160, E.161.

1.5.1 The introduction of new services shall include clear and easy to use instructions for use by the customer. These instructions constitute a normal part of the introduction of these services.

1.5.2 Every effort should be made to test the effectiveness of instructions before issue and then to promote and promulgate on an international basis those proven to be most effective in practice, with due regard to the needs of different countries.

1.5.3 Design of instructions should play a key role in the development of proposed new services, from the customer point of view, rather than being considered belatedly in operational and hardware decision making and manufacture.

1.5.4 Optimal instructional practices as proved in service might be made available to all interested Administrations in order to improve customer performance and effect significant cost savings.

2 Instructions

2.1 The most common means of providing a range of instructions and information to customers for the effective use of the telephone service is through the medium of printed *public telephone directories* issued on a general basis by Administrations.

2.2 In addition, these printed instructions should normally be placed in public places for use by customers, such as public telephone booths and post offices.

2.3 Further instructions for specific purposes may be issued to users, for example:

— dialling instruction booklets,

— dialling code booklets,

— operating procedure booklets (for supplementary services),

— personal telephone directories,

— other telephone guide books (multilingual), pamphlets or cards of a specialized nature.

2.4 Access to spoken instructions can be provided through the provision of operators or recorded announcement machines dedicated to this activity; one aim should be to reduce to the greatest extent customer references to the operator assistance service.

2.5 Specialized instruction can with advantage be given through the medium of inclusion in school curriculums, radio broadcast and television transmissions, other printed media and special public presentations for the purpose of improving customer performance.

3 Public telephone directories

3.1 *Public telephone directories* are published regularly by Administrations as the most common means of informing customers of service numbers which are generally available for public use, instructions on use of the service, and easy to find current customer telephone number listings. It is recognized that the layout of directories is governed by considerations which may vary from country to country; however, it is desirable that such lists of subscribers should be capable of ready consultation by the Administrations and/or subscribers of other countries. To this end, similarity in sequence and presentation of directory information should be regarded as a desirable international objective to be achieved within the constraints of language differences.

3.2 Such information can be conveyed by words, pictograms and internationally standardized symbols, the basic need being to impart clear information to the caller (see Recommendation E.121). It would be very useful, in order to encourage the use of the international telephone service, if directories (especially those supplied to other Administrations and/or to subscribers of other countries) were composed in roman characters, particularly those relating to the names and addresses of subscribers.

3.3 Public telephone directories may cover a single numbering plan area, or several numbering plan areas on an exchange or geographical basis or portions thereof based on a community of interest and are issued free of charge to subscribers in these areas.

3.4 They may be published as a single volume or as groups of volumes, keeping in mind the need for brevity and simplicity, regular editing and up-to-date publication, consistency between volumes, for maximum readability and ease of use by the customer. Each volume of the lists of subscribers could usefully contain a recapitulatory list of the subdivisions mentioned in the volume, or an equivalent chart.

3.5 Language difference on the part of residents and foreign visitors is an important factor to be considered in the publication of public telephone directories. Multilingual information, when included, should be well presented so that those who have partial knowledge of, or no language of the country are not deterred from using the service.

3.6 To avoid difficulties in the interpretation of instructions due to language differences, the harmonization of the General Information pages in the telephone directory must be continued. In these pages, instructions are clearly and concisely given by means of recommended symbols and pictograms and by graphical representation of the operational procedures of the telephone service (see Recommendation E.126).

3.7 Moreover, with a view to reducing the difficulties experienced by foreign visitors in consulting the first pages of the telephone directory, some of these pages should contain a summary of the essential information in different foreign languages with references to the full text of the instructions given in the ‘‘General Information pages’’ in the national language (see Recommendation E.127).

3.8 Public telephone directories should be subdivided into at least two basic parts easily recognizable, for example by means of different coloured pages (for example, pink for instructional pages and white for customer telephone number listings). Page edge-marking or intercover publicity are other alternatives.

3.8.1 Call guide instructions for users should consist, for example, of the following, in order of priority:

— index;

— emergency call numbers (police, fire, ambulance, language service, etc.);

— service department codes and operator assistance numbers;

— how to dial;

— local dialling instructions with lists of exchange or geographic place names, codes, maps of area coverage and applicable charges if any;

— national long-distance dialling instructions, with lists of place names, long-distance prefixes, area codes, maps and details of call charges;

— international long-distance dialling instructions, with international prefixes, country codes, area codes and details of call charges, etc.;

— how to use the directory;

— general information which the Administration may feel useful or important to the user;

— examples drawn from Recommendation E.123 to illustrate the standard national and international notation for telephone numbers, to facilitate understanding of the composition of international numbers;

— numbers of the administrative services of Administrations, their addresses and enquiry points;

— list of codes and telephone numbers of the telephone services which are available, together with recommended symbols to assist foreign visitors.

3.8.2 *Customer listings*

— Alphabetical lists in black print on white pages of subscribers (surname, given names or initials and postal address) either by numbering plan, exchange or geographical area (or combinations thereof) with an appropriate identification in heavier type at the beginning of the list and at the top of each page and/or column.

— Listings belonging to another directory area including those of other countries should be easily distinguishable, and show the appropriate information in order that a call can be completed.

— Alphabetical lists may be split where desired, into residence and business listings.

3.8.3 The instructional pages should precede the customer listings.

3.8.4 Where there is a need for more than one language in a country, colours or other means of differentiation may be used as appropriate in the instructional pages.

3.9 The same directory may contain sections other than the alphabetical list of subscribers, but these sections may equally be published as a separate volume or volumes, for example:

3.9.1 *Classified listings* (Yellow pages)

— a classified business trade and professional section in alphabetical order, followed by names in alphabetical order under the respective headings, together with address and telephone number.

3.9.2 *Services promotion* (Green pages)

— a section or filler pages to allow the Administration to illustrate services it wishes to sell, or makes available free of charge, and provide instructions for specialized instruments which may be connected to the network, in addition to other information (e.g. postal or telegraph information, PBXs, telex or data services). Photographs, recommended pictograms and symbols could be used, particularly to help foreign visitors to take advantage of the services.

3.9.3 Optional classified listings and service promotion sections should follow the instructional pages and customer listings so as not to negate the basic nature of the latter, from the users' point of view.

3.10 It is desirable that the effectiveness of the existing public telephone directories should be tested periodically in order to improve customer performance in the use of the network.

3.11 The front cover or the first pages of each book of a directory, or each section of a directory, should preferably be used to emphasize important information such as emergency numbers although these may be also listed elsewhere.

3.12 Other information deemed important by Administrations, for example national laws or regulations, billing information, etc. might be placed on the back pages or spare pages due to the binding process. These pages might also be used for personal notation of telephone numbers to increase the value of the directory from the users' point of view.

3.13 Administrations may wish to consider the use of staff dedicated to the improvement of directory listings, resolution of particular listing problems and which can ensure a source of additional revenue (e.g. additional listings).

3.14 Recommendation E.114 outlines the conditions for supplying lists of subscribers (by directories and other means) to other Administrations.

4 Public telephone booths

4.1 Public telephone booths should preferably be identified externally with the applicable internationally approved symbols, particularly at locations frequented by tourists.

4.2 In addition, they should be equipped with public telephone directories relative to the areas in which they are located and associated calling instruction booklets as appropriate.

4.3 Public telephone booths should, as necessary, prominently display notices listing exchanges which can be reached without dialling the full national number. Lists of dialling codes, particularly those most frequently used should also be displayed to reduce enquiries to operators to the minimum.

4.4 Public telephone booths should display relevant pictograms and symbols to instruct customers on how to place national and international calls, to obtain assistance from operators, or to place calls to emergency numbers (fire, police, etc.). (See Recommendation E.121.)

4.5 Administrations should preferably display instructional information in more than one language and give careful consideration to the use of several languages for maximum assistance, particularly in call offices and transport terminals where foreign visitors can be expected and so help reduce costly operating assistance services.

Harmonization of the human factor aspects of payphones may be an efficient means not only of ensuring the correct use of payphones in the international telephone service but also of obviating the need for different instructions to foreign visitors, which may become virtually superfluous in the future.

4.6 Similarly, instructional information regarding other services provided by the Administration may be posted.

5 Instructional information for specific purposes

5.1 Considering the scope, size and normal availability of public telephone directories, the ease and need of travel by users, the increasing use and reliability of telecommunications and the lack of knowledge on the part of foreign visitors, then personalized instructional information should be made available.

5.2 This generally takes the form of personal *pocket information* issued to new customers, either residence or business, heavy users, or generally available upon request. Such information includes:

— dialling instruction booklets,

— dialling code booklets,

— operating procedure booklets,

— personal telephone directories,

— other telephone guide books, pamphlets or cards.

5.3 Administrations should consider making appropriate information available to foreign visitors and to their customers who plan to visit other countries or who otherwise have a need. This might be arranged and exchanged on a bilateral basis for mutual benefit.

5.4 Careful attention should be directed to publishing instructions in more than one language to ensure as wide a use as possible. The use of appropriate pictograms and symbols of the recommended design would assist the customer in unfamiliar situations (see Recommendation E.121).

5.5 Dialling instruction booklets are published to facilitate the placing of national calls and international calls. Ideally, instructions for both should be in the same booklet and should be essentially the same as provided in public telephone directories.

Since the characteristics of payphones at present differ from one country to another, detailed instructions should be provided for identifying payphones, for making national and international calls correctly from them and for correctly paying for the calls.

5.6 Dialling code booklets should similarly list the appropriate codes for national and international calls, in separate sections of the same booklet.

5.7 Operating procedure booklets may be essentially the same as dialling code booklets but include appropriate control procedures for special services which the customer may want to use, preferably of an internationally standardized nature.

5.8 Special cards or specialized leaflets may also be made available to illustrate, for example:

— dialling codes or instructions for foreign visitors on how to make national and international calls;

— tones which may be encountered in dialling national or international calls, illustrated by pictograms or internationally standardized symbols;

— use of particular services that are available or whose proper use should be encouraged;

— practical or helpful hints to foreign visitors regarding any aspect of the service;

— guidance to travellers telephoning home from abroad (see Supplement No. 6 at the end of this fascicle).

5.9 The above-mentioned leaflets and Supplement No. 6 should so far as possible be combined, provided that this arrangement is convenient for users (see Recommendation E.128).

5.10 Personal telephone directories can be particularly useful to users for their notation of particular or frequently called numbers. Administrations could consider the inclusion of a minimal amount of key instructional information.

5.11 Administrations are encouraged to establish and maintain close liaison with other countries' tourist boards to ensure that current information about its services is available to prospective visitors in suitably translated form.

6 Instructions by operators or recorded announcements

6.1 Correct dialling instructions can be given to customers as required in the process of placing a call, by special intercept operators or recorded announcements dedicated to that type of instruction.

6.2 This may be given in more than one language, or the customer directed to an appropriate language operator for assistance. Inferred is special training on the part of the operators.

6.3 Recorded announcement machines may be employed on a public basis, where feasible, to which users could be encouraged to call for instructional information (e.g. demonstration of foreign tones or announcements, etc.).

6.4 To aid in a clearer understanding of the world's telephone system, a verbal announcement used within the various networks should preferably be interleaved with the special information tone (SIT).

Note — This tone is internationally standardized and designed to invite a calling subscriber to get in touch with an operator in his country when he cannot understand a message aurally received.

6.5 It is paramount that if recorded announcements are used, the words should be chosen with extreme care to avoid customer confusion.

7 Specialized instructions

7.1 Administrations may choose to employ specialized instructions in a formal manner through other media for example:

— educational programmes in elementary or more advanced school curriculums,

— educational programmes and aids for teachers,

— radio broadcasts or television transmissions of instructional information, exclusive of advertising,

— presentation of instructions through newspapers or magazines,

— film presentations to private groups, or to larger public groups in cinemas,

— presentations at local, national or international exhibitions,

— special inserts with customer accounts,

— special leaflets for restricted or wide distribution,

— special classes on customers', or Administration, premises (e.g. PBX or Centrex users, etc.),

— change of number postcards and letterhead stickers for individual subscriber use, etc.

For the training of future users, who may become an increasingly important part of worldwide telecommunications customers, some of the above items may be applicable.

7.2 Some such programmes may be more effective than others and while efficacy may be difficult to determine, evaluation is an important aspect towards optimum instruction at least cost.

Recommendation E.121

PICTOGRAMS AND SYMBOLS TO ASSIST USERS OF | THE TELEPHONE SERVICE

1 General definitions and guidelines

1.1 *Definitions*

pictograms and symbols convey information in pictorial form. They are widely used in the telecommunication field to denote specific types of equipment and services and to instruct people in the use of such equipment and services.

A pictogram is a simplified pictorial representation. It is commonly used to guide people and tell the person *how* to achieve a certain goal. It consists of more or less realistic elements. Pictograms should be self-explanatory.

A symbol is an abstract pictorial representation; it commonly stands for something and tells a person *what* he is faced with. It is not necessarily realistic and often requires a learning process in order to be understood.

There is not always a sharp distinction between pictograms and symbols. Pictorial representations can be placed on a continuum with on the one end realistic pictograms which can be readily understood and on the other end abstract symbols which are difficult to understand without prior learning.

1.2 *Pictograms and symbols as an alternative to written text*

Advantages of pictograms and symbols as compared with written text are:

— independence of language;

— greater efficiency in denoting direction and other special attributes;

— greater spatial compactness;

— faster visual perception;

— more eye-catching.

Disadvantages of pictograms and symbols as compared with written text are:

— less efficiency in conveying detailed information;

— greater risk of incorrect interpretation;

— for abstract symbols, the need of some prior learning in order to be correctly understood.

Pictorial representation of an abstract concept should only be used instead of written text if the user can be assumed to have adequate opportunity for learning (for instance through frequent usage).

To prevent incorrect interpretation, pictograms or symbols may be accompanied by supplementary text. This is especially advisable if correct interpretation could be of vital importance to the user. An additional and important advantage of supplementary text is that it facilitates the learning of symbols and pictograms.

1.3 *Guidelines for design*

The idea for a pictorial design for a particular application should, whenever possible, be based on the user's mental picture of that application.

Realistic pictograms are more self-explanatory and require less learning than abstract symbols. Hence, whenever possible, the designer should aim at realistic representation.

To achieve fast visual recognition, a pictogram or symbol should be as simple as possible and it should be easily distinguishable from other currently used pictograms and symbols.

The design of a consistent set of symbols should be guided by a few unambiguous rules about the meaning of pictorial elements within a particular application and the relationship between these elements (see, for example, § 2.5.3). The set should not be larger than strictly necessary; a maximum of three different elements is recommended.

The design of pictograms and symbols should meet the technical requirements of their application. If they are to be displayed on the individual keys of a keyboard or on a VDU screen, their design should allow this without essential modification. In both these cases they should be easily recognizable from a distance of 50 cm.

1.4 *Guidelines for testing*

To find the most suitable symbol or pictogram for a particular application, it is advisable that a number of different designs be generated and submitted for testing.

The method of testing a pictogram or symbol should depend on its intended application. If the application offers little or no opportunity for learning, the test should determine the degree of correct recognition without prior learning. If the application allows prior learning, the test should determine how many trials are needed to arrive at a previously determined criterion of correct recognition. If a pictogram or symbol is to be used in conjunction with other pictograms or symbols, it should be tested within the context of these other symbols of pictograms (see, for an example, Annex A).

1.5 *Standardization*

Great advantages accrue when the meaning of symbols and pictograms becomes common knowledge. It follows that standardization is desirable, especially when such standardization can be in conformity with existing standards produced by other standards organizations.

1.6 *Design specifications*

The styling, size, colour and position of each recommended symbol or pictogram is left to the discretion of the Administration. Each symbol or pictogram should, however, bear a close perceptual similarity to those shown in this Recommendation.

Figure titles for Figures 1/E.121 through 4/E.121 and 7/E.121 give those pictorial elements which are considered essential. Symbols may be contained within a suitable frame or border.

2 Specific recommendations

2.1 *Symbol for telephone*

A symbol for telephone may be used:

a) in place of the word telephone;

b) as an adjunct to a telephone number ;

c) to indicate a place where telephone calls can be made;

d) to refer to the telephone service in general.

When such a symbol is used, it should be a representation of a telephone handset. The symbol given here (Figure 1/E.121) is similar to the one cited in [1] and those commonly found on road traffic signs and in railway stations

Figure 1/E.121, p.1

2.2 *Symbol for information*

A symbol for information can be used in telephone directories , in lists of relevant telephone numbers shown in telephone booths, in other places where information via the telephone can be given, or in printed information for foreign visitors. It may also be used in association with several telephone (service) numbers. It may be used to draw attention to:

a) general telephone service information ;

b) information about national or international telephone numbers;

c) assistance in foreign languages ;

d) information about hotels, theatres, etc.

When such a symbol is used, it should consist of the letter i (lower case) as shown in Figure 2/E.121. The symbol may be contained within a suitable frame or border. Since this symbol is a general reference, it should be associated with appropriate words or other symbols to show the nature of the information provided at the corresponding telephone number. For example, the symbol ‘‘telephone’’ for general telephone inquiry and the words ‘‘English’’, ‘‘Deutsch’’, ‘‘Fran,cais’’ for assistance in foreign languages.

Figure 2/E.121, p.

2.3 *Symbols for emergency numbers*

In some countries a general emergency number is available to be dialled in all emergency situations. In other countries different telephone numbers are used for each emergency service such as fire brigade, ambulance or police. Where a symbol is used to indicate the general emergency number, that symbol should be ‘‘SOS’’ as shown in Figure 3/E.121. Where no general emergency number exists, the symbol may be used to draw attention to the list of emergency numbers.

Figure 3/E.121, p.

The symbols shown in Figure 4/E.121 may be used in cases where different symbols are required, possibly in combination with Figure 3/E.121.

Figure 4/E.121, p.4

Administrations may judge it necessary to test these symbols in the context of other, nationally used, symbols. Annex A provides a method for such a test.

The three symbols in Figure 4/E.121 were selected by means of an international experiment performed in eight countries. Altogether, 364 subjects participated in this experiment. The results of this experiment show a remarkable consistency in the results from the eight countries.

2.4 *Graphical representation of audible tones*

2.4.1 A graphical representation of audible tones in instructions is recognized as a means, in addition to a verbal description, that could aid telephone users to interpret them correctly during the process of setting up a call. The definition of principles for a graphical representation which would guarantee the maximum aid to users has been studied during the Study Period 1977-1980. Certain experiments designed by Working Party II/2 have been carried out with the participation of the following countries: Australia, Canada, Denmark, the Netherlands, Nigeria, Norway, Sweden and the United Kingdom.

2.4.2 An additional study has been done during the Study Period 1981-1984 in the United Kingdom. This study supported results of earlier studies.

2.4.3 Audible tones known to exist at the present time in various national networks can be characterized by the following factors:

— temporal structure,

— pitch,

— tone quality or timbre (subjectively felt by the users and related to the spectral complexity),

— loudness.

These four factors should be graphically represented according to the following principles:

2.4.3.1 *Temporal structure*

This factor should be represented by appropriate blank intervals along a horizontal time axis.

For example:

Figure, (r´ecup.) p.

2.4.3.2 *Pitch variation in a tone*

This factor should be represented by the vertical displacement of a linear element above the time axis.

Figure, (r´ecup.) p.

2.4.3.3 *Tone quality*

Pure tones (sinusoidal waves) should be represented by linear elements on a horizontal axis.

Figure, (r´ecup.) p.

If non-pure tones consist of two frequencies, the optimal representation depends on the frequency difference between the tones. This frequency difference may be greater than the critical bandwidth (consonant tone-pairs) or smaller (dissonant tone-pairs) [2]; for consonant tone-pairs , the optimal representation is two parallel linear elements; for dissonant tone-pairs , a wavy line is optimal.

Figure, (r´ecup.) p.

If the frequency difference between the two tones is near the critical bandwidth, neither of the representations may be satisfactory.

2.4.3.4 *Loudness variation in the tone*

This factor should be represented by variation in the thickness of a linear element.

Figure, (r´ecup.) p.

2.4.4 Intermittent tones should normally be represented by at least 2 full cycles.

2.4.5 The same time scale should be used in the representation of all tones in the same figure.

2.5 *Symbols for supplementary services*

2.5.1 Symbols may be used to designate telephone subscriber services. They may appear on subscriber equipment, e.g. on the tops of push-buttons by which these services are operated. They may also be used in instructional material name — of being independent of language. For users familiar with a certain language, the full name or a mnemonic code may be more easily understood.

2.5.2 Figure 5/E.121 shows symbols for twelve supplementary services experiments in which the symbols were evaluated (see Annex B). They are chosen in such a way that they explain the operation of the services in clear and simple terms. Where applicable, the corresponding names as they appear in Supplement No. 1 are added in parentheses, together with the relevant paragraph numbers.

2.5.3 The set of symbols recommended here is open to future expansion, if symbols for more services should be required.

The majority of the standardized symbols are based on the following guiding principles:

— a point represents a subscriber's station;

— a line between points represents a connection between subscribers;

— a dashed line represents a connection on the hold;

— an arrow represents a call:

outgoing calls .| | | an arrow away from the user ↑

incoming calls .| | | an arrow toward the user ↓

calls passing by .| | | an arrow passing by the user

Example: Basic diversion (‘‘Incoming call passes by’’) **MONTAGE**

Example: Enquiry call (‘‘First party on hold whilst calling another party’’) **MONTAGE**

— a bar (or ‘‘barrier’’) represents a ‘‘stop’’ for a call; Example: Incoming calls barred **MONTAGE**

At the time these symbols were developed and tested, the procedures by which subscriber services are operated were not yet standardized. This may lead to the undesirable situation that the same symbol is used for different procedural implementations of a service. Efforts have therefore to be made to standardize the operational procedures for supplementary services.

— a repeated action is represented by repeated symbol elements; Example: Repeat last call
MONTAGE

— ringing is represented by stylized sound waves outgoing from a point; Example: No reply diversion **MONTAGE**

The number of symbols combining these elements is limited. Therefore, for some of the standardized symbols, additional elements have had to be applied:

— a keystroke is represented by a square; Example: Short code dialling (‘‘One keystroke instead of many’’) **MONTAGE**

— A disconnection is represented by an interrupted line. Example: Disconnect **MONTAGE**

2.5.4 If manufacturers or Administrations consider using symbols which are not yet recommended, they are advised to contact the CCITT Secretariat, which will in turn contact the Special Rapporteur for the relevant Question.

2.5.5 The symbols presented in Figure 5/E.121 may also be displayed on a CRT as long as they appear closely similar to their presentation on paper. On a commonly available CRT screen, this can be achieved by using a minimum of 60 **|** (mu **|** 0 or 60 **|** (mu **|** 0 pixels per symbol.

2.6 *Pictographic instructions for payphones*

A sequence of pictograms is an effective means of instructing users of payphones , especially if certain users, e.g. foreign visitors , are not familiar with the equipment or operating procedures. Various studies on the design of pictographic instructions for payphones have led to the following guidelines:

2.6.1 If it is likely that certain users will be unfamiliar with the equipment (e.g. foreign visitors), realistic drawings showing the equipment sufficiently to locate the different parts would be helpful; where it is likely that users will be familiar with the equipment, or that locating the different elements is not a problem, less representative pictograms may be acceptable.

2.6.2 Movement (or certain actions) should be indicated by arrows. These could be provided in a different colour from the rest of the pictogram, for greater conspicuousness.

2.6.3 Movement, or actions, in a sequence of pictographic instructions, should be labelled by numbers 1, 2, 3, etc. in the appropriate order.

Pictograms can be arranged in a horizontal strip (as illustrated in Figure 6/E.121) or in a vertical column, or (provided that the numbering is clear), in a block.

2.6.4 Pictograms should be placed where they will most easily be seen by the user and, wherever possible, should be fastened to the body of the equipment. Ideally, new payphones should be designed with a space on the front specifically to accommodate the pictograms, and the larger the space allowed, the better.

2.6.5 New pictogram designs should be tested in realistic conditions on a sample of the user population before being implemented generally.

2.7 *Symbol for facsimile*

A symbol for facsimile may be used:

a) in place of the word facsimile;

b) to indicate a place where a facsimile service can be used;

c) to refer to the facsimile service in general;

d) as an adjunct to the facsimile number of a subscriber (see also Recommendation E.123, § 7).

When such a symbol is used, it should consist of the word FAX in capital letters as indicated in Figure 7/E.121.

Figure 5/E.121, p.11

Figure 6/E.121, p.12

Figure 7/E.121, p.13

2.8 *Symbol of access for the physically handicapped*

A symbol of access for the physically handicapped may be used to indicate that a public telecommunication facility such as a telephone booth is accessible to a handicapped person, particularly one using a wheelchair.

The symbol to be used for this purpose is the symbol in Figure 8/E.121. This symbol has been adopted for international standardization in a resolution of the l978 assembly of Rehabilitation International. For specific regulations regarding the design and application of this symbol, it is recommended that Administrations contact their national member organization of Rehabilitation International or the central office of Rehabilitation International, 25 East Street, New York, 10010, USA.

Figure 7/8.121, p.

2.9 *Symbol for special facilities for the deaf and hard of hearing*

A symbol for special facilities for the deaf and hard of hearing may be used to indicate that a telecommunication facility such as a public telephone has been specially adapted for the deaf and/or hard of hearing. Such special facilities may consist either of amplification or of textual presentation.

The symbol to be used for these purposes is the symbol in Figure 9/E.121. This symbol was adopted by the World Federation of the Deaf during their meeting in 1980. For specific regulations regarding the design and applications of this symbol, it is recommended that Administrations contact their national member organization of the World Federation of the Deaf or the General Secretariat of this organization at 120 Via Gregorio VII, 00165 Rome, Italy.

Figure 9/8.121, p.

ANNEX A
(to Recommendation E.121)

Procedure for supplementary context experiment

for further evaluation of auxiliary symbols for SOS services

A.1 Recommended emergency symbols may further be tested in a so-called ‘‘context’’ experiment. Such a context experiment could be carried out by countries who wish to use emergency symbols in conjunction with other national pictograms and/or symbols. The purpose of a context experiment would be to estimate whether this joint presentation of a set of different symbols would lead to confusion errors, either:

— because an SOS service would be selected when another service indicated by a national symbol was intended, or

— because another service indicated by a national symbol was selected when one of the SOS services was intended.

This annex gives a broad outline of the procedure that could be followed to carry out such an experiment. It involves a simple paper-and-pencil task in which subjects have to select an appropriate symbol out of a set of others.

A.2 *Subjects*

At least 40 subjects should be used. They should be more or less representative of the public at large and they should not be professionally connected with telecommunications or visual design activities.

A.3 *Selection of symbols*

The set of symbols to be investigated should include the three SOS symbols as well as all other symbols which may be used to indicate other telephone numbers.

A.4 *Experimental task*

The subject's task is to match each symbol to its particular service by selecting an appropriate telephone number. For this purpose, he is presented with a set of papers. On each paper, the whole set of symbols with matching telephone numbers is presented. The sequence in which the symbols are presented on a page is randomly varied between pages. At the bottom of each page appear two questions to be answered:

1) If I wanted to contact the POST OFFICE I would dial

(Fill in the appropriate telephone number.)

2) I am VERY CERTAIN / RATHER CERTAIN / UNCERTAIN that my answer is correct.

(Circle one of the three alternatives.)

A.5 *Treatment of the data*

The frequency of correct responses and the accompanying certainty ratings are computed for each symbol. If errors are substantial, it is useful to carry out a more detailed analysis to make clear which symbols are confused with each other. For purposes of evaluating the SOS symbols, it is only necessary to look at the confusion between SOS symbols and for each individual SOS symbol.

ANNEX B
(to Recommendation E.121)

During the Study Period 1981-1984, two experimental studies were conducted in order to develop an appropriate set of symbols. In either one study or both studies, the following Administrations and manufacturers took part: AT&T, USA; Bell-Northern Research, Canada; British Telecom, UK; Bundespost, FRG; Chile; France; ITT, UK; KTAS, Denmark; The Netherlands; NTT, Japan; Sweden; Uruguay.

In the first study, in which 570 subjects from nine Administrations participated, a first selection was made from a set of 29 symbols for 12 common services. After a second experiment, including 585 subjects from eight Administrations, a final selection was made.

In the latter study, it was shown that these symbols, if not recognized immediately, can be learned in a few trials.

References

[1] IEC Publication 417 (1973) 5090-a.

[2] ZWICKER (E.) *et al.* : Critical bandwidth in loudness summation, *Journal of the Acoustical Society of America* , Vol. 29, pp. 548-557 (1957).

Recommendation E.122

MEASURES TO REDUCE CUSTOMER DIFFICULTIES IN THE INTERNATIONAL TELEPHONE SERVICE

1 General

A common problem in customer dialling in the international automatic telephone service is the erroneous dialling of the trunk prefix of the country of destination. In the international service, this trunk prefix must not be dialled. The following measures have been tried and have proven very effective; they are recommended to reduce this problem.

2 Recorded announcement

2.1 It is recommended that, at International Switching Centres (ISCs) where the trunk prefix can be detected, the call should be blocked and automatically routed to a recorded announcement which would instruct the customer to dial the call again without dialling the trunk prefix (see also Recommendation E.182, § A.2.8).

2.2 An example of such an announcement is: ‘‘Please do not dial a zero after the country code when calling this country. Please hang up and try your call again’’.

The exact source of the announcements would be any suitable place, although it is preferable in traffic terms to use a source as close to the call origin as possible.

2.3 The call is blocked and the announcement given from either the outgoing ISC or the incoming ISC in the language of either the originating or terminating country. It is not known whether the language of the originating or of the terminating country is most acceptable to the customers

2.4 When applying this method at an outgoing ISC, care must be exercised in selecting the countries to which this measure is applied, as the trunk prefix which is to be blocked might be a valid trunk code for some countries. The employment of this measure should be preceded by a review of the pertinent information including national numbering plans and tests, as well as operator access codes , and by an explanation to the other Administrations involved of the plan to block calls having an erroneous trunk prefix.

3 Customer instructions

3.1 To avoid premature abandonment of attempted calls , customers should be advised to wait longer than usual for a call to be established.

3.2 It is recommended that when Administrations prepare dialling instructions for their customers they emphasize that the trunk prefix should not be dialled in the international automatic telephone service

This is necessary when the destination country conventionally writes its telephone numbers such that the trunk prefix appears with the trunk code (in parentheses). To compose a comprehensible and accurate statement can prove difficult: suitable forms are given below.

3.2.1 The first form is suitable for explanation. It could be accompanied by numerical examples of complete international telephone numbers:

‘‘The trunk prefix zero that precedes the national trunk code in several countries should be omitted after the country code in international dialling. For example, to call Amsterdam (020) from another country, you dial 20 after the country code for the Netherlands, which is 31. Some countries have a different trunk prefix that should be omitted in international dialling. For example, in Finland the trunk prefix is 9, while the trunk code for Helsinki is 0; to call Helsinki (90) from another country, you dial 0 after the country code for Finland, which is 358.’’

‘‘Other countries do not normally include their trunk prefix with the trunk code when writing telephone numbers: in such cases you should not omit the first digits in international calling.’’

An example of the use of this statement is given in Recommendation E.126, Annex A.

3.2.2 The second form may be more suitable in some contexts:

‘‘In many countries, a special prefix (often a zero) is normally printed in telephone numbers with the trunk code, because it must always be dialled for long-distance calls within that country. This prefix must *not* be dialled when

---

In using the language of the originating country at an incoming international switching centre, Administrations should beware of using an inappropriate language in cases where calls are routed through a transit country.

making international calls to such countries. If your international call is not *successful* , you should check to see if the first digit of the (apparent) trunk code is a prefix that must not be dialled.’’

3.3 It is believed that widespread use of the notation given in Recommendation E.123 for national and international telephone numbers would lead to a reduction in the incidence of erroneous dialling of the foreign national trunk prefix, and of other errors, in international dialling. Administrations should encourage the use of this notation.

Recommendation E.123

NOTATION FOR NATIONAL AND INTERNATIONAL TELEPHONE NUMBERS

1 General

The statements below apply specifically to the printing of national and international telephone numbers on letter-heads, business cards, bills, etc. Regard has been given to the printing of existing telephone directories standard notation for printing telephone numbers on letterheads, directories, etc., helps to reduce subscriber difficulties and errors

1.1 The international number should be printed below the national number, with corresponding digits lined up one under the other to facilitate understanding of the composition of the international number as shown in the examples in §§ 1.3 and 1.4 below.

1.2 The words ''National'' and ''International'' in the appropriate language should be placed to the left of the national and international numbers, and these should be separated by a horizontal line.

1.3 Either the symbol for telephone given in Recommendation E.121 or the word ''Telephone'' in the appropriate language should be placed to the left of (or above) the national and international numbers (to avoid confusion with other letterhead numbers). The + (plus) signifies the international prefix (see § 4.1).

Example: Telephone | *ational Inter* ˜ ˜ ˜ (0607)˜123˜4567
nternational ˜ ˜ +22˜607 ˜123˜4567

(Additional examples are shown in § 6 below.)

1.4 Because the countries of World Numbering Zone 1 (North America) have the country code 1, the same number as is used for the trunk prefix, and because dialling between these countries is the same as long-distance dialling within them, subscriber difficulties are avoided by using an alternative notation that has been found superior for use within these countries and equally good for subscribers in other countries dialling to Zone 1. This is to substitute for ''National'' on the upper line the phrase ''Within N. Amer. zone''.

Example: Telephone Within N. Amer. zone (302) 123 4567 International +1 302 123 4567

1.5 If it is desirable to write only the international number, it should be written in the form:

Telephone International +22 607 123 4567

1.6 To show an extension number of a PABX without direct in-dialling, the nationally used word or abbreviation for ''extension'' should be written immediately after the telephone numbers and on the same line as the word ''telephone'', followed by the extension number itself.

Example 1: Telephone Within N. Amer. zone (302) 123 4567 International +1 302 123 4567 ext. 876

Example 2: Telephone International +22 607 123 4567 ext. 876

In this way, the extension number is separated from the digits to be dialled and, where it must be typed onto a letterhead, for example, it need be typed only once.

It is also desirable that the printing of other information on letterheads, etc., such as telex and telegraph numbers and postal codes should not cause subscriber confusion with the telephone number.

1.7 It is often necessary to draw the attention of subscribers to the need to omit the foreign national trunk prefix when dialling an international call. This need occurs when the destination country conventionally writes its telephone numbers such that the trunk prefix appears with the trunk code (in parentheses). To compose a comprehensible and accurate statement can prove difficult: suitable forms are given in Recommendation E.122, § 3.2.

1.8 Grouping the digits of a telephone number is advisable for reasons of memorizing, oral presentation, and printing.

2 Classes of symbols

2.1 There are four classes of symbols in national or international numbers. No symbol should be used in more than one class, nor should any symbol within a class have more than one meaning.

2.2 These classes are:

— diallable symbols (in French: *symboles servant à la composition du num´ero*);

— procedural symbols (in French: *symboles op´eratoires*);

— information symbols (in French: *symboles d'information*);

— spacing symbols (in French: *symboles d'espacement*).

3 Diallable symbols

A *diallable* | symbol is a symbol which is to be dialled and appears on a telephone set to designate either a finger hole of a dial or a push button of a keyset other signs. Some desirable properties to be considered when selecting diallable symbols are listed in Annex A.

4 Procedural symbols

A *procedural* | symbol is a symbol which tells the subscriber how to dial. Such symbols should not appear in a finger hole or on a push button because they are not to be dialled.

4.1 *International prefix symbol*

The *international prefix symbol* | should be + (plus) and should precede the country code in the international number. It serves to remind the subscriber to dial the international prefix which differs from country to country and also serves to identify the number following as the international telephone number.

4.2 *Use of parentheses*

The symbol ( ) (parentheses) should be used to indicate that the digits within the ( ) are not always dialled.

Specific recommendations on the symbol for buttons 11 to 16 of a telephone keyset are contained in Recommen dation E.161, § 3.

The ( ) should enclose:

— the trunk prefix and trunk code in a national number ,

— the trunk code when the trunk prefix is not in universal use within a country.

This is done to remind the user not to dial the enclosed digits for calls within the same numbering area.

The ( ) should not be used in an international number.

It should be noted that certain Administrations, for national purposes, use a hyphen between the trunk code and subscriber number as a substitute for the symbol ( ) parentheses in national numbers.

4.3 *Multiple numbers reached through automatic search*

For a subscriber with multiple numbers reached through automatic search from the main number, only the main number should be printed, without any symbol to denote the existence of the multiple numbers. This avoids encouraging subscribers to dial other numbers in a group immediately after finding the main number busy, a problem that is particularly important when only calls to the main number are capable of triggering automatic search.

4.4 *Multiple numbers without automatic search*

For a subscriber with multiple numbers who does not have automatic search, the symbol / (oblique stroke, solidus, or slant) may be used to separate the alternative numbers.

Example A: (0607) 123 | 567 | | 23 | 272 | | 27 | 876

(0607) 123 | 567 | | 93 | 844 | | 64 | 692

+22 607 123 | 567 | | 93 | 844

To avoid dialling confusion in Example A, it is especially important that there be a space on either side of the symbol /.

When it is desired to abbreviate the alternative numbers and they are consecutive, only the last digit should be shown for the alternative numbers.

Example B: (0607) 123 | 567/8/9

To avoid dialling confusion in Example B, it is especially important that there be *no* space on either side of the symbol /.

The general use of / is to indicate a choice when dialling. It may therefore also be used to indicate a choice of prefix codes as, for example, the choice of dialling personal or station calls.

4.5 *In-dialling*

In the national and international number no symbol should be used to show that a subscriber number is an in-dialling number of a PBX. Where it is desired to indicate the existence of in-dialling within a PBX and to indicate the in-dialling access code the following format is recommended:

(0607) 123 . | | |

(0607) 1 | 3 | | | |

The number of dots (periods) is equal to the number of digits in the extension number of the PBX

On letterheads, subscribers could insert their own in-dialling numbers in the dotted spaces. Presentation of the main listed number should conform to § 1.3 above.

4.6 *Symbol to indicate the existence of an additional dial tone*

Some Administrations use one or more additional dial tone responses as procedural elements, after the calling customer obtains access to the public network. Where a symbol is needed to indicate the existence of an additional dial tone,

---

In many countries, a horizontal line element (-), e.g. a hyphen in North America or a dash in some European countries, is used in national telephone numbers as a spacing character. Therefore, such an element is not available to designate an additional dial tone. Some Administrations, e.g. the Netherlands Administration, on the other hand, uses the dash to indicate an additional dial tone and foresee a continuation of this use for some time.

that symbol should be the graphical representation of a full cycle of a sine wave, or a close approximation to such a representation. It should be placed at the point in the number where it is expected to occur, and it should be preceded and followed by a space to avoid confusion with a hyphen used as a spacing symbol (§ 6.1). Its meaning is to tell the user to wait for the additional dial tone

Handwritten character:

Example ?02

Typewriter character ‘‘tilde’’:

5 Information symbols

An information symbol is a symbol associated with the subscriber number describing special features of the subscriber telephone service, e.g., the symbol , where used, indicates that the subscriber has an answering device attached to his telephone [reference should be made to Recommendation E.117, §§ 1a) and 1b)].

5.1 Such symbols are not to be dialled and therefore should not appear in a finger hole or on a push button, nor can such symbols be procedural in instructing the subscriber how to dial.

5.2 Information symbols should be associated with the word ‘‘Telephone’’. To avoid confusion in dialling, they should not appear either as prefixes or suffixes to the telephone number.

Example: Telephone (0607) 123 | 567 or Telephone

(0607) 123 | 567

Some commonly used existing groupings are: Telephone | *ational Inter* ˜ ˜ ˜(0211)˜5432 / *nternational* ˜ ˜ +39˜211 ˜5432

Telephone | *ational Inter* ˜ ˜ ˜(071)˜78˜901 / *nternational* ˜ ˜ +41˜71 ˜78˜901

Telephone | *ational Inter* ˜ ˜ ˜(06)˜65˜43˜21 / *nternational* ˜ ˜ +49˜6 ˜65˜43˜21

See also the example below

6 Spacing symbols

Spacing symbols are symbols which are used solely to separate parts of a telephone number from each other. They cannot be diallable, procedural or information symbols.

6.1 Grouping of digits in a telephone number should be accomplished by means of spaces unless an agreed upon explicit symbol (e.g. hyphen) is necessary for procedural purposes. Only spaces should be used in an international number.

6.2 In the international number, spacing shall occur between the country code and the trunk code and between the trunk code and the subscriber number.

6.3 The major separation among digits in a telephone number (national or international) should occur between trunk code and subscriber number. This separation should therefore always be wider than any other separation within the number. This requirement is automatically met in the notation recommended, as in the examples.

7 Facsimile number notation

The printed format for facsimile numbers should follow the conventions set forth for voice telephone numbers except that facsimile numbers should be clearly labeled with the upper-case letters FAX printed to the left of the numbers as illustrated here:

FAX | *ational Inter* ˜ ˜ ˜(06)˜65˜43˜21 / *nternational* ˜ ˜ +49˜6 ˜65˜43˜21

The recommended appearance of the printed facsimile symbol (FAX) is specified in Recommendation E.121.

Administrations using dots or hyphens as separators nationally may require time to determine the consequences of discontinuing their use.

ANNEX A

(to Recommendation E.123)

Desirable properties of diallable symbols

This annex lists some desirable properties to be considered by the CCITT when this body standardizes new diallable symbols. There are a large number of properties which are desirable for such symbols, and those indicated below seem particularly relevant. However, their relative importance has not been evaluated, and it is recognized that it may not always be possible to fulfil all these conditions when selecting symbols

The properties of diallable symbols should be:

A.1 *Distinct from other diallable symbols*

As used here, ‘‘distinct’’ refers to dissimilarity from other symbols compared with them visually, or aurally. The dissimilarity should be evident in low probability of confusion with other symbols under degraded perceptual conditions.

A.1.1 The symbols should be visually distinct in their designated form as well as in typewritten, handwritten, or printed form, including variations which might occur in each.

A.1.2 The symbols should be aurally distinct in naming them in at least the official languages of the ITU.

A.2 *Widely known name*

The name of the symbol should be as widely known as possible and be constant over as wide a range of population as possible.

A.3 *Reproducible*

The symbol should be easily reproducible in handwritten and typewritten form.

A.4 *CCITT-ISO compatible*

The symbol should be one which is given as a member of the CCITT Alphabet No. 5 and the ISO (International Organization for Standardization) standard code for information interchange.

A.5 *Made up of a single character*

The symbol should not be composed of more than one individually valid symbol; nor should more than one key operation on a typewriter, for example, be required to produce it.

A.6 *Abstract*

The symbol should not already have intrinsic meaning resulting from other specialized usage.

A.7 *Immediately recognizable as a diallable character*

The symbol should not be one which is used for procedural or information purposes.

Recommendation E.124

DISCOURAGEMENT OF FRIVOLOUS INTERNATIONAL CALLING TO UNASSIGNED OR VACANT NUMBERS ANSWERED BY

RECORDED ANNOUNCEMENTS WITHOUT CHARGE

1 Preamble

It sometimes happens that there is a severe outbreak of international calling to telephone numbers that answer with recorded announcements without charge. It seems that some subscribers make such calls merely for free amusement. Frivolous calling can occur unnoticed by an Administration unless it is deliberately looked for, and serious degradation of quality of service can result.

This Recommendation concerns prevention and abatement of frivolous international calling.

2 Monitoring

Administrations should be alert to changes in the rate of call completion, or in the rate of calls completed without charge, or in any other direct or indirect measures that could indicate the growth of a significant amount of frivolous calling necessary to confirm the existence of this problem.

3 Prevention

The following practices in one country may reduce the likelihood of becoming the destination for frivolous calls from another country:

— limiting the number of cycles of an annonouncement;

— disconnecting when the limit is reached;

— offering no lengthy information without charge.

4 Abatement

4.1 When frivolous calls can be identified as originating from the network of a particular Administration, the Administrations concerned should arrange bilaterally to implement the most appropriate prevention and abatement measures for the particular case. This bilateral arrangement may include measures not recommended for general application.

4.2 In general, vacant subscriber number announcements should not be replaced by non-standard tones to reduce frivolous calling because the use of unfamiliar tones might cause increased repeat attempts by serious callers. Where

---

The problem was first discovered in Japan after KDD noticed a large number of calls lasting longer than one minute without an answer signal being returned.

Where the signalling systems permit, the use of a backward unallocated-number signal will allow an appropriate tone or announcement to be returned to the caller according to Recommendation E.181, § 2.

particular numbers have been identified as the targets of frivolous callers, replacing announcements by tones for a limited period should not degrade the service for serious callers. For this purpose only, a special information tone is recommended.

4.3 When frivolous calling has been identified as causing quality of service problems, it is desirable to detect the calls and direct them to an appropriate announcement as close to the calling subscriber as practicable. The administrative and technical difficulties of updating such arrangements for changes in many different numbering plans make the incoming international switching centre the practical limit in most cases. By bilateral agreement, however, frivolous calls might be blocked at the outgoing international switching centre instead.

4.4 In accordance with Recommendation E.231, no charge should be made for calls to subscribers whose service has been suspended, cancelled or transferred. When calls to certain of these out-of-use numbers have been identified as predominantly frivolous, the provisions of Recommendation E.231 may be temporarily ignored for only the particular numbers involved, until the problem is abated , and subject to the agreement of the Administrations concerned. Calls to these numbers would then have an answer signal returned and would be charged unassigned numbers may be handled similarly. This measure would be immediately effective when frivolous calls originate from payphones.

Recommendation E.125

INQUIRIES AMONG USERS
OF THE INTERNATIONAL TELEPHONE SERVICE

One method of measuring telephone service quality is to conduct inquiries among users to ascertain their opinions of and actual experience with, various aspects of the service they use. These inquiries are have been developed and printed in previous editions of the CCITT Book. These are:

a) questionnaire for national subscribers dialling international calls;

b) questionnaire for visitors from other countries dialling national or international calls.

The complete text of these questionnaires, as well as guidelines for their use, may be found in the CCITT *Red Book* , Volume II, Fascicle II.2, ITU, Geneva, 1985.

Recommendation E.126

HARMONIZATION OF THE GENERAL INFORMATION PAGES OF THE
TELEPHONE DIRECTORIES PUBLISHED BY ADMINISTRATIONS

1 General

1.1 It is recognized that users should normally have recourse to the General Information pages of telephone directories when looking for the information they need to obtain the required telephone services and to apply the operating procedures correctly.

1.2 In addition, appropriate information in the General Information pages of telephone directories may promote the development of national and international telephone traffic and the utilization of services by the national users.

1.3 Obviously foreign visitors too need to consult the General Information pages of the telephone directories of each country they visit and a similar presentation of the information in the various countries will make their research

Administrations should take care not to apply this measure to non-frivolous telephone calls.
Some exchanges may require the addition of a function to handle such calls in this manner.

easier.

1.4 Administrations should therefore see that the composition of the General Information pages of telephone directories is harmonized along the lines indicated below, with a view to making available to all users of the telephone service a uniform source of information which is satisfactory and easy to consult.

2 Guidelines

To obtain the required harmonization, Administrations should set out the General Information pages of their telephone directories along the lines indicated below:

2.1 The General Information pages of telephone directories published in various countries should contain similar indications so as to facilitate consultation and the search for information by foreign users.

2.2 The data listed in Annex A should always be included in the General Information pages of the telephone directories published by Administrations.

2.3 Each item of information should be presented, as far as possible, in the order of priority indicated in Annex A.

2.4 The graphical presentation of information should be suggestive and attractive to users (for example, through use of letters and colours, and an appropriate arrangement in the opening pages of the directory). The examples given in Annex A are illustrative only and no particular format is recommended.

2.5 For the sake of efficiency and to achieve the desired purpose, especially for foreign visitors, care should be taken:

— to present the information in brief, concise and clear texts, expressed in simple language;

— to use recognized and specific terms;

— to group all the information concerning a particular subject in a logical manner;

— to present the operating procedures in schematic form, using symbols to explain the different sequences and not lengthy descriptive texts, and using examples;

— to use the standardized symbols to identify important numbers and services (symbols of national interest may be used until such standardization is achieved) (see Recommendation E.121);

— to use representative charts to facilitate the application of operating procedures.

2.6 The last group of General Information pages should be devoted specifically to foreign visitors; they should therefore be printed in the most appropriate foreign languages and contain in a shortened form most of the information and instructions necessary for the correct exploitation of the telephone service (see Recommendation E.127).

2.7 National trunk codes should be given either in the telephone directory or in a separate publication.

2.8 The national and the international prefixes and a list of country codes for all accessible countries should be given in the General Information pages. A sample of foreign trunk codes may also be listed in these pages; a more complete list may be provided in a separate publication not necessarily published at the same time as the telephone directories, and not necessarily distributed to all subscribers.

2.9 The validity and usefulness of the information and instructions given in the General Information pages and in the separate ‘‘Guide’’ should be checked every time the telephone directories are reprinted.

2.10 Every Administration should be free to compose its telephone directories in the way it considers most appropriate from the national point of view, both with regard to form and content, and taking due account of production costs. However, the type of information to be included in the General Information pages, their sequence and order of priority, should be in conformity with this Recommendation, with a view to obtaining the harmonization required.

ANNEX A

(to Recommendation E.126)

List of data to be included in the General Information pages

of telephone directories

Table A-1/E-126 gives the data and its priority for inclusion in the General Information pages.

H.T. [1T1.126]

TABLE A-1/E.126

Tableau A-1/E.126 [1T1.126], p.16

H.T. [2T1.126]

TABLE A-1/E.126 *(cont.)*

Tableau A-1/E.126 [2T1.126], p.17

Priority 1

Index

Emergency services

Important and useful numbers

— Public utility services

— Auxiliary services

Instructions for using the telephone

— Operational procedure and tones

Procedures for obtaining different types of calls

— Automatic service

— Codes

— Operator service

— Charging for calls

— Time zones

Instructions for using the directory and explanation of symbols and abbreviations

Public telephone

— Offices

— Booths

— Telephones made available for public use

Maps

Other information

— Recommended presentation of national and international numbers

— Commercial and miscellaneous product service

— Subscription and invoicing

— List of directories and how to obtain them

— Administration: addresses and telephone numbers

Pages intended for foreign visitors

Figures Priorit´e 1 et 2, p.18

Figure Autres services, p.19

Priority 3

Instructions for using the telephone

Operating procedure and tones

— Make sure of the number of your correspondent or of the service required by consulting the telephone directory or your own address book.

— When you lift the receiver, the dialling tone you will hear will be as follows:

Figure, p.

— After dialling the number, you will hear either the ringing tone, which is as follows:

Figure, p.

or the busy tone, which is as follows:

Figure, p.

— Others: to be described as necessary.

Note — The tones are given as an example. For the graphical representation of tones, see Recommendation E.121.

Figure Priority 4, p.

Codes

The ‘‘Guide to Codes’’ gives the trunk codes for all national districts and the various country codes, possibly followed by frequently used foreign trunk codes.

Operator service

— Local calls

— Trunk calls

— International calls

Figure, p.

Charging for calls | (The publication of this information is left to the discretion of each country)

— Local calls (automatic and via the operator)

— Trunk calls (automatic and via the operator)

— Charging periods

— International calls (automatic and via the operator)

Time zones | (The publication of this information is left to the discretion of each country)

Priority 5

Instructions for using the directory and

explanation of symbols and abbreviations

(The publication of this information is left

to the discretion of each country)

Priority 6

Public telephone

Offices

Information concerning:

— the services provided

— the charges applied

— other subjects, at the discretion of each country

Booths

Possible calls and charges

Telephones made available for public use

Permitted calls and charges

Priority 7

Maps

Maps may be used to indicate which areas are covered by the telephone directory and which directories cover adjacent areas.

(The publication of this information is

left to the discretion of each country.)

Priority 8

Other information

Specific information

— Recommended presentation of national and international numbers

In personal or business relations, every subscriber should communicate to his correspondents:

— his national number, with the trunk prefix, for receiving trunk calls, and

— his international number, for receiving international calls, preferably in accordance with the following grouping method:

Telephone | *ational Inter* ˜ ˜ ˜ (06)˜78˜21˜91
nternational ˜ ˜ +39˜6 ˜78˜21˜91

corresponding for example, to subscriber number 78 21 91 in Rome (6), Italy (39). The symbol ‘‘+’’ represents the international prefix of the country of departure.

Warning — The trunk prefix zero that precedes the national trunk code in several countries should be omitted after the country code in international dialling. For example, to call Amsterdam (020) from another country, you dial 20 after the country code for the Netherlands, which is 31. Some countries have a different trunk prefix that should be omitted in international dialling. For example, in Finland the trunk prefix is 9, while the trunk code for Helsinki is 0; to call Helsinki (90) from another country, you dial 0 after the country code for Finland which is 358.

Other countries do not normally include their trunk prefix with the trunk code when writing telephone numbers: in such cases you should not omit the first digits in international calling.

General information | (left to the discretion of each country)

— Commercial and miscellaneous product service

Description: Information Tel. No.

— Subscription and invoicing

Information concerning:

a) categories of subscribers

b) contributions to installation, removal and replacement costs

c) periodic rentals

d) conditions of subscription

e) data entered on periodic invoice

f) methods of paying invoices

g) conditions for delayed payment Information Tel. No.

— List of directories and how to obtain them

a) list of volumes covering various districts

b) conditions of sale of volumes

c) address of sales centre

— Administration: address and telephone numbers

Priority 9

Pages intended for foreign visitors

Description

One or more pages in one or more languages containing the necessary information to enable foreign visitors to obtain correct access to basic and vitally important services. The information should cover the following points:

— general

— emergency services

— operating procedure

— tones

— national calls

— international calls

— reference for finding code numbers

— directory enquiries service

— charging periods

— telephone offices, telephone booths and telephones made available for public use: operating details and special tones.

Recommendation E.127

PAGES IN THE TELEPHONE DIRECTORY

INTENDED FOR FOREIGN VISITORS

1 General considerations

1.1 The number of people travelling abroad on business, for tourism or for any other reason is steadily increasing; in general such persons move about a great deal and thus have to contend with the problems this involves.

1.2 To satisfy their needs, foreign visitors have to make frequent use of the telephone; consequently Administrations strive to provide them with the essential instructions on how to use the telephone service for domestic and international calls.

1.3 In the interest of both users and Administrations, clear and easily understandable official information should be available wherever the telephone service may be used.

1.4 The telephone directory is the main official vehicle for the circulation of correct, up-to-date information on the use of the telephone.

1.5 To facilitate consultation of the General Information pages in the telephone directory by foreign visitors, one needs to include one or more pages in one or more languages to assist them during the consultation process.

1.6 Administrations should therefore ensure, if there is a need, that there are pages in the telephone directory specifically intended for foreign visitors and that they are standardized on the basis of the following basic provisions.

2 Basic provisions

To provide the greatest possible assistance in the use of the telephone service, Administrations should apply the following basic provisions:

2.1 Instructions enabling foreign visitors to use the most common basic services and information concerning domestic and international calls and the rates charged should appear in one or more appropriate foreign languages and be assembled on one or more pages inserted at the end of the General Information pages in telephone directories.

2.2 The pages included specifically for foreign visitors should contain a summary of the principal information and instructions requested for correct operation of the telephone service and also a number of references to the more complete General Information pages in the telephone directory, which foreign visitors will have no difficulty in consulting if their contents are standardized as is desirable (see Recommendation E.126).

2.3 The pages in the telephone directory intended for foreign visitors should cover the main points listed below, developed on the basis of criteria adopted for the directory itself.

2.3.1 *Introduction*

2.3.2 *Regular information*

— numbers of the emergency services

— prefixes (national and international)

— dialling codes of countries connected by the international automatic service (with references to the General Information pages or to a separate publication supplementing the telephone directory)

— principal tones (with graphic representation): ‘‘dialling tone’’, ‘‘ringing tone’’ and ‘‘engaged tone’’, with mention to other tones, if necessary

— Telephone Directory Information and trunk codes within the country and abroad.

2.3.3 *Operating instructions for outgoing calls*

— local

— trunk

— international (automatic or through the operator) from:

a) ordinary telephones

b) payphones

c) public telephone offices.

Note — A reference to the operating instructions (if there are any) in schematic form (see, for example, Recommendation E.126, Annex A) in the General Information pages would be useful.

2.3.4 *Payphones*

— identification

— characteristics of the system (signals, credit, coin return) and picture of currency and token used for payphones.

2.3.5 *Public telephone offices*

— identification

— service hours

— operator services.

2.3.6 *References to the General Information pages relating to:*

— domestic and international telephone charges

— full rate and reduced rate periods

— time zones

— Administrations or Recognized Private Operating Agencies: addresses and telephone numbers.

Recommendation E.128

LEAFLET TO BE DISTRIBUTED TO FOREIGN VISITORS

1 General

1.1 The ever increasing number of people travelling to foreign countries generally need to use the telephone either to communicate with their own country or with people in the country they are visiting.

1.2 These people make many of their calls from payphones and public telephone offices , where normally they can find appropriate instructions for the use of the telephone service; others who make their calls from hotels or private telephones may encounter difficulties for lack of information.

1.3 To obtain more detailed information, foreign visitors may consult telephone directories containing General Information pages (see Recommendation E.126) and ‘‘Pages intended for foreign visitors’’, prepared in one or more languages to facilitate consultation (see Recommendation E.127).

1.4 In addition, a leaflet containing general information and instructions for the use of the telephone is printed and distributed to foreign visitors, either by the Administration of the country of origin on departure or by the Administration of the foreign country on arrival. Cooperation between Administrations is necessary to ensure that information contained in leaflets is accurate, and also to prevent possible duplication of leaflets.

1.5 Administrations should therefore ensure that the leaflets to be distributed to foreign visitors have the widest possible application and, in principle, are drafted in a uniform manner on the basis of the following guidelines. However, each Administration can prepare its own leaflet to be distributed either at home or in any other country, with the content it considers most appropriate from the national point of view.

2 Guidelines

The leaflets to be prepared for foreign visitors should have the following features:

2.1 *Structure*

The leaflet should be of assistance to foreign visitors who wish to use payphones connected to the trunk service and the international automatic service or who apply to public telephone offices, besides being assisted by hotel operators.

2.2 *Title*

‘‘Telephone Information’’.

2.3 *Format*

It should be of a convenient size (e.g. A4 format where this standard is utilized), folded in three to form six small-size pages.

The exact design of the cover need not be identical between countries to permit designers some freedom of interpretation, but should include the standard title and some indication of the country to which the leaflet applies, a prominant representation of the telephone symbol (see Figure 1/E.121), an illustration of the payphone widely used in the country, and some reference to the public telephone service.

Note — A model of the leaflet in the required format and with the particulars it should contain is given in Annex A.

2.4 *Contents*

— Introduction

— General information:

a) SOS — emergency numbers

b) Prefixes (national and international)

c) Destination codes of countries which can be reached by fully automatic means

d) Main tones with graphical representation

e) Information about reduced rates , if any

f) Telephone directory information and trunk codes

— Payphones:

a) How to find them

b) How to use them

c) System characteristics (signals, credit, return of coins) and pictures of currency and token used for payphones

— Public telephone offices :

a) How to find them

b) Hours of service

c) Operator services

— Hotel and private telephones :

a) How to call

b) Surcharge

— Supplementary notes:

a) Reference to the ‘‘Pages intended for foreign visitors’’ (that is, the last of the front pages of the telephone directory)

b) Reference to the ‘‘ Trunk code publication ´LP c) Time differences: time zones (front pages)

Note — An example of the text in general form is given in Annex B.

2.5 *Layout*

It should be pleasing to the eye, in order to attract the reader’s attention, printed in black and white and in colour, with clearly legible characters and also boldface type to display the most significant information, with graphic representation of tones and with pictograms and standardized symbols if these appear frequently in the text. Sentences should be short, concise and simply formed of words in current use.

2.6 *Production and distribution*

— Preferably, the version produced by each country concerned in the appropriate language, should be available at the places of arrival of foreign visitors, at public telephone offices, travel agencies , etc.

— Optionally, the version produced by each country may be made available at the places of departure of travellers, at travel agencies, airports, railway station ticket offices , etc.

The choice of the method should be made on the basis of consultation between the two countries concerned.

2.7 *Validity*

This should be clearly indicated with reference to the last updating, and should be checked according to changes in contents and distribution.

ANNEX A
(to Recommendation E.128)

Model of leaflet to be distributed to foreign visitors

H.T. [T1.128]
Page No.

lw(12p) | lw(84p) . lw(12p) | lw(84p) .
{ Germany 49 — 1 Great Britain 44 + 1 Greece 30 + 8 Japan 81 — 6 U.S.A. (New York) 1 other countries
}

Tableau 1/E.128 [T1.128] A L'ITALIENNE, p.25

H.T. [T2.128] Page No.

Tableau 2/E.128 [T2.128] A L'ITALIENNE, p.26

ANNEX B
(to Recommendation E.128)

Sample text of leaflet to be distributed

to foreign visitors
TELEPHONE INFORMATION

Foreword

If you are abroad on a holiday or on a business trip and have to get in touch with your family or with your friends or business connections, you can do so in the most practical and economical way by dialling your calls directly from a payphone. In this way you would have no language problem.

If you want to benefit from special telephone facilities or if you are short of the proper coins or of tokens, you can go to a public telephone office where the personnel will advise you and help you to call any country in the world.

The aims of this leaflet are to alleviate any anxiety you may have about foreign languages, and to enable you to use the telephone services without difficulty.

Information

SOS—for emergency calls dial: . | |

National prefix: . | |

International prefix: . | |

Country codes that can be directly dialled (see pages 5 and 6 of the leaflet).

Tones: dial tone

Tones: ringing tone

Tones: busy tone

(For graphical representation of tones see Recommendation E.121.)

For directory inquiry service and telephone codes dial: . | |

Reduced rates.

Payphones

Payphones can be found in telephone street kiosks and, as a rule, wherever a sign with a telephone symbol is exhibited.

Payphones work with coins (to be specified) or with telephone tokens (value to be specified); the most modern payphone operates with a ‘‘telephone card ´coins and the telephone token are pictured here below:

Figure CCITT 78870, p.

Procedures for international calls

— Insert enough coins or tokens into the payphone to make up a small credit.

— Lift the receiver and wait for the dial tone.

— Dial the international prefix followed by the country code, then the trunk code (without trunk prefix) and finally the subscriber telephone number.

Example

To call subscriber 12345 in Bristol (trunk prefix with trunk code is 0272) in Great Britain (country code 44) you should dial: + 44 272 12345.

Note 1 — It may be useful for you to jot down all the digits in the right sequence before dialling.

Note 2 — The trunk prefix before the trunk code must not be dialled in international dialling.

— Insert other coins or tokens to prolong duration of the call as soon as you hear the special tone advising you that your credit in the phone box has almost expired.

Once your call is finished:

— replace the handset;

— press the proper button on the phone box to recover the unused coins and/or tokens.

Public telephone offices

The addresses and office hours of the public telephone offices are shown at the top of the subscribers' list in the telephone directory of each locality. Public telephone offices can generally be identified by the street sign exhibited outside the building. They are attended by trained personnel who can help you to obtain your call when operator assistance is needed (personal, collect or credit card calls, when such facilities are admitted).

Hotels and private telephones

When calling from a hotel you may be able to call direct after dialling a code for access to the public network (this information should be provided in your hotel room). In other cases you may have to rely upon the services of the hotel operator. A surcharge will normally be imposed by the hotel for any calls you make. It is advisable to check what surcharge the hotel will impose before making your call.

All services that are normally available from payphones can also be used when calling from a private telephone. However, in some parts of the country several telephones share a single line, in which case the telephone line will not be available to all users at all times.

Supplementary notes

More information can be found in the ‘‘Pages intended for foreign visitors’’ which are the last of the front pages of the telephone directory. A list of national trunk codes and another of the main localities of foreign countries appears in the ‘‘Trunk Code Publication’’.

To decide whether an international call can be made at a certain time, it may be convenient to consult the ‘‘ Time zone chart of the world ´This information is given in the front pages of the telephone directory.

Phone Home!

You will feel that you are there.

Recommendation E.130

CHOICE OF THE MOST USEFUL AND DESIRABLE | fR SUPPLEMENTARY TELEPHONE SERVICES

1 General

The best choice of a supplementary service to be introduced depends basically on the individual situation of a country. This Recommendation only gives guidelines which should be carefully appraised by the respective Administration.

It is suggested that a choice might be made from services which are defined in the list of Supplementary Services (see Supplement No. 1 at the end of this fascicle). Supplement No. 1 aims to provide only outline information about the supplementary services included, in order to give Administrations a broad idea of the nature of these services. § 1 of the Supplement deals with those services considered to have international implications and seeks to specify these implications for each of the services concerned. § 2 of the Supplement deals with those services not considered to have international implications. Appendix I to the Supplement deals with those services not considered as supplementary.

The experience gained with these services by Administrations which have already introduced the relevant service is given in the form of remarks and market data within this list.

2 Items to be considered in choosing the most useful and acceptable supplementary service

2.1 *Marketability*

2.1.1 *Strength of customer's needs*

— How intense is customer's need for the service?

— Does the service really solve the customer's problem?

2.1.2 *Expected market size*

— How many users can be expected?

— Are substitute products or services available?

— Will there be a market restriction caused by competition?

2.1.3 *Customer's acceptance from the ''human factors'' point of view*

— Intelligibility of the context of the service.

— Procedures affecting easy understanding, easy handling and easy memorizing.

2.1.4 *Customer's price sensitivity*

— Expected limit of charges to be applied for the individual service or for the most common package of services, to be used by the average subscriber. (A reference might be the monthly rate of charges applied on normal telephone service.)

2.1.5 *Cost/benefit ratio from the Administration's point of view*

2.2 *Provisioning aspects*

2.2.1 *Technical requirements*

— Will the present network be affected by traffic overload caused by the new service?

2.2.2 *Regulatory consequences*

— Conflicts within present regulations.

— Problems concerning privacy protection.

2.2.3 *Charging aspects*

— Charging mode (e.g. per use or rental).

2.2.4 *International implications*

3 Basic realisation aspects

Three different technical solutions may be envisaged to make supplementary services available to subscribers:

1) additional or modified software and/or hardware of public networks (excluding terminals),

2) installation of special telephone terminals,

3) the combination of solutions 1 and 2.

As a guideline, the following aspects may be considered:

— Some services can only be realized by solution No. 1 or 3. In those cases solution No. 3 will offer a better quality of service to subscribers because of the possibility of improved handling. Such an improvement might be achieved by applying dedicated push-buttons, visual indication elements, user guidance by pictograms and symbols, text displays, etc.

— If there is only a traditional electromechanical system available, solution No. 2 may be the only economic way to realize some supplementary services (e.g. abbreviated dialling, number repetition).

— If the available system and the type of service allows free choice between the three solutions, the following aspects apply:

— solution No. 1 gives full flexibility in adapting services to subscriber needs;

— solution No. 3 may improve the handling;

— solution No. 2 bears the same advantages to the user as solution No. 3 and does not require special system features.

Recommendation E.131

SUBSCRIBER CONTROL PROCEDURES FOR SUPPLEMENTARY | TELEPHONE SERVICES

1 General

1.1 Many Administrations are planning to introduce supplementary telephone services which are likely to be viable only if controlled by the user (a list of possible supplementary telephone services is given in Supplement No. 1 at the end of this fascicle). It is therefore necessary to consider means of providing users with procedures by which such control can be achieved. The purpose of this Recommendation is to prevent an undesirable proliferation, in various countries, of subscriber control procedures for such services. Descriptions are given below of three control procedures schemes now in use or in various stages of evolution. Guidelines are offered to Administrations planning to offer subscriber controlled supplementary services. Reference is made to Annex A for a glossary of terms used in this Recommendation.

1.2 It is recognized that not all aspects of all supplementary services will affect the international telephone service , but a degree of international coordination is considered necessary because:

a) the same or similar supplementary services will exist on national and international networks; it is desirable to have similar control procedures for both applications;

b) a supplementary service which is only national now may be international in the future; in that case changes in control procedures might be impossible or expensive;

c) subscribers who travel or move will be less inconvenienced if control procedures for supplementary services do not change from one country to another;

d) compatibility between control procedures for telephone services and simple parallel end-to-end data transmission is highly desirable, because the same telephone instrument is used in both cases;

e) standardized control procedures make possible lower equipment and customer instruction costs.

1.3 Access to individual services requires that the supplementary service numbering plan have a sufficient capacity to meet all reasonable future needs; control of the services requires the ability to define functional requirements to the system.

The introduction of push-button telephones providing signals in addition to the normal decimal range (0-9) offers a means of providing the necessary function signals. Since the 12-button instrument is likely to be used by most subscribers, only two additional non-numerical signals will be available for control purposes. Study therefore has been directed towards evolving schemes for control procedures which are acceptable both from the human factors and technical aspects and do not require more than two non-numerical signals.

1.4 The same push-button telephone set that is used in dedicated telephone networks may be used as a subscriber instrument in service integrated networks. It is desirable that in this case the control procedures for a given supplementary telephone service still apply.

Where the normal 12-button telephone set is also used for services other than telephony, e.g. for data, video-telephone, etc., the control procedures used for these services should be compatible with the control procedures used for supplementary telephone services.

2 Schemes for control procedures

Recognizing that:

— the CCITT has not as yet recommended a unique scheme of subscriber control procedures for supplementary telephone services;

— the CCITT is still studying such control procedures;

— further proliferation of schemes is undesirable because this would result in subscriber confusion, less efficient use of the telephone network and might make it more difficult to work towards an optimum scheme;

it is recommended that:

— Administrations contemplating the introduction of services which require new control procedures join actively with the ongoing study;

— Administrations wishing to adopt a scheme of subscriber control procedures should apply one of those detailed below to the maximum extent feasible rather than establish a new scheme.

3 Description and analysis of code schemes for supplementary telephone services

3.1 *General*

3.1.1 Three code schemes for supplementary telephone services, currently in use or under study will be briefly described and analyzed. They are:

1) AT&T code scheme (USA);

2) CEPT code scheme (Europe);

3) NTT code scheme (Japan).

3.1.2 It is intended that Recommendation E.131 should be reviewed when experience of the three code schemes is available. It may then be possible to determine if one of them, or perhaps a fourth which incorporates the best features of all three, is to be preferred.

3.1.3 These schemes are still evolving and are liable to changes in details as study progresses or experience is gained. The information presented is an outline only and presents the position at a point in time when the Recommendation is published. Administrations considering the implementation of supplementary services requiring control procedures should approach the appropriate Administration or authority to seek detailed and up-to-date information.

3.2 *Description of the code schemes*

3.2.1 The information sent by the subscriber to the exchange for the control of a service is made up of a number of basic functional elements, some or all of which may appear explicitly in a particular message. These basic functional elements are (see the glossary in Annex A):

1) mode or type of communication identification,

2) access to supplementary services,

3) service identification,

4) function identification,

5) supplementary information,

6) block separation,

7) message suffix.

3.2.2 The mode or type of communication identification element is unlikely to be used for telephone services and allocation of codes for this purpose within these schemes is tentative. This element is therefore excluded from consideration for the present.

3.2.3 The main differences between the three code schemes are in the methods used to encode the various functional elements and the order in which they must be presented. In all code schemes a separate code is used for the dialling of abbreviated numbers.

3.2.4 For each of the three code schemes, Table 1/E.131 gives the format of the information sent by the subscriber to the exchange:

i) without supplementary information,

ii) with one block of supplementary information,

iii) for the dialling of abbreviated numbers.

In the Table 1/E.131, the digits below each message identify the functional elements as listed in § 3.2.1 above.

Table 1/E.131 (trait´e comme fig.), p.

The symbols used in Table 1/E.131 are as follows:

N = a digit;

SI = supplementary information;

SDT = second dial tone;

(. | |) = not always used. For detailed explanations, see § 3.2.5 below;

= ‘‘star’’ button of telephone set as defined in Recommendation E.161;

= ‘‘square’’ button of telephone set as defined in Recommendation E.161.

3.2.5 In the three code schemes the basic functional elements are realized in the following way:

Access to supplementary services | (element 2)

AT&T: access prefix . (Customers are permitted to dial the digits 11 in place of .)

CEPT: service code prefix or .

NTT: prefix digit 1 for services available from both dial and push-button telephones, prefix for services available from push-button telephones only.

Service identification | element 3)

AT&T: a two-digit service code that is also used to indicate the function: codes 72-79.

CEPT: two-digit (or exceptionally, three digit) service codes beginning with 1-9 and 0 are reserved for CEPT allocation in both PABX and public exchange fields.

NTT: two-digit service codes.

Function identification | element 4)

AT&T: the function is expressed in the service code, different functions for the same service use consecutive codes.

CEPT: service code prefix : activation and registration;

service code prefix : deactivation and erasure.

NTT: a numerical function code that is only required for certain services. (If a function code is needed, the subscriber is informed by means of a dial tone).

0 = deactivation,

1 = activation,

2 = registration.

Block separation | element 6)

AT&T: no block separation required.

CEPT: the standard CEPT control procedure will assume the use of a block separator after the service code and between blocks of supplementary information. As a national option, the deletion of the block separator after the service code is allowed; however, if in this case the subscriber dials a block separator after the service code, the exchange should accept the message.

NTT: the block separator may be used between the function code and the first block of supplementary information, and between successive blocks of supplementary information for push-button telephones only.

Message suffix | element 7)

AT&T: the message suffix may be replaced by a time-out.

CEPT: the message suffix is mandatory.

NTT: the message suffix is used for push-button telephones only.

Abbreviated dialling

AT&T: abbreviated numbers: 2-9 and 20-49 available.

CEPT: N(N) abbreviated numbers: 0-9 and 00-99 available;

N(N) abbreviated numbers: 0-9 or 00-99 available.

NTT: abbreviated numbers: 00-99 available.

3.3 *Features of each of the code schemes*

The features of each of the code schemes compared with one or both of the other two are given below.

3.3.1 *AT&T code scheme*

1) The symbol is used for access to supplementary services.

2) Control procedures from rotary dial and push-button telephones are compatible.

3) The messages sent by the subscriber to the exchange are short.

4) Some two-digit codes have been reserved so as to permit three-digit (or longer) service codes to be introduced in the future without changes in the existing service codes.

5) The message suffix is not essential.

6) One, two and more digit abbreviated numbers are possible without the need to use different initial digits.

3.3.2 *CEPT code scheme*

1) When only prefixes are used, the telephone numbering plan is not influenced by the code scheme for supplementary services.

2) When only prefixes are used, exchange logic is simplified.

3) When only prefixes are used, the use of similar control procedures in PABXs and the public network is facilitated.

4) The abbreviated dialling numbering plan is divorced from the service code numbering plan and does not impose restrictions on it.

5) The service code remains the same irrespective of the function required.

6) Each important function is defined by a unique prefix.

7) Other prefixes are available for new service functions.

8) A mandatory message suffix avoids the need for time-out, fixed message length or complex programming.

9) When the message suffix method for abbreviated dialling is used, one, two and more digit abbreviated numbers are possible without the need to use different initial digits.

3.3.3 *NTT code scheme*

1) The use of a prefix simplifies exchange logic.

2) The use of a prefix facilitates the use of similar control procedures in PABXs and the public network.

3) Other prefixes are available for future use.

4) A measure of compatibility between the control procedures from rotary dial and push-button telephones is possible.

5) The abbreviated dialling numbering plan is divorced from the service code numbering plan and does not impose restrictions on it.

6) The service code remains the same irrespective of the function required.

7) Each important function is defined by a unique function code.

8) Ten function codes are available.

9) Allocating a function code after a service code makes it possible to separate basic switching functions from supplementary service processing functions. This facilitates the application of new services to an existing old-type exchange.

10) The control procedures are similar to the control procedures in the NTT end-to-end communication services.

11) The function code can be deleted if not required.

ANNEX A
(to Recommendation E.131)

Glossary of terms

This glossary gives the meanings currently allocated to various terms to facilitate the study and evaluation of control procedures. They are subject to review as the code schemes evolve.

A.1 **supplementary telephone service**

F: service téléphonique supplémentaire

S: servicio telefónico suplementario

Any service provided by the telephone network in addition to the fundamental telephone service.

A.2 **control procedure**

F: procédure de commande

S: procedimiento de control

A method in which information is exchanged in a predetermined forward order and backward order between subscriber and exchange to effect control of a service.

A.3 **command**

F: commande

S: instrucci´on (de control)

A single specific manipulation at the subscriber set causing transmission of a signal which specifically indicates the manipulation to the exchange. For certain control procedures either one single command or a succession of commands are required.

A.4 **character**

F: caract`ere

S: car´acter

A single specific symbol, number or letter used to designate the diallable signal caused by a command.

A.5 **message**

F: message

S: mensaje

A defined entity of information from the subscriber to the exchange pertaining to a call or a control operation for a service sent in one sequence over the signalling medium. A message may consist of one or more characters transmitted in one or more blocks.

A.6 **code**

F: code

S: c´odigo

One character or a sequence of characters forming a part, or the whole, of a message with a specific meaning.

A.7 **mode or type of communication identification**

F: identification du type ou du mode de la communication

S: identificaci´on del tipo o del modo de la comunicaci´on

Information used to give an instruction to the switching equipment to select the required network or mode of communication, for example in the use of a multifunction terminal (video-telephone, 48 kbit/s wideband switched-network service, etc.).

A.8 **access to supplementary services**

F: acc`es aux services suppl´ementaires

S: acceso a servicios suplementarios

Information used to instruct the switching equipment that the associated information relates to a supplementary service.

A.9 **service identification**

F: identification de service

S: identificaci´on de servicio

Information designating a supplementary service.

A.10 **function identification**

F: identification de fonction

S: identificaci´on de funci´on

Information indicating the type or types of process to be applied to the service.

A.11 **block separation**

F: s´eparation des blocs

S: separaci´on de bloques

Information indicating that the next character is the first character of a block of supplementary information.

A.12 **supplementary information**

F: information suppl´ementaire

S: informaci´on suplementaria

Any information, except the mode or type of communication identification, access to supplementary services, service identification, function identification, block separation and message suffix, which is required to be sent by the subscriber to the exchange for the performance of a control operation. The supplementary information may consist of one or more blocks.

A.13 **service code**

F: code de service

S: c´odigo de servicio

A numerical code designating a supplementary service.

A.14 **service code prefix**

F: pr´efixe de code de service

S: prefijo de c´odigo de servicio

A non-numerical code preceding the service code and indicating the type or types of process to be applied to the service.

A.15 **function code**

F: code de fonction

S: c´odigo de funci´on

A code indicating the type or types of process to be applied to the service.

A.16 **block separator**

F: s´eparateur de blocs

S: separador de bloques

The character indicating that the next character is the first of a block of supplementary information.

A.17 **message suffix**

F: suffixe de message

S: sufijo de mensaje

The character indicating the end of the message.

A.18 **abbreviated number**

F: num´ero abr´eg´e

S: n´umero abreviado

The numerical code sent by a caller using the Abbreviated Dialling Service which identifies the telephone number of the party to whom he wishes to be connected.

A.19 **abbreviated dialling prefix**

F: pr´efixe de num´erotation abr´eg´ee

S: prefijo de marcaci´on abreviada

The non-numerical code indicating that the information following is an abbreviated number.

ANNEX B

(to Recommendation E.131)

During the Study Period 1977-80, an international laboratory experiment comparing subscriber perform ance using two of the recommended code schemes and a previous code scheme of AT&T, which was defined in Volume II.2 of the *Orange Book* , was carried out under the auspices of Working Party II/2 (Human Factors). The experiment was conducted in five countries, Canada, Japan, Sweden, the United Kingdom and the United States of America. In the experiment, a sample of subscribers were brought into the laboratory and asked to carry out a number of tasks involving the use of three supplementary services. These tasks were carried out using a pushbutton telephone connected to a simulated telephone exchange. A different group of subscribers was tested using each of the code schemes. Errors committed while carrying out the tasks and the time required to complete them were recorded.

The results of this experiment revealed that there are no large differences in subscriber performance using the three code schemes. The experimental results did, however, reveal rather large differences among tasks. Those tasks that required entry of supplementary information blocks produced higher error rates. This suggests that guidance announcements may be required to help subscribers at each step in complex control procedures. However, it should be pointed out that prior to carrying out the tasks only a brief explanation of the required manipulations was given. It would be desirable for experienced users to be able to override guidance announcements by dialling. One particular task, ordering an alarm call, produced quite high error rates in the entry of the time of day. These errors resulted from the use of a 24 hours clock format for entry of this information. This result suggests that a specific positive recorded announcement with supplementary information may be required to give the subscriber feedback on this point.

Recommendation E.132

STANDARDIZATION OF ELEMENTS OF CONTROL PROCEDURES

FOR SUPPLEMENTARY TELEPHONE SERVICES

1 General

1.1 CCITT Recommendation E.131 describes, in the form of code schemes, three subscriber control procedures for supplementary telephone services of control procedures, it recommends that Administrations wishing to make supplementary telephone services available to their subscribers should choose one of the three code schemes.

1.2 Each of the three code schemes requires the subscriber to send information to the telecommunication system to which he is connected, in a set format and in response to feedback from the system. Certain component parts of the information sent to the system, such as the message suffix, block separators, tone signals and the like, may be considered to be the necessary *elements* involved in the successful operation of supplementary services

1.3 In order to minimize confusion to foreign visitors, and maximize the benefits that accrue from using elements of known meaning, it is desirable to standardize the usage of elements of codes schemes whenever possible, in particular those elements common to all three code schemes.

2 Specific recommendation

2.1 *Message suffix*

It is recommended that the element known as ‘‘ message suffix ´.FS As defined in Recommendation E.131, Annex A.
should be indicated by the symbol

The function of the element is to enable the subscriber to signal to the system that he has input all the information he intends to send at that time.

This Recommendation does not prohibit the use of the square symbol for other purposes.

2.2 *Supplementary information*

For various services it is required that the subscriber sends supplementary information to the telephone exchange for the performance of a control operation. The interpretation of the contents of the supplementary information blocks ‘‘year’’, ‘‘month’’, ‘‘day’’ and ‘‘time’’ are specified below. This information can be used in various services, such as alarm call service, do not disturb service, absent subscriber service, agenda service.

The sequence of the information blocks within a control procedure is not yet specified.

2.2.1 *Year information block*

It is recommended to accept 2 or 4 digits as valid input for the year information block.

If 2 digits are keyed in, this should be interpreted as a year within the next 100 years.

2.2.2 *Month information block*

It is recommended to accept 1 through 12 and 01 through 12 as valid input.

If no year information block is specified, the month is to be interpreted as the month within the next 12 months.

2.2.3 *Day information block*

It is recommended to accept 1 through 28, 29, 30 or 31 and 01 through 28, 29, 30 or 31 as valid input.

If no month information block is specified, the day information block is to be interpreted as the first day within the next 31 days.

2.2.4 *Time information block*

Either the 24 hours or 12 hours clock format may be used. The information block may contain 1, 2, 3 or 4 digits. To indicate *a.m.* or *p.m.* in the 12 hours format an extra digit may be used. If 1 or 2 digits are keyed in, the information is interpreted as hours with

---

As defined in Recommendation E.161.

zero minutes.

One single zero, two zeros and a leading zero are accepted as valid input; the number 24 and higher is not accepted.

If 3 or 4 digits are keyed in, the last two digits are interpreted as minutes. The last two digits may not be 60 or higher. Leading zeros are accepted.

When neither month nor day is specified in another information block, the time is interpreted as a time within the next 24 hours.

Recommendation E.133

OPERATING PROCEDURES FOR CARDPHONES

1 Preamble

Cardphones are payphones that accept cards as a means of payment. Many Administrations have deployed cardphones that accept a variety of card types and technologies. (For further definition of CCITT-recommended credit card types, see Recommendation E.118 on the automated international telephone credit card system.) Cardphones provide an attractive alternative to users through added convenience and payment options. The service also provides benefits to Administrations both economic and operational.

Prolifertation of cardphone terminals and technologies may result in a multiplicity of customer operating procedures. The purpose of this Recommendation is to offer guidelines that will:

1) facilitate customer convenience,

2) ensure ease of use through a common sequence,

3) standardize operating procedures to aid Administrations achieve lower equipment costs and customer instruction costs,

4) increase revenues for Administrations.

2 Operating sequence

This section defines the sequence of actions in setting up a call using a cardphone. Under each step there may be further points of recommendation or preference, or additional comments.

2.1 *Step 1: lift handset*

Comment:

For a loud speaking telephone, step 1 is the action equivalent to going off-hook.

2.2 *Step 2: await signal to pay*

Preferred:

It is preferred to have the dial tone precede payment, but acceptable for it to follow Step 3.

Comment:

The signal may be the dial tone, some other signal or both, e.g. display announcement.

2.3 *Step 3: present means of payment*

Recommended:

If a cardphone also allows payment by coins, initial payment should be in Step 3.

When a prepaid card is used the remaining value of the card should be displayed before use.

When a card is successfully read and is verified as satisfactory, the customer should be given confirmation.

When a card is determined to be invalid, the user should be so informed, e.g. tone, display or announcement.

If further information, such as a personal identification number (PIN), is required, it should follow after the card is read.

Comment:

A card may or may not be retained by the terminal during some or all of a call set-up and connection.

The procedure for dealing with an apparently invalid card is not within CCITT areas of responsibility.

2.4 *Step 4: dial number*

Recommended:

After verification, the required number can be dialled.

If the terminal has a display, it should not display the PIN or other personal access digits.

Preferred:

Step 4 may precede Step 3, but the order given here is preferred.

2.5 *Step 5: conversation or failure of call attempt*

Recommended:

If the card is about to expire, the customer should be given a warning (e.g. tone, display) and reasonable time (minimum 10 seconds) to either terminate the call or to insert an appropriate means of payment.

2.6 *Step 6: termination*

Recommended:

Replacing the handset terminates the call.

Comment:

Where technically possible, when a credit card is used, the call value or cost could be displayed.

If the cardphone has a ‘‘next call’’ feature, its operation terminates a current call without the need to present a means of payment again. The remaining value of a prepaid card should be displayed.

2.7 *Step 7: retrieval of card*

Recommended:

If a card is retained by a terminal during a call, the terminal should automatically eject the card when the handset is replaced. In the case of special equipment, going on-hook is the equivalent step.

Preferred:

If a card leaves the user’s hand during the payment procedure, a method of reminding the user to remove the card should be provided.

Comment:

A prepaid card should carry some indication of the remaining value on the card itself.

Note — A tabular summary and an SDL description of the procedure are contained in Annex A. The SDL diagram is provided as reference for further study and is not a complete description of the operating procedures. For example, differences in the status found in the tabular summary, i.e. under the headings ‘‘Recommended’’, ‘‘Preferred’’ and ‘‘Comment’’, are not stated in the SDL diagram.

3 Glossary of terms

prepaid card

A card carrying a set amount of unit or monetary value that can be used for telephone purposes. The card is decremented based on use and can be either thrown away or re-valued, depending on the technological attributes of the card.

ANNEX A

(to Recommendation E.133)

Human factors cardphone operating procedures

tabular summary
H.T. [1T1.133]

Steps	User action	User options	System reaction	System options	Status
1 With loud speaking telephone, going off hook is equivalent }	Lift handset	{	Comment		
2 Dial tone should precede payment } Signal may be dial tone, display or other }	Await signal to pay Comment	Preferred	{	This step may follow step 3 {	Comment
3 If used as coin phone, payment should be made at this step } Remaining value of prepaid card should be displayed to the customer } Customer should be given confirmation of successful card read } If PIN is required it should be input after the card is read } Card may or may not be retained during part or all of call } Reaction to invalid card handling procedures is up to Administrations }	Present means of payment Recommended Comment Comment	{ Recommended Recommended	Recommended { {	{ { {	
4 If PIN or personal access digits are required, they should not be displayed } Step 4 may precede step 3 but the order given here is preferred (e.g. restricted use cards) }	Dial number Recommended Preferred			{ {	

Tableau A-1/E.133 [1T1.133], p.29

H.T. [2T1.133]

Steps	User action	User options	System reaction	System options	Status
5 Conversation or failure of call attempt } Customer should be given an opportunity to prolong the call } The system should give a warning and options in case of expiring means of payment }	{ {	 { Recommended			
6 Replaced handset terminates call } Customer may be given the option of a next call feature } Next call feature allows for sequence calling without presenting means of payment again } The value remaining on the prepaid card should be displayed } Customer could be shown value or cost of credit card call }	Termination Comment	 Recommended { { Recommended Comment	{ { {		
7 If card is retained, terminal should automatically eject card at call completion } Customer should be reminded if card not removed from terminal at call completion } A prepaid card should carry some indication of the remaining value on the card itself }	Retrieval of card	 Recommended Preferred Comment	{ { {		

Tableau A-1/E.133 [2T1.133], p.

Figure A-1/E.133, p.