5i'

PART I

Recommendations E.100 to E.216

INTERNATIONAL OPERATION

BLANC

MONTAGE: PAGE 2 = PAGE BLANCHE

SECTION 1

DEFINITIONS

Recommendation E.100

DEFINITIONS OF TERMS USED IN INTERNATIONAL TELEPHONE OPERATION

1 telephone call

F: communication t´el´ephonique

S: comunicaci´on telef´onica

The interconnection of two telephone stations.

2 call request

F: demande de communication

S: petici´on de comunicaci´on

The first application made by the caller for a telephone call is called the call request.

In automatic service, the operation of the dial (or key-set) by the caller to obtain a call with his correspondent is comparable to the call request.

3 telephone message

F: conversation t´el´ephonique

S: conferencia telef´onica

An effective call over a connection established between the calling and the called stations.

4 telephone circuit (international or trunk circuits)

F: circuit t´el´ephonique (international ou interurbain)

The word ‘‘international’’ is applied to any relation between countries whether those countries are in the same continent or not.

S: circuito telef´onico (internacional o interurbano)

4.1 The whole of the facilities whereby a direct connection is made between two exchanges (manual or automatic) is called a telephone circuit.

4.2 A circuit is called an international circuit when it directly connects two international exchanges in two different countries.

4.3 The term *trunk circuit* | is reserved for the designation of exclusively national circuits.

Note — The above definitions relate solely to the use of the terms in operational procedures, no matter how the circuits are actually made up.

5 international exchange

F: centre international

S: central internacional

The exchange (at the end of an international telephone circuit) which switches a call destined to or originating from another country.

Administrations shall designate the exchanges in the territory they serve which are to be regarded as international exchanges.

6 international transit exchange

F: centre de transit international

S: central de tr´ansito internacional

An international exchange chosen to establish telephone calls between two countries other than its own is called an international transit exchange.

7 preparation operating

F: exploitation avec pr´eparation

S: explotaci´on con preparaci´on

In preparation operating, after the request is recorded by an operator in the outgoing international exchange another operator in the exchange sets up the call. After the requests have been put in order at the exchange, the controlling operator sees to it that the calling station is connected on the international circuit without loss of time.

A distinction is made between:

1) **advance preparation operating**

Advance preparation operating requires preparation at both the outgoing and incoming international exchanges.

2) **outgoing preparation operating**

Outgoing preparation operating requires preparation at the outgoing international exchange only.

8 demand operating

F: exploitation en service rapide

S: explotaci´on en servicio r´apido

In demand operating (manual or semiautomatic), after the request has been recorded in the outgoing international exchange, an immediate attempt to set up the call is made by the operator at this exchange who took the request.

A distinction is made between:

1) **manual demand operating**

There are two operating methods:

a) **indirect manual demand operating**

In this method of operating, the operator at the incoming international exchange always acts as an interpreter between the operator in the outgoing international exchange and the called party.

b) **direct manual demand operating**

In this method of operating, the operator in the outgoing international exchange speaks with the called party direct.

2) **semiautomatic demand operating**

In this method of operating, the operator in the outgoing international exchange controls the automatic switching operations to obtain either the called station, or an operator in the incoming or transit international exchange (or an operator in a manual exchange in the country of destination).

9 automatic service

F: service automatique

S: servicio autom´atico

In the automatic service, the calling subscriber himself dials (or operates the key-set) the number necessary for connection with the called station.

10 routes

F: voies d'acheminement

S: rutas

The routes followed by international telephone traffic are designated by agreement between Administrations. A distinction is made between:

— primary routes,

— secondary routes,

primary routes : The circuits normally used in a given relation.

secondary routes : The circuits to be used when the primary routes are congested, or when the transmission on the primary routes is not sufficiently good, or it is outside the normal hours of service on the primary routes.

The secondary route(s) may pass through the same countries as the primary routes or through different countries.

11 controlling exchange

F: centre directeur

S: central directora

11.1 The exchange which is responsible for setting up calls and decides the order in which they are to be connected is called the controlling exchange.

11.2 The Administrations concerned shall agree among themselves to esignate the controlling exchange.

11.3 As a general rule, they shall select for this purpose:

1) when a single international circuit is used, the international exchange operating that circuit on the calling party side;

2) when two or more international circuits are used:

a) either the international exchange which has access to the first international circuit on the calling party side, or

b) the international transit exchange designated by joint agreement of the Administrations concerned.

Note — It may be that the international circuits are not operated exclusively by operators at the international exchange where they end; operators at other international or national exchanges may also have access to them by means of an automatic transit device. In such circumstances these international or national exchanges must be treated as though they were a controlling exchange, as far as setting up calls is concerned.

12 controlling operator

F: op´eratrice directrice

S: operadora directora

The controlling operator is the outgoing operator in the controlling exchange who operates the international circuit. The controlling position is the position used by the controlling operator.

Note — However, it may happen that the outgoing international circuit is also operated by an operator in an international or even a national exchange. If this is so, the latter operator is considered as controlling operator.

13 successive phases of a call

F: phases successives d'une communication

S: fases sucesivas de una comunicaci´on

The characteristic instants in the successive phases of the setting-up of an international telephone call in the manual or semiautomatic service are distinguished as follows:

t_0 the caller has placed his request;

t_1 the controlling operator has received all of the call details;

t_2 the controlling operator has made the first attempt to set up the call (this instant corresponds practically to the seizure of the international circuit);

t_3 the called number has replied or the caller has been informed why the call cannot be connected;

t_4 the called person (or called extension) has been obtained or the caller has been informed why the call cannot be connected (the instant is only significant for personal calls);

t_5 the end of the conversation, generally when the caller replaces the receiver;

t_6 disconnection, normally when the international circuit is released by the operator.

Note — In automatic service it is in general difficult to define all the characteristic instants specified above, either because it is impossible to distinguish between them with accuracy or because of differences between the switching systems used. It is, however, possible to define the *total setting-up time* (see definitions 17).

14 duration of a call (conversation time)

F: dur´ee de la conversation

S: duraci´on de conferencia

The interval between the instant the call is actually established between the calling and the called stations and the instant the calling station gives the clearing signal (or the instant when, although the caller has not replaced his receiver, the call is:

— in manual or semiautomatic service, officially cleared down by an operator,

— in fully automatic service, cleared down after some slight delay by the action of the called subscriber's clear-back signal).

The time interval between:

a) $t_5 — t_3$ is the duration of a station call;

b) $t_5 — t_4$ is the duration of a personal call.

15 chargeable duration — charged duration

F: dur´ee taxable — dur´ee tax´ee

S: duraci´on tasable — duraci´on tasada

15.1 The time interval on which the charge for a call is based is called the chargeable duration.

15.2 The chargeable duration is equal to the duration of the call reduced in manual or semiautomatic service, if necessary, to make allowance for any interruptions or other difficulties which might have occurred during the call.

15.3 The duration of a call for which the charge is paid by the calling subscriber (or the called subscriber in the case of a collect call) in the case of manual or semiautomatic operation, is the chargeable duration rounded upwards to the next whole minute.

16 holding time of an international circuit

F: dur´ee d’occupation du circuit international

S: duraci´on de ocupaci´on de un circuito internacional

The time interval $t_6 — t_2$ | during which the circuit is used is the holding time of the international circuit.

This interval includes in particular the call duration, the operating time and the time taken to exchange service information.

Note — The term ‘‘operating time’’ is meant to cover the time taken both by operators and switching equipment.

17 answering time of operators; request transmission time; delay time; setting-up times of an international call

F: d´elai de r´eponse des op´eratrices; d´elai de transmission de la demande; d´elai d’attente; d´elai d’´etablissement d’une communication internationale

S: demora en contestar de las operadoras; tiempo de transmisi´on de la petici´on; demora; tiempo de establecimiento de una comunicaci´on internacional

17.1 At the outgoing international exchange, the *answering time of operators* is the interval between the end of the transmission of the calling signal and its answer by an operator at the distant international exchange.

At the incoming international exchange, the *answering time of operators* is the interval between the appearance of a calling signal on a position or group of positions at that exchange and its answer by an operator.

17.2 The request transmission time is the time interval ($t_1 — t_0$) taken in passing the call request to the controlling operator.

17.3 The time interval ($t_2 — t_1$) is the delay to which the call is subject at the controlling exchange.

The caller is generally informed of this delay.

17.4 The setting-up time of a station call is the time interval ($t_3 — t_1$). The total setting-up time of a personal call is the time interval ($t_4 — t_1$). These times include any delay at the outgoing international exchange.

BLANC

MONTAGE: PAGE 8 = PAGE BLANCHE

SECTION 2

GENERAL PROVISIONS CONCERNING ADMINISTRATIONS

Recommendation E.110

ORGANIZATION OF THE INTERNATIONAL TELEPHONE NETWORK

1 Administrations shall agree among themselves upon the operating methods best suited to the needs of the international relations which concern them, taking into account the conditions and the possibilities of operation.

2 When there is preparation operating, international traffic should be decentralized, whenever circumstances justify it, by the creation of international exchanges in adequate numbers in the centre of the areas to be covered by the service to reduce waiting times and any lengthening of routes.

3 In the direct or indirect manual demand operating , it would be well to concentrate international traffic in a few international exchanges where major groups of international circuits end, so that international circuits may be more efficiently used, and in view, too, of the linguistic knowledge demanded of international operators

4 With semiautomatic and automatic service , it would also be well to concentrate international traffic in a few international exchanges because of:

— the high cost of the technical equipment required in incoming and outgoing international exchanges for this service;

— the linguistic knowledge required of operators , in the case of semiautomatic international service; and

— the need to provide automatic transit in certain exchanges (international routing plan).

However, it would be advisable, when the traffic justifies it, to provide certain international exchanges or national manual exchanges in a country with direct-access circuits to an international automatic exchange so that the operators in these exchanges can set up international semiautomatic calls in automatic relations without the intervention of an operator from the international exchange.

Recommendation E.111

EXTENSION OF INTERNATIONAL TELEPHONE SERVICES

Application of that provision of the *Telephone Regulations* [1] which states that Administrations shall endeavour to extend international telephone services to the whole of their territories might sometimes entail the establishment of calls leaving something to be desired from the point of view of transmission quality. It is therefore desirable:

1) to take no decision to create or extend a new relation unless such means are available as would provide satisfactory service;

2) to make the opening or extension of the relation dependent on the passing of satisfactory test calls.

Reference

[1] *Final Acts of The World Administrative Telegraph and Telephone Conference (Geneva, 1973) — Telegraph Regulations — Telephone Regulations* , ITU, Geneva, 1973.

Recommendation E.112

ARRANGEMENTS TO BE MADE FOR CONTROLLING THE TELEPHONE SERVICES BETWEEN TWO COUNTRIES

Administrations shall agree among themselves upon the operating methods best suited to the needs of the international relations which concern them, taking into account the conditions and the possibilities of operation.

In controlling the organization of the telephone service in a given relation, Administrations might forego the conclusion of formal agreements signed by the heads of Administrations, as there is no need for such agreements in relations where the provisions of the *Telephone Regulations* [1] are mutually and fully accepted. On the following major points agreement can be reached by correspondence:

— *Date on which the relation is to be opened.*

— *Means used to provide the connection:*

— direct (transit) circuit;

— passage through a transit exchange;

— transit country or countries concerned.

— *Classes of call admitted* (List the classes of call and other media of communication, i.e., phototelegraph calls, programme transmissions and television transmissions).

— *Information:* Specify the provisions adopted to permit the exchange of lists of the principal local networks with all the information necessary for routing and accounting of calls.

— *Charging and accounting.*

Reference

[1] *Final Acts of The World Administrative Telegraph and Telephone Conference (Geneva, 1973) — Telegraph Regulations — Telephone Regulations* , ITU, Geneva, 1973.

Recommendation E.113

VALIDATION PROCEDURES FOR AN

AUTOMATED INTERNATIONAL TELEPHONE CREDIT CARD SYSTEM

Preamble

Work is progressing to develop an automated international telephone credit card system as defined in Recommendation E.118.

The expanded use and the increased number of credit cards require card-issuing Administrations (or authorized agents) to implement adequate security against fraudulent use.

Therefore, a critical facet in the provision of such a system is the ability to ensure the validity of the card and its authorized use in a uniform manner. The purpose of this Recommendation is to define the procedures for the validation process between Administrations. This validation process makes no attempt to specify any equipment, facilities and data transmission techniques.

It should be recognized that the procedures for validation of telephone credit cards between Administrations will vary, based on such factors as the capabilities of the credit card systems and the manner in which the card is presented. Flexibility in this process must be maintained in order to maximize participation of Administrations where automated interfaces may not exist or may not be uniformly available. Where such automated interfaces exist, a defined uniform implementation is desirable.

1 Methods of validation

There are several methods to test the validity of credit cards. These may be divided into two general categories — full validation and limited validation.

Full validation requires checking the card number against the card issuer's data base, as well as real-time communication between the call originating and card-issuing Administrations. Full validation is more thorough than other methods and is practical for automated or semi-automated credit card systems.

Limited validation may involve one or more techniques, such as a special character, a code, or a check against a partial data base, as determined by the card-issuing Administration and outlined in a service agreement. Limited validation methods minimize the need for communication between Administrations.

This Recommendation, however, deals only with full validation.

2 Automated validation procedures

2.1 *Validation information flow*

The information from the card and/or the user is presented to a terminal having access to an Administration's telephone credit card system. That system should then communicate with the card user to validate the card and authorize its use.

The validation information flow comprises three messages:

— authorization request,

— request response,

— call disposition.

The *authorization request* | is a message from the call-originating Administration to the card-issuing Administration which provides details of an attempt to use a telephone credit card allows the card issuer to query its own internal systems to respond to the call-originating Administration. The card-issuing Administration should then communicate with the call-originating Administration to provide either a positive or negative response (with a specific indication as to why the authorization should not be granted) to the *authorization request* . This message is defined herein as the *request response* . Feedback should then be given to the user of the card as to the status of the call attempt to the extent possible within the capabilities of the particular Administration's telephone system. A third message denoted as the *call disposition* would be sent, subject to agreements between Administrations and card issuers, by the call-originating Administration to the card-issuing Administration in a timely manner after completion of a call or call attempt. It would contain information to allow a more complete estimate of call activity.

Sections 2.2, 2.3 and 2.4 describe the functional components of the *authorization request* , the *request response* , and the *call disposition* messages respectively.

Table 1/E.113 provides a summary of the functional components and indicates the components which are required and those which are optional.

2.2 *Authorization request*

The following describes the basic component of a request from the call-originating Administration to the card-issuing Administration to validate a credit card and authorize its use.

2.2.1 *Message type identifier (required)*

A message type identifier should be included in this message. It is provided by the call-originating Administration to identify this message to the card-issuing Administration as the *authorization request* .

H.T. [T1.113]

TABLE 1/E.113

Validation information component summary

(Note 1)

Component	Messages		
	Authorization request	Request response	Call disposition (Note 4)
Message type identifier	R	R	R
Message reference identifier	R	R	R
Primary account number	R	R	R
{			
Originating Administration identifier			
}	R	—	—
Expiry date	R (Note 2)	—	—
PIN	R (Note 3)	—	—
Calling telephone number	O	—	—
Called telephone number	O	—	—
Time and date stamp	O	—	—
Response code	—	R	—
{			
Customer sub-account number			
}	—	O	—
Restriction indicator	—	O	—
Specified number(s)	—	O	—
Call disposition code	—	—	R
Call start time	—	—	R
Call end time	—	—	R
Estimated call charge	—	—	O

R Required

O Optional

Note 1 — Optional items are subject to agreements between Administrations.

Note 2 — Required if encoded on the card.

Note 3 — Required if implemented by the card issuer.

Note 4 — This entire message is optional and is subject to agreements between Administrations (see § 2.4).

Tableau 1/E.113 [T1.113], p.1

2.2.2 *Message reference identifier (required)*

A message reference identifier should be included in this message. Its purpose is to uniquely relate this message to a specific validation transaction.

2.2.3 *Primary account number (required)*

The primary account number (19 visible characters — maximum) of the card as defined in Recommendation E.118 should be included in this message as it was obtained from the card or the user. Part of the primary account number, the issuer identification number, can be used by the call-originating Administration to identify the card-issuing Administration.

2.2.4 *Originating Administration identifier (required)*

The call-originating Administration identifier should be included in this message and can be used by the card-issuing Administration to identify the Administration accepting the telephone credit card. The call-originating Administration identifier should contain the issuer identification number of the originating Administration.

2.2.5 *Expiry date (required)*

The expiry date of the card, if one is specified, should be included in this message. The inclusion of this information should not relieve the originating Administration, within the capabilities of its local credit card system, from ensuring that the card has not expired.

2.2.6 *Personal identification number (PIN) (required)*

The use of a PIN is left to the discretion of the card issuer. This information can be used by the card issuer to identify the user and, as applicable, authorize the use of the card. If present, the personal identification number, whether presented by the user or encoded on the card, should be included in this message and preferably be encrypted. The length of the PIN is left to the discretion of the card-issuing Administration.

2.2.7 *Calling telephone number (optional)*

The full international calling telephone number, when available, should be included in this message. The use of this information is subject to agreements between Administrations. This information is necessary for some Administrations to manage the restricted use of some cards as well as for card-issuing Administrations to ensure that the proper agreements exist to bill, collect, and settle for, the call.

2.2.8 *Called telephone number (optional)*

The full international called telephone number should be included in this message. The use of this information is subject to agreements between Administrations. This information is necessary for some Administrations to manage the restricted use of some cards as well as for card-issuing Administrations to ensure that the proper agreements exist to bill, collect, and settle the call.

2.2.9 *Time and date stamp (optional)*

A time and date stamp should be included in this message. This information should contain the month, day, hour, minute and second in Coordinated Universal Time (UTC), that the *authorization request* is entered into the system.

2.3 *Request response*

The following describes the basic components of the response from the card-issuing Administration to an *authorization request* .

2.3.1 *Message type identifier (required)*

A message type identifier should be included in this message. It is provided by the card-issuing Administration to identify this message to the call-originating Administration as the *request response* .

2.3.2 *Message reference identifier (required)*

A message reference identifier should be included in this message. Its purpose is uniquely to relate this message to a specific validation transaction.

2.3.3 *Primary account number (required)*

The primary account number as described in § 2.2.3 should be included in this message. It is provided here for closure between the *authorization request* and the *request response* .

2.3.4 *Response code (required)*

The response code should be included in this message to indicate the result of the *authorization request* . Specific definitions and their corresponding codes are left for further study. Possible conditions for responses may include:

— Service approved

— Service approved on a limited basis: see §§ 2.3.6 and 2.3.7

— Service denied: credit threshold exceeded or due to non-payment

— Service denied: invalid account number or invalid account number/PIN combination

— Service denied: incorrect PIN (subsequent attempts to re-enter may be allowable)

— Service denied: allowable PIN tries exceeded (each card-issuing Administration may set limit; e.g., 3 tries)

— Service denied: expired card

— Service denied: restricted account number or account number/PIN combination

— Service denied: call not permitted from station (i.e., no agreement between card-issuing Administration and call-originating Administration)

— Service denied: card-issuing Administration validation database is unavailable

— Service denied: validation attempt on wrong card issuer

— Error in message format (i.e., message garbled)

— Message type not processable due to missing or incomplete information.

Use of, and action on, particular response codes are subject to agreements between concerned Administrations. For some of the above response conditions, separate retry thresholds should be defined.

Any feedback provided to the card user should not assist a fraudulent user in subsequent attempts at unauthorized use of the credit card.

2.3.5 *Customer sub-account number (optional)*

The customer sub-account number is used to provide the card holder with telecommunications expense control where multiple PIN numbers are associated with a single primary account number. This information is intended to be stored for subsequent inclusion in the billing record so that the billed customer may properly allocate expenses.

2.3.6 *Restriction indicator (optional)*

The restriction indicator tells the call-originating Administration that the card being used is restricted and provides the nature of the restriction. The use of this item is subject to agreement between Administrations and is provided as a supplement to the response code described above to manage restricted cards.

2.3.7 *Specified number(s) (optional)*

A card holder may be restricted to using the card to call only one or more specified numbers. If the called number is not related to the card's account number, this component would pass that restricted number(s) to the call-originating Administration. The use of this component is subject to agreement between Administrations and is provided as a supplement to the response code described above to manage restricted cards.

2.4 *Call disposition (optional)*

The following describes the basic components of a response from the call-originating Administration to the card-issuing Administration to track usage of the card against the customer's credit limit and gather other statistics, to meet operational needs.

The main purpose of this additional message is to provide, on a timely basis, better control over potential fraudulent use of the credit card. It is not meant as a substitute for billing and settlement mechanisms which may be defined by other Recommendations.

2.4.1 *Message type identifier (required)*

A message type identifier should be included in this message. It is provided by the call-originating Administration to identify this message to the card-issuing Administration as the *call disposition* .

2.4.2 *Message reference identifier (required)*

A message reference identifier should be included in this message. Its purpose is uniquely to relate this message to a specific validation transaction.

2.4.3 *Primary account number (required)*

The primary account number as described in § 2.2.3 above should be included in this message. It is provided here for closure between the *authorization request* and the *call disposition* .

2.4.4 *Call disposition code (required)*

The call disposition code should be included in this message. Specific codes need to be defined to indicate whether the call is completed or not completed. Further study is required.

2.4.5 *Call start time (required)*

The date and time at which the call started should be included in this message. If the call disposition code indicates that this call failed, this item of information should indicate the date and time of such failure. The information should contain the month, day, hour and minute in Coordinated Universal Time (UTC).

2.4.6 *Call end time (required)*

The date and time at which the call ended should be included in this message. This information should contain the month, day, hour and minute in UTC.

2.4.7 *Estimated call charge (optional)*

The estimated call charge should be included in this message.

Recommendation E.114

SUPPLY OF LISTS OF SUBSCRIBERS

(DIRECTORIES AND OTHER MEANS)

1 Each Administration shall supply by mutual agreement and free of charge to the Administrations with which a telephone service exists a sufficient number of copies of its lists of subscribers for official use.

2 A subscriber wishing to obtain a telephone directory of another country must apply to his own Administration. If an application for one of its telephone directories is received directly by an Administration from a subscriber in a foreign country, the receiving Administration shall inform the subscriber that such requests should be addressed to his own Administration.

3 An Administration which has supplied telephone directories of its own country to another Administration for distribution to subscribers shall indicate the sale price of the directories plus any postal charges (in principle expressed in gold francs) for the use of the receiving Administration.

4 Accounting concerning the supply of such directories for subscribers' use shall be conducted according to the usual procedure followed between Administrations (see Recommendation D.170 [1]), unless Administrations, by mutual agreement, elect to forego such accounting.

Reference

[1] CCITT Recommendation *Monthly telephone accounts* , Rec. D.170.

Recommendation E.115

COMPUTERIZED INFORMATION SERVICE FOR TELEPHONE SUBSCRIBER NUMBERS IN FOREIGN COUNTRIES

(DIRECTORY ASSISTANCE), RESERVED FOR OPERATORS

1 Preamble

The method to be followed in providing the customers and operators in one country with information on the national significant telephone numbers (as specified in Recommendation E.160) of subscribers in another country depends on the way the information service is organized in the country of destination, distance between the countries, operating procedures, etc.

2 Methods of obtaining information

The operator in the country of origin dealing with international inquiries should be able to obtain information, depending on the organization of the inquiry service in each country, by one of the following methods:

a) from telephone directories;

b) from other information systems sent by the country of destination and kept up-to-date (e.g., microfiches);

c) by calling the information service operator in the country of destination:

— outgoing operators in the originating country should, where language and other conditions permit, have direct access to the appropriate foreign information centre(s) which hold, or are able to obtain from other centres up-to-date information;

— where language and other conditions do not permit the outgoing operator to have direct access to the appropriate foreign information centre, the outgoing operator should call the operator in the international exchange of the country of destination;

— where access to a number of information centres is possible, provision should be made for access to a centralized international information centre or assistance operator in case the originating operator encounters language or other difficulties;

d) by having access to foreign information service computers:

— either via a national computer using appropriate procedures;

— or, in special circumstances, via direct access using dedicated or switched connections.

3 General principles applicable to the various methods of obtaining information

In any relation, Administrations should abide by the following general principles:

a) Inquiries from customers concerning foreign subscribers’ numbers should normally be addressed to operators in the country of origin who will obtain the required information; it may be useful to keep the customer on line while this information is being sought.

b) In order to give operators in the country of origin ready access to the international telephone inquiry service in other countries, it is desirable that Administrations, in conformity with Recommendation E.149, provide common routing codes or abbreviated access numbers to the foreign computerized or manual telephone inquiry services.

c) Technical arrangements should, as far as practicable, prevent access by a subscriber of one country to an operator of the telephone information service of another country. Administrations should not communicate access numbers of telephone information services in foreign countries to their subscribers (except in cases covered in Recommendation E.128).

d) Exceptionally, however, subscribers in one country may be permitted to have access to the information service in another country subject to bilateral agreement between the Administrations concerned.

e) An international system should be able to provide:

— for the desired correspondent: his international number;

— for the locality in which this correspondent resides: the country code and the trunk code.

f) No secret numbers should be issued.

4 Principles for the organization of an interconnected computerized international information service

For the organization of an interconnected computerized international information service, Administrations should abide by the following principles:

a) The international system should be so designed that national systems can be used; each Administration should adapt its system to the international system by means of the appropriate interface procedures.

b) The operator should be able to supply the fullest search data possible, in order to avoid a situation in which the number of subscribers matching the search criteria exceeds the maximum capacity of a single response message.

c) To overcome language difficulties, the questions put to a remote system containing the file to be consulted should be formulated in the language used in the country concerned. This means that the language problems raised by certain inquiry and response features should be resolved by the country making the inquiry.

d) Where, in a given country, the files have been allocated to different computers integrated in a single system, access to the system from a foreign country should be possible via a designated computer.

e) Formats for inquiry and response procedures should be standardized.

f) A question should give rise to only one response message with no dialogue between computers. The response message may cover several subscribers where such subscribers match the search characteristics introduced in the system. The maximum number of subscribers mentioned in a response message depends both on the maximum capacity prescribed for the type of message in question and on the limitations imposed by national systems. Any dialogue concerning all the information provided should be prepared at the national level.

g) With regard to the management of messages, there is no relationship between the inquiry and the response; where for any reason the response to a particular question has not been obtained, the inquiry must be reiterated by the requesting country and on its initiative.

h) To realise the interconnection of computers of different countries, the network procedures described in Annex A should be used. For the highest levels (above level 3), the procedures will be the subject of further study.

i) The structure and coding of the Entry and Reply formats will use the notation defined in Recommendations X.208 and 209, and are described in Annex B.

5 Description of the standards used for inquiry and response

When operator access is given via a national computer to foreign information service computers, unless modified by bilateral agreement, the following *minimum* standards should apply to the inquiry and response process, to permit maximum flexibility in the national information service and compatibility with the international information service.

5.1 *Input information*

5.1.1 The operator should request information using the details supplied by the caller, according to the following format:

— country, locality (geographical area), surname, first name(s) or initial(s), trade or residential address (street name and number), supplementary data (according to bilateral agreement).

5.1.2 Country code, locality (or geographical area) and surname are minimum requirements.

5.1.3 The foreign system should reply to every question asked. If the foreign computer indicates that the information supplied is insufficient, the question should be repeated with more selective information.

5.1.4 Certain specified conditions, i.e. the number is not available (secret number, no listing, etc.) or further information has to be obtained, may be indicated by a standardized coded response.

5.2 *Output information*

The output from the foreign computer system should give the following information as available in the data base, in order to identify the accuracy of the telephone number:

— surname, first name(s) or initial(s), address, locality, country code, national significant number.

5.3 *Alphabet to be used*

The use of punctuation marks will be studied at a later stage.

5.3.1 The Latin alphabet should be employed for inquiries and responses in communication between computers. The systems must in general be able to use the following characters :

— 26 capital letters A | (hy |

— 10 figures 0 | (hy |

— space, full stop

according to International Telegraph Alphabet No. 2 (Recommendation S.1 [1]).

5.3.2 Special signs associated with letters are not transmitted.

5.4 *Description of standardized inquiry and response messages*

The standard formats for inquiry and response shown in Figure 1/E.115 should be used

5.4.1 *Inquiry format*

The question contains the following information:

a) *Message heading*

1) obligatory

— message code identifying a request to the international inquiry service;

— codes identifying the countries of origin and destination; these codes normally consist of the country code (see Recommendation E.163);

— code of the originating terminal. This code should not be used by the receiving country but should be repeated in identical fashion in the response format.

2) optional

— areas reproduced identically in the response:

i) date and time of the origin of the inquiry:

Format: YYMMDDHHMMSS

ii) message number given by the local country.

b) *Data*

1) basic data

— locality

The name of the locality should be introduced according to its exact spelling. Special signs should be replaced by spaces and each space must be introduced as a space.

Abbreviations are not permitted, except for the words ‘‘Sint’’, ‘‘Saint’’, ‘‘Sankt’’, ‘‘San’’, . | |, which are abbreviated by the letter ‘‘S’’ followed by a space.

The mandatory minimum number of characters to be input should be fixed by each country and be mentioned in an operator’s manual. The system of the outgoing country should check whether this minimum is respected. When the name is completely input, it should be followed by a full stop.

The problem of exact native spelling is subject to further study.

Figure 1/E.115 [T1.115] à l'italienne, p.2

— surname or trade name of subscriber

The subscriber's surname should be input according to its exact spelling.

Special signs, including the full stop, should be replaced by spaces and each space must be introduced as a space. Abbreviations should not be allowed. The mandatory minimum number of characters to be input should be fixed by each country and be mentioned in the operator's manual.

The system of the outgoing country should check whether this minimum is respected. When the surname is completely input, it should be followed by a full stop. When the subscriber's surname or trade name is replaced by initials, the characters composing the acronym should be introduced successively without being separated by special signs or spaces.

Numbers forming part of names or acronyms should be introduced as numbers.

2) additional data | for making the search easier)

— name of street or address

The name of the street should be input according to its exact spelling, the complete name of the street being retained. Special signs, including the full stop, should be replaced by spaces and each space must be input as a space.

The words ''Sint'', ''Saint'', ''Sankt'', ''San'', . | | should be abbreviated by the letter ''S'' followed by a space. The mandatory minimum number of characters to be input should be fixed by each country and be mentioned in the operator's manual. The system of the outgoing country should check whether this minimum is respected. If the name is completely input, it should be followed by a full stop. Numbers forming part of the name of the street should be introduced as numbers.

— number of premises

The numerical part of the house number should precede the alphabetical part without separation. Non-significant zeros should be omitted.

— subscriber's first name

Entire first names, initials or a combination of first names and initials should always be separated by spaces.

— supplementary data

This data will not be introduced without there first being a bilateral agreement; it must be preceded by a 2-character code.

The following codes have been defined:

00 = the heading in the guide (e.g., schools)

01 = profession code

02 = instruction for a selective search

03 = the country or province

04 = the category to which the required subscriber number belongs: business, residential or public service.

On the basis of the above data, the computer of destination searches in its files.

5.4.2 *Structure of the inquiry*

ENTRY message

1010 0000 Directory message (telephone)

LENGTH

1010 0000 Telephone (entry)

LENGTH

0011 0000 Entry

LENGTH

0110 0000 Part 1

LENGTH

1000 0000 Message indicators

LENGTH

Message indicators

1000 0001 International indicators

LENGTH

International indicators

1000 0010 Originating Terminal code

LENGTH

Originating terminal code

1000 0011 Date and Time (optional)

LENGTH

Date and time

1000 0100 Message number (optional)

LENGTH

Message number

0110 0001 Part 2

LENGTH

1000 0000 Locality

LENGTH

Locality

1000 0001 Subscriber name

LENGTH

Subscriber Name

1000 0010 Street name (optional)

LENGTH

Street Name

1000 0011 House number (optional)

LENGTH

House Number

1000 0100 First name (optional)

LENGTH

First Name

1000 0101 Heading (optional)

LENGTH

Heading

1000 0110 Profession (optional)

LENGTH

Profession

1000 0111 Supplementary information for search (optional)

LENGTH

Supplementary information for search

1000 1000 Country/Province (optional)

LENGTH

Country or province

1000 1001 Category (optional)

LENGTH

Category

5.4.3 *Response format*

The response contains the following information:

a) *Message heading*

1) obligatory

— message code identifying an answer to the international inquiry service;

— codes identifying both the answering country and the requesting country; these codes normally consist of the country code (see Recommendation E.163);

— code of the originating terminal.

2) optional

— areas generated by the country of the input message:

i) date and time

ii) message number.

b) *Message code and international prefix*

— message code

Always included and common in all answer messages. The coded message must be converted to text by the calling country.

The following codes have been defined:

00 = one or some subscribers have been found

01 = locality insufficiently defined; no subscriber number is forthcoming

02 = street name insufficiently defined; no subscriber number is forthcoming

03 = no subscriber has been found

04 = fault or congestion; no subscriber number is forthcoming

05 = the number of subscribers who correspond to the selection criteria exceeds the maximum capacity for the message. Re-enter the question with more precise information. No subscriber number is forthcoming.

06 = partial fault or congestion. The list of subscriber numbers who correspond to the selection criteria is not complete.

07 = the number of subscribers who correspond to the selection criteria exceeds the maximum capacity of the message. The list of subscriber numbers answering to the selection criteria is not complete. Re-enter eventually the question using more precise indicators.

08 = insufficient search elements have been entered. Re-enter the question with more information. No subscriber number is forthcoming.

— international prefix (in accordance with the CCITT Recommendations) — 3 characters:

i) aligned from the left (if necessary, supplemented by spaces).

c) *Data I*

— trunk code (in accordance with the CCITT Recommendations) — 5 characters

— zone number: aligned from the left (if necessary, supplemented by spaces);

— zeros if no subscriber has been found or if a subscriber's number is not to be disclosed;

— subscriber's number (in accordance with the CCITT Recommendation) — 8 characters:

i) aligned from the left (if necessary, supplemented by spaces),

ii) zeros if no subscriber has been found or if a subscriber's number is not to be disclosed;

— locality, subscriber's surname or trade name, first name, address, number of premises, supplementary data:

— data concerning the subscriber found. If no subscriber has been found, the zone of the corresponding data in the question format;

— subscriber message:

The coded message which must be converted into text by the calling country.

The following codes have been defined:

00 = no comment

01 = subscriber changed address

02 = refer to distant operator.

d) *''Data 2-n''*

— contains the continuation of the selection if other subscribers have been selected. Each supplementary selection uses the same form as in the layout ‘‘*data I* ’’.

5.4.4 *Structure of the response*

REPLY message

1010 0000 Directory message (telephone)

LENGTH

1010 0001 Telephone (reply)

LENGTH

0011 0000 Reply

LENGTH

0110 0011 Part 1

LENGTH

1000 0000 Message indicators

LENGTH

Message indicators

1000 0001 International indicators

LENGTH

International indicators

1000 0010 Originating terminal code

LENGTH

Originating terminal code

1000 0011 Date and time (optional)

LENGTH

Date and Time

1000 0100 Message number (optional)

LENGTH

Message number

0110 0100 Part 2

LENGTH

1000 0000 Message code

LENGTH

Message code

1000 0001 International prefix

LENGTH

International prefix

0110 0101 Part 3 (optional)

LENGTH

0011 0001 Selection

LENGTH

1000 0000 Trunk code

LENGTH

Trunk code

1000 0001 Telephone number

LENGTH

Telephone number

1000 0010 Locality

LENGTH

Locality

1000 0011 Subscriber name

LENGTH

Subscriber name

1000 0100 First name (optional)

LENGTH

First Name

1000 0101 Street name

LENGTH

Street name

1000 0110 House number

LENGTH

House number

1000 0111 Supplementary data (optional)

LENGTH

Supplementary data

1000 1000 Subscriber message (optional)

LENGTH

Subscriber message

0011 0001 Selection

LENGTH

1000 0000 Trunk code

LENGTH

Trunk code

5.4.5 The different parts of the inquiry formulated by the operator of the country of origin should be converted by the national computer into the international standard format. The different parts of the response transmitted in the international standard format should be converted by the computer of the country which made the request into its national format.

6 Charges

Note — As specified in Article 106 of the *Instructions for the International Telephone Service* [2], no charge is made for obtaining information in accordance with Article 51 of the *Instructions* , even when this requires the use of an international circuit.

However, some Administrations may reserve the possibility of applying certain charges in the future. The amounts charged would remain a national arrangement.

ANNEX A
(to Recommendation E.115)

Directory services interconnect bearer services

A.1 *Introduction*

The interconnection of International Directory Databases should be network independent.

The general structure for the arrangement of the physical link (OSI layer 1), link access (OSI layer 2) and network layer (OSI layer 3) are as outlined in Figure A-1/E.115. Where Administrations have provided similar equipment, interconnection may be arranged by bilateral agreement to suit local requirements. This method of interconnection is solely the matter of the Administrations concerned.

Figure A-1/E.115, p.3

A.2 *Identification*

The types of bearer services considered applicable for directory inquiry interconnect are:

i) packet switched public data network (PSPDN);

ii) circuit switched public data network (CSPDN);

iii) public switched telephone network (PSTN);

iv) Administration leased line (point-to-point).

With possible evolution to ISDN, Signalling System No. 7 includes message transfer part and message handling systems.

A.3 *Network interconnection*

The choice of network to be used for the interconnection of computer-based directory systems should be agreed bilaterally. However, to achieve commonality across all types of networks, the link, data transfer and call procedures, as specified in the appropriate Recommendations, should be used.

ANNEX B
(to Recommendation E.115)

Formal definitions of directory messages

Directory Message :: = CHOICE { elephone [1], Other [0 }

Telephone :: = CHOICE { ntry [0], Reply [1 }

Entry :: = SEQUENCE { art 1, Part }

Part 1 :: = [APPLICATION 0] IMPLICIT SE {

MessageIndicators [0] IMPLICIT IA5String,

InternationalIndicators [1] IMPLICIT IA5String,

OriginatingTerminalCode [2] IMPLICIT IA5String,

DateAndTime [3] IMPLICIT IA5String OPTIONAL,

MessageNumber [4] IMPLICIT IA5String OPTIONA }

Part 2 :: = [APPLICATION 1] IMPLICIT SE {

Locality [0] IMPLICIT IA5String,

SubscriberName [1] IMPLICIT IA5String,

StreetName [2] IMPLICIT IA5String OPTIONAL,

HouseNumber [3] IMPLICIT IA5String OPTIONAL,

FirstName [4] IMPLICIT IA5String OPTIONAL,

Heading [5] IMPLICIT IA5String OPTIONAL,

Profession [6] IMPLICIT IA5String OPTIONAL,

SupplementaryInfoForSearch [7] IMPLICIT IA5String OPTIONAL,

CountryOrProvince [8] IMPLICIT IA5String OPTIONAL, Category [9] IMPLICIT IA5String OPTIONA }

Reply :: = SEQUENCE { art 1, Part 2, Part 3 OPTIONA }

Part 1 :: = [APPLICATION 3] IMPLICIT SE {

MessageIndicators [0] IMPLICIT IA5String,

InternationalIndicators [1] IMPLICIT IA5String,

OriginatingTerminalCode [2] IMPLICIT IA5String,

DateAndTime [3] IMPLICIT IA5String OPTIONAL,

MessageNumber [4] IMPLICIT IA5String OPTIONA }

Part 2 :: = [APPLICATION 4] IMPLICIT SE {

MessageCode [0] IMPLICIT IA5String,

InternationalPrefix [1] IMPLICIT IA5String

Part 3 :: = [APPLICATION 5] IMPLICIT SET of Selection

```
Selection :: =      IMPLICIT SE {
    TrunkCode [0] IMPLICIT IA5String,
TelephoneNumber [1] IMPLICIT IA5String,
Locality [2] IMPLICIT IA5String,
SubscriberName [3] IMPLICIT IA5String,
FirstName [4] IMPLICIT IA5String OPTIONAL,
StreetName [5] IMPLICIT IA5String,
HouseNumber [6] IMPLICIT IA5String,
SupplementaryData [7] IMPLICIT IA5String OPTIONAL,
SubscriberMessage [8] IMPLICIT IA5String OPTIONA }
```

References

[1] CCITT Recommendation *International telegraph alphabet No. 2 (ITA2)* Rec. S.1.

[2] CCITT *Instructions for the International Telephone Service* (1st October 1985), ITU, Geneva, 1985.

Recommendation E.116

INTERNATIONAL TELEPHONE CREDIT CARDS FOR USE IN A NON-AUTOMATED ENVIRONMENT

Preamble

This Recommendation concerns only credit card usage in a non-automated environment with the assistance of an operator. The automated international telephone credit card system is described in Recommendation E.118.

1 Credit cards may be issued by Administrations to allow a credit card customer to make telephone calls in the international service at the appropriate charges for each call and have the charges billed to his account in the country which issued the credit card.

The international credit card system should normally be used for calls to the country of the card issuer unless it has been decided otherwise by bilateral agreement between Administrations.

2 The use of credit cards may be allowed for station and personal calls (including data and conference calls).

Station calls paid with credit cards may be subject to a special flat-rate charge to be fixed by the billing Administration.

Personal calls paid with credit cards are subject to a special flat-rate charge to be fixed by the billing Administration.

3 If the holder of a credit card is to derive the maximum benefit from it, he should not be required to show the card at a telephone office; he should be able to make his calls over the telephone, simply quoting the card number to the operator. The number on the card should provide sufficient guarantee of the card's validity.

4 There would be certain advantages in standardizing the general format and numbering scheme together with usage procedures for credit cards used in the international service. This would facilitate the recognition of such cards in hotels, etc., and the handling of calls. It is a matter for national decision whether separate cards are issued for the national and the international telephone services, or whether one card will serve both purposes.

5 Credit cards issued for use in the international service (whether or not they are used for the national service as well) should, as far as practicable, conform with the following specifications:

5.1 *Size*

The credit card should be designed to be carried conveniently on one's person. Current ISO standards define the dimensions of financial transaction cards to be 85.60 mm × 53.98 mm (3.370 × 2.125 inches) and the CCITT considers that telephone credit cards issued by Administrations should have similar dimensions.

5.2 *Information content*

The information on an international telephone credit card should clearly include:

1) the name of the issuing Administration and, where appropriate, the country of issue;

2) the card number (on a combined national/international card, the national number, if different, should be appropriately designated),

and optionally includes:

3) the card holder's name and signature;

4) the date of expiry;

5) instructions on how the card should be used. (Some Administrations may prefer to issue instructions separately.)

5.3 *Numbering system*

The numbering of the card to be issued by Administrations shall be as described in Recommendation E.118, § 3.2.

5.4 *Issuer identifier number assignment and registration procedure*

a) The procedure for the assignment of specific issuer identifier numbers is described in Recommendation E.118, § 3.3.

b) An illustrative registration form can be found in Figure 2/E.118.

5.5 *Transition process*

Guidelines for Administrations to make the transition from the old to the new numbering scheme are contained in Annex A.

ANNEX A
(to Recommendation E.116)

Transition process to the new account number structure

A.1 *Background*

Generally, in today's environment, telephone credit card systems are implemented in a non-automated fashion with the customer typically presenting an international account number verbally to an operator.

Recommendation E.118, pertaining to an automated international telephone credit card system, requires a change in the structure of the account number.

It is not expected that all Administrations, or even a majority of them, will implement automated telephone credit card systems in the near future. Those Administrations planning to implement automated systems will need to continue to accept non-automated cards. Conversely, Administrations continuing to provide non-automated card service will need to accept the new automated card numbering structure.

Therefore, to facilitate both needs, a change in the account number structure for non-automated cards is necessary; the account number structure contained in Recommendation E.118 is usable in both automated and non-automated environments.

Because of the cost of issuing international telephone credit cards, Administrations will continue to use the current validity code until transitioning to the account number structure as defined in Recommendation E.118.

For background information, the old numbering system, as extracted from Recommendation E.116 from the VIIIth Plenary Assembly *Red Book* , is shown below:

‘‘ **Numbering system**

For international purposes the credit card will be composed of two parts:

— the first part will consist of a code to indicate the country of issue followed by a letter denoting the 5-year period of validity;

— the second part will consist of the credit card number assigned by the issuing Administration.

Administrations may incorporate a simple validation check within the credit card number which could be changed when new cards are issued.’’

A.2 *The plan*

The following transition plan will accommodate a range of implementation schedules by Administrations: The use of the current validity code will be extended until December 31, 1993 to allow all Administrations to make the transition to the new account number structure without requiring an interim reissue of credit cards.

Pending appropriate service agreements, Administrations should be prepared to accept the new account number format as early as January 1, 1989.

The transition to the new account number structure shall be completed by 31 December 1993. During the transition period, Administrations should expect to accept credit cards containing account numbers conforming to both numbering schemes. At this time all Administrations will be expected to have reissued cards using the new account number structure. See Figure A-1/E.116.

Figure A-1/E.116, p.

Recommendation E.117

PROVISIONS CONCERNING THE DEVICE SUBSTITUTING A SUBSCRIBER IN HIS ABSENCE

1 Precautions will have to be taken by the Administrations to warn callers of the presence on the called subscriber’s line of a device substituting him in his absence:

a) Devices of this type should be indicated in the telephone directories by means of a special sign .

b) Administrations should invite the owners or renters of such equipment to mention the fact on their letterheads by means of a printed indication.

2 To facilitate the disposal of international traffic on a device of this type, the Administrations should, when consenting to this equipment, insist that it complies with the essential conditions set out in the following Annex.

ANNEX A
(to Recommendation E.117)

Basic specifications for recording apparatus

substituting the called subscriber

A.1 *Operating conditions*

A.1.1 *Delay in answering*

The ringing current from the telephone exchange should be permitted to operate the telephone bell for at least 3 seconds but for not more than 10 seconds before the call is answered by the apparatus. This will enable the call to be answered in the normal way in those countries which wish to provide for such a facility. The timing of this interval (3 to 10 seconds) should be independent of the periodicity or the duration of the ringing current.

A.1.2 *Normal conditions for metering and supervision*

In answering a call the apparatus should loop the subscriber's line and should also give the normal conditions for control of metering and for supervision as with a normal subscriber's installation. The disconnection of the apparatus shall break the loop on the subscriber's line.

A.1.3 *Announcement of the presence of the apparatus*

A.1.3.1 The presence of the apparatus should be indicated to the calling party by means of a verbal announcement following, in principle, immediately on the closing of the loop on the subscriber's line.

A.1.3.2 This verbal announcement should include, in particular, the following:

— first, that it is a recording apparatus;

— the subscriber's name or business style;

— the subscriber's number and particulars of the locality (e.g., Genève, St. Moritz, etc.);

— clear instructions as to the functioning of the apparatus (whether a message may be recorded, and if so, the moment when the message may be recorded and the maximum duration of a recording).

A.2 *Signalling conditions*

A.2.1 *Avoidance of interference from signalling frequencies*

The correct functioning of the apparatus should not depend upon (nor be affected to any extent by) the sending or receiving of signalling frequencies used in the telephone system or specially generated in the apparatus.

A.2.2 *Avoidance of interference with national signalling systems by the tones transmitted by the apparatus*

To avoid interference with the national signalling system of a country by the tones transmitted by the apparatus over the network of that country, it is recommended that:

— the transmission of tones should be in short pulses and not a continuous transmission;

— the tones should not be composed of a single frequency, but should be a mixture of at least two frequencies, so that the guard circuit of the signal receiver of the corresponding country, where there would be a risk of interference, may operate. For this purpose, the choice of the following frequency-combinations should be avoided:

2040 and 2400 Hz   1200 and 1600 Hz   500 and 20 Hz

600 and 750 Hz   1000 and 20 Hz

A.3 *Transmission conditions*

Any recording apparatus which takes the place of the called subscriber should give a level and quality of speech comparable to that given when the station is used by a person.

Recommendation E.118

AUTOMATED INTERNATIONAL TELEPHONE CREDIT CARD SYSTEM

Preamble

The Automated International Telephone Credit Card System and its use throughout the world will provide advantages, conveniences and economic benefits to both users and Administrations.

This is based on a recognition of:

1) the need by Administrations for a reduction in the requirement for operator assistance, adequate security against fraudulent use and facilitated billing procedures, when telephone calls are made at public facilities;

2) the current and anticipated capabilities of credit cards which could provide increased security and new or enhanced services to users;

3) the growing use of more sophisticated credit cards for a variety of services and transactions.

As a result, Administrations are encouraged to prepare for, and introduce, automated international telephone credit card system using the guidance provided in this Recommendation.

The use of the pre-paid or debit card in the national network is a national matter and is not covered by this Recommendation.

Sections 1 through 6 of this Recommendation deal with major attributes of the automated credit card system which may be used by an Administration to establish its own system. Section 7 deals particularly with conditions necessary for international compatibility.

1 Types of credit cards which may be used

1.1 The types of cards which may be used are differentiated in two ways: the organization which issues them and the technology used.

1.2 The automated telephone credit card issued by Administrations and credit cards issued by banks, commercial credit card companies and other organizations can be used so far as the Administration concerned permits such use.

1.3 The IC type card (a card containing a microprocessor and memory in an IC chip) and cards using the magnetic stripe technology may be used if they are equipped with the necessary characteristics for the system.

2 Service agreements to be concluded between the Administrations and credit card issuers (other Administrations, credit card companies, banks, etc.)

The Administration concludes the necessary agreements with credit card issuers (other Administrations, credit card companies, banks, etc.) in order that cards issued by those bodies can be used in the Administration's Automated Telephone Credit Card System. The following are the principal items to be covered in the agreement:

a) payment of the telephone charge to the Administration by credit card issuers;

b) service charges (commission) due to credit card issuers;

c) responsibility on fraudulent use of cards and uncollectibles;

d) exchange of information among Administrations and credit card issuers;

e) validation procedures.

3 Specifications of cards

3.1 *International standards*

For maximum flexibility, convenience of use and economic benefits, the IC and magnetic stripe cards to be issued by Administrations should conform to the relevant ISO standards concerning materials, recording techniques, physical dimensions and the type and format of embossed information.

These are:

ISO/7810 Identification cards — Physical characteristics

ISO/7811/1 Identification cards — Recording technique — Part 1: Embossing

ISO/7811/2 Identification cards — Recording technique — Part 2: Magnetic stripe

ISO/7811/3 Identification cards — Recording technique — Part 3: Location of embossed characters on ID-1 cards

ISO/7811/4 Identification cards — Recording technique — Part 4: Location of read-only magnetic tracks — Tracks 1 and 2

ISO/7811/5 Identification cards — Recording technique — Part 5: Location of read-write magnetic track — Track 3

ISO/7813 Identification cards — Financial transaction cards

Note — The standard for the IC card is to be established by ISO TC 97/SC 17/WG 4.

3.2 *Numbering system*

The numbering of the card to be issued by Administrations shall be as follows based on ISOB/F7812 (Identification card-numbering system and registration procedure for issuer identifiers).

The maximum length of the visible card number (primary account number) should be 19 characters and is composed of the following sub-parts (see Figure 1/E.118):

— major industry identifier (MII),

— country code,

— issuer identifier number,

— individual account identification number,

— check digit. In addition to the check digit, Administrations may incorporate another validation check device in some location on the card which could be changed when new cards are issued.

Note — Major industry and issuer identifier numbers of the form 66xxxx have already been assigned to some Administrations as a transitional measure. Credit cards of this type are also fully compatible with ISO standards.

Figure 1/E.118, p.

3.3 *Issuer identifier number assignment and registration procedure*

a) The assignment of specific issuer identifier numbers should be the responsibility of a country or group of countries as appropriate.

b) These issuer identifier numbers are normally used to distinguish among multiple issuers within a country. However, these numbers may also be used to distinguish individual countries sharing the same country code (as defined in Recommendation E.163) or, if appropriate, to distinguish both countries and issuers.

c) A central registration authority should be established within ITU for the registration and/or cancellation of issuer identifier numbers for telecommunication Administrations. An illustrative registration form is contained in Figure 2/E.118.

d) The ITU should inform its members and coordinate registration information with the ISO as appropriate.

4 Functions of the system

In addition to the card, equipment to be used in the automated credit card system will include a terminal and may also involve supplementary processors, switching and other network components.

Equipment used in this system involves both memory and processing, either completely at the terminal itself, partly at the terminal and partly at another location, or completely at another location.

The major functions of the system are as follows:

4.1 *Card acceptance and reading*

The system should be able to accept, read and, if required, write information on one or more types of cards (IC, magnetic stripe, etc.) intended for use in the system.

4.2 *Card and user validation*

The system should be able to determine whether a card or billing number is valid and ideally whether the user is the actual owner of the card or billing number.

4.3 *Acceptance of other information*

The system should be able to accept other discretionary information supplied by the user or the card including for example call destination, other options and personal identification, etc. over and above the ISO Standard visible 19 characters.

4.4 *Information transfer*

The system should accept user information for immediate or later transfer to other system equipment, perhaps in a different order from which the information was input.

4.5 *Call records*

The system should record accurate and complete call data (including validation indication) required for billing and administrative purposes. A means for protecting and transferring these records to other administrative areas for further processing is also required.

4.6 *User feedback*

The system should, to the extent feasible, provide enough guidance and error feedback to the user via the terminal, thereby making the system easier and more convenient to use.

4.7 *Information security*

The system should, to the extent feasible, protect user information from disclosure to unauthorized parties.

4.8 *Maintenance*

The system should be practical to maintain and repair. This might involve self-diagnostics, automatic trouble reporting and remote software modifications.

4.9 *Card release*

The card should be released upon call completion or at some earlier point in the process.

5 Basic procedures for use of the card

5.1 *Validation of the card and identification of the card holder*

A user presents the card to the terminal for automatic validation of the card. The user may also present personal identification information, for example, PIN (Personal Identification Number), so that the system or the card can verify it and confirm the authorized use of the card.

5.2 *Call request*

After validation of the card and identification of the card holder, the user enters the desired number and other information if required.

5.3 *Call requests at terminals other than the fully automated telephone*

To increase the usefulness of the credit card, it is desirable to be able to use the card at telephones not associated with the automated system. This requires the user to enter billing and identification information (which may or may not necessarily include personal identification information) by other means such as by voice to an operator, manually entering the digits, or using a portable signalling unit. This information is then validated before the call is allowed to proceed. Some Administrations already have such capabilities. When automated international credit cards are used in a non-automated environment with the assistance of an operator, Recommendation E.116 will apply.

6 Operational procedures for charging, billing and collection of the charge

6.1 *Timing of calls and handling of call records*

The chargeable duration or the chargeable number of units of calls may be measured by timing devices either at the terminal or at another location.

The chargeable duration or the chargeable number of units of a call together with other records of the call described in § 6.2 should be transferred to the management system such as the Billing and Collection Centre for further processing of such data.

6.2 *Billing information*

Tariff and accounting principles are contained in the appropriate ‘‘D’’ series Recommendations.

Information required for billing might include the following:

The PIN (or secret code) should not be provided, nor should it appear in the billing information.

a) the card number

b) chargeable duration or chargeable number of units,

c) calling and called numbers, including country codes when appropriate,

d) time of day (hour and minutes), date (day, month, year),

e) validation indicator,

f) other information.

6.3 *Billing and collection of the telephone charge*

To collect the charges of calls made by credit card holders, the bills and/or billing information are sent to the credit card issuers (including foreign Administrations) according to the service agreement described in § 2. However, the provision of billing information to the card issuers is subject to national regulations.

If the calls are made with a credit card issued by the Administrations operating the system, the bill will go directly into the Administration's customer billing system.

7 Use of the card in countries other than the country of origin

7.1 *Reasons for such use*

For maximum convenience, advantage, security and economic benefits in terms of customer satisfaction, operating expense reduction and utilization of the international network, Administrations should admit and encourage the use of foreign cards to the greatest extent feasible.

7.2 *Bilateral service agreements*

Administrations, in order to admit the use of foreign cards with their system, should negotiate bilateral agreements with foreign Administrations (or card issuing bodies) as outlined in § 2.

Administrations wishing to conclude service agreements with foreign card issuers, should carefully select the foreign cards to be used in their system to ensure, among other things, that:

a) there is technical compatibility,

b) card validation and user verification will not be a problem,

c) there will be no problem in the collection of the telephone charge,

d) appropriate procedures are available for lost or stolen cards,

e) cards causing problems will not be honoured.

7.3 *Information to foreign card issuers and customer instruction*

Administrations should keep foreign Administrations or credit card company correspondents fully informed of operating conditions, requirements, restrictions, problems etc. in order that the foreign card issuing body can provide cardholders with customer instructional information to minimize confusion, encourage usage and assist users of cards in other countries.

7.4 *Allowable calls*

For reasons outlined in § 7.1, no limitation should be set on the destination of calls to be made using foreign cards. For example, calls to third countries, calls within a country or calls back to the card issuing country should be permitted.

7.5 *Billing and collection of charges from foreign card issuers*

Tariff and accounting principles are contained in the appropriate ''D'' series Recommendations.

The Series D Recommendations will cover billing and collection of charges, and until new Recommendations are developed or existing Recommendations are modified, bilateral service agreements between Administrations should apply.

Figure 2/E.118 [T1.118], p.6

Figure 2/E.118 [2T1.118], p.7

Recommendation E.119

INSTRUCTION OF STAFF OPERATING INTERNATIONAL POSITIONS

The professional instruction of operating and supervising staff is of the greatest importance in ensuring the efficient use of circuits in the international telephone service; to this end, it is extremely desirable to improve supervisors' and operators' knowledge of the language of other countries and to enable them to become informed about the customs of the subscribers, the organization of the service and the manipulation of equipment at the other end of the circuit.

It is therefore recommended:

1) that, during the training of these operators, they should be provided with some information about methods and operating procedures used in the countries with which they might be connected;

2) that there should be frequent exchanges of supervisors and operators between the telephone exchanges of different countries.

BLANC