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**TELEPHONE NETWORK AND ISDN
OPERATION, NUMBERING, ROUTING
AND MOBILE SERVICE**

**INTERNATIONAL BILLED NUMBER
SCREENING PROCEDURES FOR COLLECT
AND THIRD-PARTY CALLING**

ITU-T Recommendation E.109

(Previously "CCITT Recommendation")

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation E.109 was prepared by ITU-T Study Group 1 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 21st of February 1995.

NOTE

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

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SUMMARY

Billed Number Screening messages may be used for determining the validity of billing calls to a telephone number on collect and third-party calls, and any conditions related to the acceptance of charges by the billed party. Information on such conditions would be stored within a Billed Number Screening system, most likely within a database.

This Recommendation describes information used within the Billed Number Screening process at a conceptual level and makes no attempt to specify any equipment, facilities and data transmission techniques. In addition, the use of systems and networks also involve service agreements between ROAs; these agreements are beyond the scope of this Recommendation. It should be noted that future technological developments may allow operator service functions to be automated (e.g. using voice recognition); this Recommendation is not reliant on, nor does it preclude, that automation.

INTERNATIONAL BILLED NUMBER SCREENING PROCEDURES FOR COLLECT AND THIRD-PARTY CALLING

(Geneva, 1994)

1 Preamble

Recognized Operating Agencies (ROAs) are currently building, or planning to build, signalling interfaces for card validation as described by Recommendation E.113. These signalling interfaces could also be used to improve detection of attempts to charge telecommunication services to public telephones in place of, or as a supplement to, the payphone recognition tone described in Recommendation E.180. Use of these interfaces could also allow ROAs to offer optional billing features to customers who do not want collect or bill-to-third party calls charged to their accounts. Where the billed party has not expressly requested the call denial feature, the operator must ask the billed party to accept billing for the collect call or the call between the two other parties.

Billed Number Screening messages may be used for determining the validity of billing calls to a telephone number on collect and third-party calls, and any conditions related to the acceptance of charges by the billed party. Information on such conditions would be stored within a Billed Number Screening system, most likely within a database.

This Recommendation describes information used within the Billed Number Screening process at a conceptual level and makes no attempt to specify any equipment, facilities and data transmission techniques. In addition, the use of systems and networks also involve service agreements between ROAs; these agreements are beyond the scope of this Recommendation. It should be noted that future technological developments may allow operator service functions to be automated (e.g. using voice recognition); this Recommendation is not reliant on, nor does it preclude, that automation.

2 Definitions

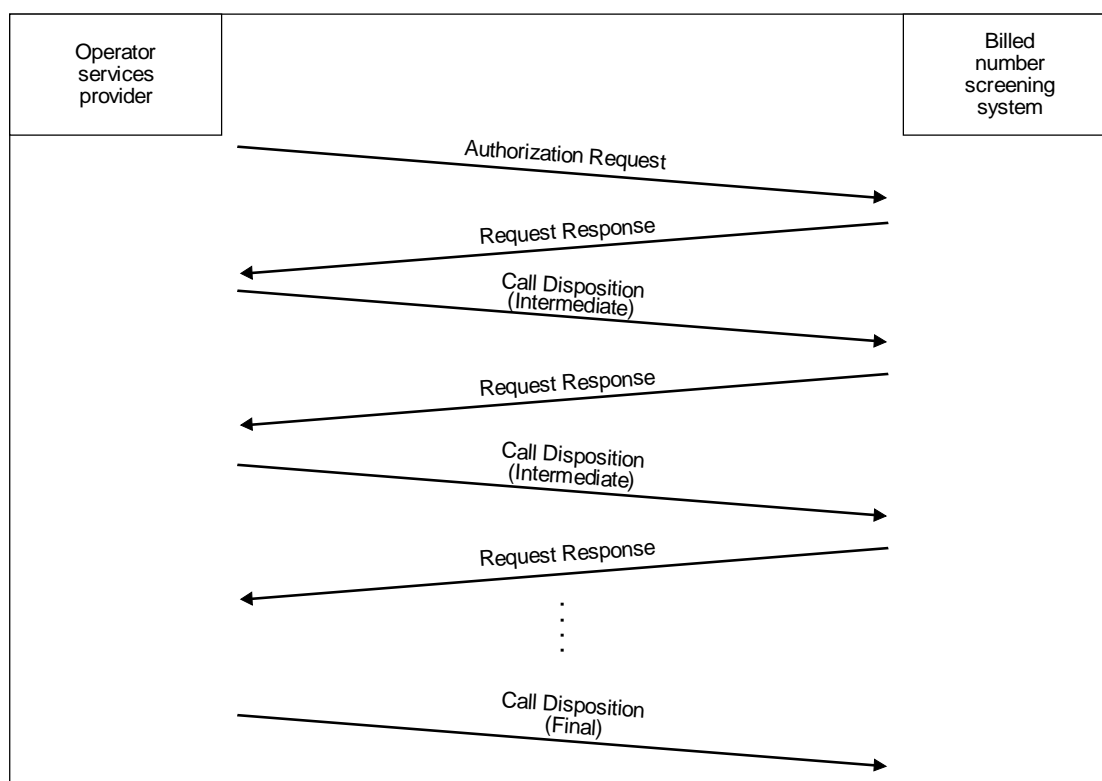
For the purposes of this Recommendation, the following definitions apply:

- 2.1 **Billed Number Screening (BNS):** The authorization of billing to a telephone number for collect and bill-to-third party calls.
- 2.2 **billed number screening system:** The system containing the database to be used to house BNS information.
- 2.3 **end user:** The person requesting the telecommunication service and presenting billing information to the operator for payment of telecommunication services.
- 2.4 **optional:** This information may or may not be present depending on service agreements between ROAs.
- 2.5 **operator services provider:** The ROA accepting the billing information, initiating the screening process and recording the details of the call.
- 2.6 **required:** The information must be present and used on all screening messages.
- 2.7 **telecommunication services provider:** The ROA providing telecommunication transport at the point of call origination.

3 BNS messages

The information flow consists of three messages: the Authorization Request (required), the Request Response (required), and the Call Disposition (optional). The Authorization Request is a message from the operator services provider to the system containing information necessary to screen the billing option being presented by the end user. The BNS system

then returns a Request Response message containing information necessary for the operator services provider to complete the processing of the call. The Call Disposition message may be sent by the operator services provider to the BNS system after the call attempt, at intervals during the call, or at the end of the call; an important purpose of this additional message is to provide, on a timely basis, further protection against potential fraudulent use of the billing system. For Call Disposition messages sent at intervals during a call in progress, a new Request Response message is required to provide direction to the operator services provider on the possible continuance (or termination) of the call (see Figure 1).



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FIGURE 1/E.109
**Intermediate call disposition message with
 matching request response messages**

The following subclauses describe the information components of each of these messages.

3.1 Authorization Request components

- 3.1.1 Message Type (required) – This component identifies the message as the Authorization Request message.
- 3.1.2 Message Reference (required) – This component shall provide a unique number to establish the identification of a specific screening transaction.
- 3.1.3 Call Type (required) – This component shall identify the type of call being attempted. Identified call types shall be “collect” and “bill-to-third party” calls.
- 3.1.4 Billed Number (required) – This component identifies the billed number. The billed number shall identify the station or account to which charges are to be accrued.

3.1.5 Billed Number Numbering Plan (required) – This component identifies the numbering plan associated with the Billed Number. The range of values to be encoded should take into account international numbering plans such as:

- Telephony/ISDN Numbering Plan (see Recommendation E.164);
- Data Numbering Plan (see Recommendation X.121);
- Maritime Mobile Numbering Plan (see Recommendation E.215);
- Land Mobile Numbering Plan (see Recommendation E.212).

3.1.6 Operator Services Provider (required) – This component identifies the ROA sending the Authorization Request.

3.1.7 Telecommunication Services Provider (optional) – This component identifies the ROA providing telecommunication transport at the point of call origination.

3.2 Request Response components

3.2.1 Message Type (required) – This component identifies the message as the Request Response message.

3.2.2 Message Reference (required) – This component shall relate this message as part of a specific screening transaction. It provides closure between the Authorization Request and the Request Response.

3.2.3 Call Type (required) – This component shall identify the type of call being attempted. Identified call types shall be “collect” and “bill-to-third party” calls.¹⁾

3.2.4 Billed Number (required) – This component identifies the billed number. The billed number shall identify the station or account to which charges are to be accrued. It provides supplemental closure between the Authorization Request and the Request Response.

3.2.5 Response Code (required) – This component indicates the result of processing the Authorization Request within the BNS system. Specific definitions and their corresponding codes are left for further study. Possible conditions for responses include:

- service approved;
- service denied, no service agreement;
- service denied, collect calls not accepted;
- service denied, public telephone;
- service denied, bill-to-third party calls not accepted;
- service denied, call not permitted from station;
- error in message format;
- message type not processable due to missing or incomplete information;
- verbal acceptance required;
- terminate call in progress.

3.3 Call Disposition components (optional)

3.3.1 Message Type (required) – This component identifies the message type as the Call Disposition message.

3.3.2 Message Reference (required) – This component contains the message reference identification. Its purpose is to uniquely relate this message as part of a specific screening transaction. The message reference number provides supplemental closure between the Authorization Request and the Call Disposition messages.

¹⁾ Message reference numbers for telecommunications charge card calls may be created by a random number generator, while those for collect/bill-to-third calls may be created by a separate random number generator. It is therefore conceivable that two calls of different types could simultaneously be assigned identical Message Reference Numbers. Care should be taken to ensure that these types of transactions can be uniquely identified and distinguished.

3.3.3 Call Type (required) – This component identifies the type of call attempted. Identified call types shall be “collect” and “bill-to-third party” calls.

3.3.4 Billed Number (required) – This component is provided here for supplemental closure between the Authorization Request and the Call Disposition. For collect and bill-to-third party screening transactions, the billed number shall identify the station or account to which charges are to be accrued.

3.3.5 Call Disposition Code (required) – This component contains information specifying the disposition of the call: to indicate whether and how the call was completed or uncompleted. Specific definitions and their corresponding codes are left for further study. Possible results include:

- collect call (station or person);
- bill-to-third party call within the country of origin (station or person);
- bill-to-third party call to country of billed party (station or person);
- bill-to-third party call to third country (station or person);
- collect call refused;
- bill-to-third party call refused;
- unrateable.

3.3.6 Call Start Time (required²⁾) – This component contains the date and time at which the call started. The information shall contain the month, day, hour, minute and second in Coordinated Universal Time (UTC).

3.3.7 Call End Time (required³⁾) – This component contains the date and time at which the call ended. The information shall contain the month, day, hour, minute and second in Coordinated Universal Time (UTC).

3.3.8 Estimated Call Charge (optional) – This component contains the estimated call charge in Special Drawing Rights (SDRs).

3.3.9 Call Disposition Message Indicator (optional) – This component specifies whether the Call Disposition message is being sent at the end of the call or at intervals during the call.

²⁾ If the collect call or bill-to-third party call is refused, Call Start Time and Call End Time (see 3.3.7) are not sent.

³⁾ If this Call Disposition message is sent as an intermediate message, the Call End Time is null.