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SERIES E: OVERALL NETWORK OPERATION,
TELEPHONE SERVICE, SERVICE OPERATION AND
HUMAN FACTORS

Operation, numbering, routing and mobile service –
International operation –
Tones in national signalling systems

Application of tones and recorded announcements in telephone services

Reedition of CCITT Recommendation E.182 published in
the Blue Book, Fascicle II.2 (1988)

NOTES

1 CCITT Recommendation E.182 was published in Fascicle II.2 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

APPLICATION OF TONES AND RECORDED ANNOUNCEMENTS IN TELEPHONE SERVICES

Introduction

1 This Recommendation gives the responses that telephone networks should provide to subscribers in the operation of both basic and supplementary telephone services. Three levels of response may be given:

- preferred responses based solely upon subscriber requirements;
- accepted responses to be used where technical or economic reasons inhibit the use of preferred responses;
- exceptional responses to be used where severe technical or economic constraints prevent the use of preferred or accepted responses.

2 It has not been possible in some cases to state a universally applicable preference between recorded announcements and tones. The factors influencing such a choice vary widely between Administrations in their relative importance. Some features which make recorded announcements attractive are:

- They can reduce the level of calls to operators thus saving considerable expense.
- From a human factors point of view the use of an excessive number of different tones can be confusing to the user. Recorded announcements give an opportunity to present a far greater spectrum of information.
- They can impart more detailed and specific information than tones.
- They can have less chance of being misunderstood than tones in situations encountered infrequently.

Nevertheless recorded announcements have certain drawbacks also:

- They require more time to convey simple information than a tone indication would.
- They are meaningless to people who do not understand the language used. This fact may make their application in multilingual countries impractical.
- Technical and economic constraints might inhibit their use in some networks.
- Subscribers might not always listen long enough to distinguish between different announcements.

3 In this Recommendation, where no preference is stated between alternative responses, individual Administrations should evaluate the situation in their own networks taking the above factors into account. Additional CCITT studies will be undertaken to better evaluate the relative merits of tones and recorded announcements.

4 A list of tones and announcements used as indications to telephone subscribers is given in Annex A.

The CCITT,

considering

(a) that subscribers set up telephone calls and control supplementary telephone services by means of an interchange of information between the subscriber and the telephone system;

(b) that information sent by the subscriber to the exchange is standardized in several CCITT Recommendations, e.g., Recommendation E.163 for country codes;

(c) that information from the telephone system to the subscriber can be sent in the form of tones or recorded announcements;

(d) that the technical characteristics of the dial tone, the ringing tone, the busy tone, the congestion tone, the special information tone and the warning tone are specified in Recommendation E.180 and that the specification of other tones is studied by the CCITT;

(e) that a certain tone or recorded announcement should unambiguously indicate the desired subscriber action without requiring subscriber knowledge of the operation of the telephone system;

(f) that a standardized application of tones and recorded announcements will improve subscriber performance and will lead to a more efficient use of the telephone network;

(g) that for normal telephone calls and supplementary telephone services an identical application of tones and recorded announcements is desirable;

(h) that it is easy to implement standardization of the application of tones and recorded announcements for new supplementary telephone services, but this is more difficult for existing telephone systems and should be regarded as a long-term objective;

(i) that to avoid abuse of the transfer charge service it is desirable that an operator should be advised when connecting calls to a payphone;

(j) that only tones and announcements are covered in this Recommendation although it can be seen that in some cases a visual indication may be an alternative;

recommends

(1) that this Recommendation shall apply to all telephone services and telephone networks. PABXs should, with certain indicated exceptions, use the same tones as the network in the country in which it is located;

(2) that all tones and recorded announcements should be given as soon as the information received by the telephone network is sufficient to decide which tone or recorded announcement applies, unless there is an established subscriber need for the indication to be given later;

(3) that when a subscriber should wait for a network reaction, no tones or announcement should be given. This condition applies during, e.g., dial-tone delay and post-dialling delay. Exceptionally when a post-dialling delay on an outgoing international automatic call occurs that is likely to cause a subscriber to abandon the call, an appropriate announcement or a comfort *tone* may be used if it has been shown to reduce premature abandonment;

(4) that when a subscriber should start dialling, a dial *tone* should be given. At PABXs this tone may be different from that at the public exchange and in this case the tone is named PABX internal dial *tone*;

(5) that when a subscriber should start dialling and a special condition applies to his line, a special dial tone may be given. This condition applies, for example, during activated diversion of calls to another number;

(6) that, except for PABXs and supplementary services, a second dial tone should not be used and a second application of dial tone should also be avoided;

(7) that when a subscriber should wait until the called party answers and no special condition applies to the line, a ringing tone should be given;

(8) that when the called number is busy and no special condition applies to the called line, a busy tone should be given to the calling subscriber;

(9) that when a special condition of either “call waiting” or “call diversion” applies to a called line, the calling subscriber may be informed about the special condition. The responses should therefore be either a specific recorded announcement or *caller waiting tone* or *ringing tone*. In PABXs a *special ringing tone* may be used for the “call waiting” service.

In the case of “call diversion”, if an announcement is given, it is necessary to give the announcement before the call is diverted. This especially applies if additional call charges have to be paid by the calling party.

(10) that a subscriber should be informed when the network has accepted a control order for a supplementary service, e.g., activation, deactivation, registration, erasure. The responses to be given should be either a *specific recorded announcement*, e.g., “alarm call booked for 7.18”, a general positive recorded announcement, e.g. “order executed” or a positive indication tone;

(11) that a subscriber – after having applied a valid *interrogation order* for a supplementary service – should be informed by the network whether the service is activated or not (status check) or, if the information dialled is identical to the stored information (data check) or, specifically what information is stored (data request).

If a status check or data check applies, the responses to be given should be:

- either a *positive* or *negative general recorded announcement* e.g., “service (not) active” or “information dialled (not) identical to information stored”,
- or an appropriate *positive indication tone*,
- or an appropriate negative indication tone.

If a data request applies, the response should be a *specific recorded announcement* e.g. “alarm call booked for 7.18, 9.30 and 12.35” or “no alarm call booked”.

(12) that a busy subscriber, having the service “call waiting” activated, should be informed that an incoming call is waiting. The response is call waiting tone;

(13) that when the called number cannot be reached or a control order for activation, registration, deactivation, interrogation, or erasure for a supplementary service cannot be executed by the network in one attempt, due to “short-term system nonavailability” but a repeated attempt within a short time may be successful, a congestion tone should be given. This condition applies, for example, if short-term congestion of switching equipment, circuits or memory storage capacity occurs;

(14) that when the called number cannot be reached or a control order for a supplementary service cannot be executed in one attempt due to “recognized long-term nonavailability” and a repeated attempt would have no or small probability of success for a longer period of time (e.g., a few hours), the preferred response is a *specific recorded announcement*, e.g., “the called number is not obtainable because of a network fault, please call again after (1) hour”. Alternatively, a *general recorded announcement* or special *information tone* may be used.

This condition applies when:

- a number is out of order for technical reasons;
- where switching equipment or circuits or memory storage capacity will not be available for at least a few hours.

(15) that when the called number cannot be reached in one attempt because of an unresolved condition of the called number due to administrative reasons, the preferred response is a *specific recorded announcement* e.g., “the number has been changed, the new number is 12345”. Alternatively, a *general recorded announcement* or special *information tone* may be used.

This condition applies when:

- a number is out of order for administrative reasons;
- a number is not yet connected;
- a number has changed.

(16) that when the information dialled by the subscriber, for set-up of an ordinary telephone call or to order a supplementary service, is not valid or cannot be accepted by the network from that particular line and the subscriber should check his information and/or his instructions before making a new attempt:

- the preferred response is a *specific recorded announcement*, e.g., “In international dialling to this country the trunk prefix 0 should be deleted”;
- the accepted response is a general negative announcement, e.g., “You have dialled incorrect information, please consult your instructions”. For PABXs a *negative indication tone* may be used;
- the exceptional response is a special information tone.

This condition applies when the number dialled:

- is non-existing,
- is barred for calls from a particular line,
- contains an incorrect prefix,
- is a control order for a service which is not provided to the particular line.

(17) that when it is desirable to inform the subscriber to continue dialling during the ordering of a supplementary service in the conversational mode, the response to be given should be either a *specific recorded announcement* followed by the appropriate dial tone, or a second dial tone;

(18) that an indication should be given when a payphone user is required to make a payment during a call. The response to be given should be either a *specific recorded announcement* or a pay tone;

(19) that an indication should be given to a public network operator when handling a call from or to a payphone, and that where a tone is used:

- the preferred response is payphone recognition *tone*.

(20) that when a subscriber is asked to speak so as to be recorded by a recording machine, a tone should be given to inform him when to begin to speak; the response to be used is the record tone;

(21) that when the privacy of a conversation on a call cannot be ensured, e.g., because of the intrusion of an operator, the preferred response is the intrusion tone given to both subscribers;

(22) that when the privacy of a conversation on a call cannot be ensured, e.g., because of the presence of a recording machine, the preferred response is the warning tone;

(23) that all the above-mentioned tones should be different.

ANNEX A

(to Recommendation E.182)

List of tones and announcements used as indications to telephone subscribers

Note – This annex is provided to explain the terms in Recommendation E.182 and some related terms. It is not a definitive list and additional refinement will be undertaken as part of future studies.

A.1 *Basic terms*

A.1.1 **audible indication**

F: indication audible

S: indicación audible

An audible indication is understood to be a sound composed of frequencies within the range 300-3400 Hz which is used to inform the user about the state of a telephone call or supplementary service.

A.1.2 **tone**

F: tonalité

S: tono

A tone is an audible indication comprising a small number of discrete frequencies, but excluding speech.

A.1.3 **recorded announcement**

F: annonce enregistrée

S: anuncio grabado

An audible indication in the form of speech.

A.1.4 **call information**

F: information d'appel

S: información de llamada

Call information includes normal address information, control codes for supplementary services, and other information dialled or keyed by the subscriber.

A.2 *Tones*

A.2.1 **dial tone**

F: tonalité de numérotation

S: tono de invitación a marcar

A tone advising that the exchange is ready to receive call information and inviting the user to start sending call information.

A.2.2 **PABX internal dial tone**

F: tonalité interne de numérotation des commutateurs privés

S: tono de invitación a marcar interno de centralitas privadas automáticas conectadas a la red pública
(tono de marcar interno de centralita privada automática, CPA)

A tone advising that the PABX is ready to receive call information and inviting the user to start sending call information.

A.2.3 **special dial tone**

F: tonalité spéciale de numérotation

S: tono especial de invitación a marcar

A tone advising that the exchange is ready to receive call information and inviting the user to start sending call information, at the same time reminding the user that special conditions apply to the termination from which the call is being made.

A.2.4 **second dial tone**

F: seconde tonalité de numérotation

S: segundo tono de invitación a marcar

A tone advising the caller that the network has accepted the call information already sent and asking the caller to provide more information.

A.2.5 **ringing tone**

F: tonalité de retour d'appel

S: tono de llamada

A tone advising the caller that a connection has been made and that a calling signal is being applied to a telephone number or service point.

A.2.6 **busy tone**

F: tonalité d'occupation

S: tono de ocupado

A tone advising the caller that the telephone number is busy.

A.2.7 **congestion tone**

F: tonalité d'encombrement

S: tono de congestión

A tone advising the caller that the groups of lines or switching equipment necessary for the setting-up of the required call or for the use of a specific service are temporarily engaged.

A.2.8 **special information tone**

F: tonalité spéciale d'information

S: tono especial de información

A tone advising the caller that the called number cannot be reached for reasons other than “subscriber busy” or “congestion”.

The tone may also be used in conjunction with recorded announcements to signify that what the caller is about to hear is a recording. It should always be used to precede all call failure announcements.

A.2.9 **warning tone**

F: tonalité d'avertissement

S: tono de aviso

A tone warning participants in a call that privacy of a conversation cannot be ensured where a recording machine is being used.

A.2.10 **intrusion tone**

F: tonalité d'intrusion

S: tono de intervención

A tone advising participants during a call that the privacy of the conversation has been breached, e.g. by the intervention of an operator.

A.2.11 **call waiting tone**

F: tonalité d'appel en attente

S: tono de indicación de llamada en espera

A tone advising the user of the call waiting supplementary service who is engaged on a call that someone is attempting to call his number.

A.2.12 **pay tone**

F: tonalité de paiement

S: tono de pago

A tone advising users of a payphone that a payment is required.

A.2.13 **payphone recognition tone**

F: tonalité d'identification de publiphone

S: tono de identificación de teléfono de previo pago

A tone advising a public exchange operator that the termination to or from which connection is sought is identified as a payphone.

A.2.14 comfort tone

F: tonalité de file d'attente

S: tono de paciencia

A tone advising that the call is being processed and that the caller should wait.

A.2.15 tone on hold

F: tonalité de garde

S: tono de retención

A tone used to reassure a calling subscriber who has been placed on “hold” by a subscriber with PBX or other facilities.

A.2.16 record tone

F: tonalité d'enregistrement

S: tono de grabación

A tone generated by automatic answering equipment to inform the calling subscriber when to begin a message which will be recorded.

A.2.17 caller waiting tone

F: tonalité de demandeur en attente

S: tono de indicación de llamada en espera para el llamande

A tone advising a caller that a called station, though busy, has a call waiting service active.

A.2.18 positive indication tone

F: tonalité d'indication positive

S: tono de indicación positivo

A tone telling a subscriber controlling a supplementary service that the control procedure has been successfully completed and accepted.

A.2.19 negative indication tone

F: tonalité d'indication negative

S: tono de indicación negativo

A tone advising a subscriber that the request for service cannot be accepted.

A.3 Recorded announcements

A.3.1 general recorded announcement

F: annonce enregistrée générale

S: anuncio grabado general

A recorded announcement giving general information about a call attempt or control order.

A.3.2 general positive recorded announcement

F: annonce enregistrée générale positive

S: anuncio grabado general positivo

A recorded announcement given to the user of a supplementary service to advise that the request has been accepted.

Example

“Your order has been executed.”

A.3.3 **general negative recorded announcement**

F: annonce enregistrée générale négative

S: anuncio grabado general negativo

A recorded announcement given to the user of a supplementary service to advise that the request cannot be executed or that the call cannot be completed.

Examples

“Your order cannot be executed.”

“Your call cannot be completed at this time.”

“Please try again.”

A.3.4 **specific recorded announcement**

F: annonce enregistrée spécifique

S: anuncio grabado específico

A recorded announcement giving specific information about a call attempt or control order.

A.3.5 **specific positive recorded announcement without supplementary information**

F: annonce enregistrée spécifique positive sans information supplémentaire

S: anuncio grabado específico positivo sin información suplementaria

A recorded announcement indicating to the user that the request for a particular supplementary service has been accepted.

Example

“The call barring service is now in operation.”

A.3.6 **specific negative recorded announcement without supplementary information**

F: annonce enregistrée spécifique négative sans information supplémentaire

S: anuncio grabado específico negativo sin información suplementaria

A recorded announcement indicating to the user that the request for a particular supplementary service cannot be executed or that the call cannot be completed.

Examples

“Your order for call transfer cannot be executed.”

“The called number is not obtainable because of a network fault.”

A.3.7 **specific positive recorded announcement with supplementary information**

F: annonce enregistrée spécifique positive avec information supplémentaire

S: anuncio grabado específico positivo con información suplementaria

A recorded announcement complete with the supplementary information received indicating to the user that a certain condition is being established.

Example

“An alarm call is booked for 06.30.”

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