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

Operation, numbering, routing and mobile service – International operation – General provisions concerning Administrations

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Validation procedures for an automated international telephone credit card system

Reedition of CCITT Recommendation E.113 published in the Blue Book, Fascicle II.2 (1988)

NOTES

1 CCITT Recommendation E.113 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.

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. This 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.

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).

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*.

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.

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