International Telecommunication Union

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OF ITU

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

International operation – Operation of international telephone services

## International calling party number delivery

Recommendation ITU-T E.157

ITU-T E-SERIES RECOMMENDATIONS

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# Recommendation ITU-T E.157

## International calling party number delivery

**Summary**

Recommendation ITU-T E.157 provides guidance for international calling party number delivery which is technology neutral. It also clarifies the relationship between calling party number delivery and number identification supplementary service. International calling party number delivery refers to calling party number delivery across boundaries of countries.

**Source**

Recommendation ITU-T E.157 was approved on 24 November 2009 by ITU-T Study Group 2 (2009-2012) under the WTSA Resolution 1 procedure.

## FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

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

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

## INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

## CONTENTS

## Introduction

Operators have developed, or are developing implementation of calling party number delivery between each other. Implementation of calling party number delivery utilizes the features, facilities and applications available in the national public networks and service offerings. It could be guaranteed through the agreements with originating operators and might also be under some form of regulation by national Administrations. In this sense, it is a national matter. However, the delivery of calling party numbers can transcend national boundaries, in which case, it is not only a national matter, but involves more than one country.

There appears to be a trend to suppress transmission across international boundaries of calling party numbers. Such practices have an unfavourable effect on security and economic issues. This Recommendation provides guidance for the delivery of calling party numbers across different countries to improve security and minimize fraud and technical harm as called for by Article 42 of the Constitution.

# Recommendation ITU-T E.157

## International calling party number delivery

### 1 Scope

This Recommendation provides guidance for international calling party number delivery, which is technology neutral. The mechanism to assess the veracity of a particular calling party number (i.e., the international E.164 number) is out of the scope of this Recommendation. Any agreement in countries is a national matter and is not considered in this Recommendation.

### 2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T E.101] Recommendation ITU-T E.101 (2009), *Definitions of terms used for identifiers (names, numbers, addresses and other identifiers) for public telecommunication services and networks in the E-series Recommendations*.

[ITU-T E.164] Recommendation ITU-T E.164 (2005), *The international public telecommunication numbering plan*.

[ITU-T I.251.3] Recommendation ITU-T I.251.3 (1992), *Calling Line Identification Presentation*.

[ITU-T I.251.4] Recommendation ITU-T I.251.4 (1992), *Calling Line Identification Restriction*.

[ITU-T I.251.7] Recommendation ITU-T I.251.7 (1992), *Malicious Call Identification*.

[ITU-T Q.731] Recommendation ITU-T Q.731 (1993), *Stage 3 description for number identification supplementary services using Signalling System No. 7*.

[ITU-T Q.731.7] Recommendation ITU-T Q.731.7 (1997), *Stage 3 description for number identification supplementary services using Signalling System No. 7: Malicious call identification (MCID)*.

[ITU-T Q.764] Recommendation ITU-T Q.764 (1999), *Signalling System No. 7 – ISDN user part signalling procedures*.

[ITU-T Q.1912.5] Recommendation ITU-T Q.1912.5 (2004), *Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control protocol or ISDN User Part*.

### 3 Definitions

#### 3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

**3.1.1 country** [b-ITU-T E.164-Sup.3]: A specific country, a group of countries in an integrated numbering plan or a specific geographical area.

**3.1.2 operator** [b-ITU-T E.212]: An operating agency providing public telecommunications networks or public telecommunication services.

**3.1.3 telephone number** [ITU-T E.101]: The number, derived from the E.164 numbering plan, used by the calling party to establish a call to an end user or a service. The number may also be used for presentation services like Calling Line Identification Presentation (CLIP) and Connected Line Identification Presentation (COLP) and may also be published in different directories and/or directory enquiry services.

## 3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

**3.2.1 calling party number**: The telephone number of the originator of the call.

**3.2.2 international calling party number delivery**: Calling party number delivery across boundaries of countries.

**3.2.3 pilot number**: The telephone number used for selecting a trunk from a group of trunks.

# 4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

CC Country Code

CLI Calling Line Identification

CLIP Calling Line Identification Presentation

CLIR Calling Line Identification Restriction

GoC Groups of Countries

MCID Malicious Call Identification

# 5 International calling party number delivery

International calling party number delivery refers to calling party number delivery across boundaries of countries. The delivery of calling party numbers usually involves an originating network, a terminating network and a transit network, if necessary. A calling party number may be provided by the originating network, transmitted by the transit network(s) and received by the terminating network. For international calling party number delivery (see Figure 1), only the calling party numbers delivered across boundaries of countries are considered. For the purpose of this Recommendation, the originating, transit and terminating networks are presented as one entity. In some national environments this may not be the case.

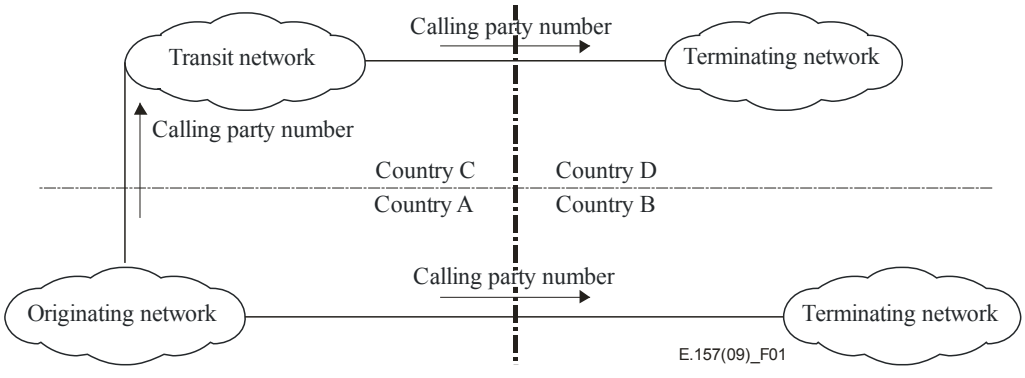


**Figure 1 – International calling party number delivery**

## 6 Calling party number delivery and number identification supplementary service

Calling party number delivery is the basis for identifying the originating parties of calls and providing number identification supplementary services such as CLIP, MCID, which are specified in [ITU-T I.251] (for service) and [ITU-T Q.731] (for signalling) series. If the calling user has activated the calling line identification restriction (CLIR) supplementary service, with the calling line identity being marked as presentation restricted, the originating network may or may not restrict the information conveyed in the generic number and/or calling party number parameter(s) from being sent to the destination network, depending on either bilateral agreement, or be consistent with technical capabilities and national legal and regulatory frameworks. Calling party number delivery is provided independently of the subscribers.

## 7 Delivery guidance

The following ITU-T Recommendations contain provisions that constitute provisions of Recommendation ITU-T E.157: [ITU-T E.101], [ITU-T E.164], [ITU-T I.251.3], [ITU-T I.251.4], [ITU-T I.251.7], [ITU-T Q.731], [ITU-T Q.731.7], [ITU-T Q.764], and [ITU-T Q.1912.5].

Calling party numbers shall, consistent with technical capabilities and national legal and regulatory frameworks, be delivered across boundaries of countries except for the following cases:

a) Depending on bilateral/multi-lateral agreement, the originating network may restrict the calling party number from being sent to the destination network when the CLIR supplementary service is applicable.

b) Restrictions in cases of national legal and regulatory frameworks.

In both cases a) and b), calling party numbers sent across international boundaries shall, consistent with technical capabilities and national legal and regulatory frameworks, contain as a minimum the country code of the originating country.

### 7.1 General principles

**7.1.1** International calling party number delivery shall, consistent with technical capabilities and national legal and regulatory frameworks, be provided based on the relevant ITU-T Recommendations.

**7.1.2** For international E.164 numbers for geographic areas, the delivered calling party numbers shall, consistent with technical capabilities and national legal and regulatory frameworks, be prefixed with country codes to identify in which country the calls are originated before they are delivered from an originating country to a receiving (succeeding) country. In addition to the country code, the delivered calling party number shall include the national destination code, or sufficient information to allow proper billing and accounting, for each call.

**7.1.3** The calling party number sent from an originating (previous) country shall, consistent with technical capabilities and national legal and regulatory frameworks, be transmitted transparently to the destination (succeeding) country by the transit network(s) (including hubs).

### 7.2 Delivery guidance

#### 7.2.1 International E.164 number for geographic areas

a) The format of International E.164 number for geographic areas

Country Code + National (Significant) Number

b) In case the originating party is a subscriber, the calling party number shall be as the following:

i) Normal call

The calling party number delivered in a normal call shall be the number allocated to the subscriber by the operator.

ii) Call forwarding

If call forwarding has occurred, the calling party number delivered shall be the number of the originating party, not the original called number.

iii) Number portability

If an originating party has ported his/her number, the calling party number delivered shall not be changed.

iv) PABX, branch office, private network and group telephone system

If a PABX, branch office, private network or group telephone system cannot send calling party numbers, the calling party numbers delivered shall be the corresponding pilot numbers.

c) For a call originated by a call center or public service platform, the calling party number delivered shall be the number allocated to the service by the administrator.

d) For any party who does not have a telephone number and originates a call, the calling party number field in a corresponding message shall contain the country code from the country that the call has originated and the number allocated to the service platform by the administrator, e.g., if a call is originated from the Internet and paid through a calling card, the calling party number field in the corresponding message shall, consistent with technical capabilities and national legal and regulatory frameworks, contain the country code from the country that the call has originated and the number allocated to the service platform by the administrator.

### 7.2.2 International E.164 number for global services

An international E.164 number for global services can be presented as a calling party number, where the format of the calling party number is recommended below:

Country Code + Global Subscriber Number

In this case, the calling party number shall be the number assigned by the Director of TSB.

### 7.2.3 International E.164 number for networks

An international E.164 number for networks can be presented as a calling party number, where the format of the calling party number delivered across boundaries of countries in case of the involved call parties are not within the same network is recommended below:

Country Code + Identification Code + Subscriber Number

In this case, the Country Code and Identification Code shall be the number assigned by the Director of TSB and the Subscriber number shall be the number assigned by the assignee of the CC+IC.

### 7.2.4 International E.164 number for trials

An international E.164 number for trials can be presented as a calling party number, where the format of the calling party number delivered across boundaries of countries in case of the involved call parties are not within the same network is recommended below:

Country Code + Trial Identification Code + Subscriber Number

In this case, the Country Code and Trial Identification Code shall be the number assigned by the Director of TSB and the Subscriber number shall be the number assigned by the assignee of the CC+TIC.

### 7.2.5 International E.164 number for shared country codes for a GoC

An international E.164 number for shared country codes for a GoC can be presented as a calling party number, where the format of the calling party number delivered across boundaries of countries in case of the involved call parties are not within the same GoC is recommended below:

Country Code+Group Identification Code+Subscriber Number

In this case, the Country Code and Group Identification Code shall be the number assigned by the Director of TSB and the Subscriber number shall be the number assigned by the assignee of the CC+GIC.

# Bibliography


[b-ITU-T E.212] Recommendation ITU-T E.212 (2008), *The international identification plan for public networks and subscriptions*.

[b-ETSI ETS 300 648] ETSI ETS 300 648 (1997-03), *Public Switched Telephone Network (PSTN); Calling Line Identification Presentation (CLIP) supplementary service; Service description*.

[b-ETSI ETS 300 649] ETSI ETS 300 649 (1997-03), *Public Switched Telephone Network (PSTN); Calling Line Identification Restriction (CLIR) supplementary service; Service description*.

[b-ETSI TS 100 514] ETSI TS 100 514 V7.0.0 (1999-08), *Digital cellular telecommunications system (Phase 2+); Line identification Supplementary Services – Stage 1 (GSM 02.81 version 7.0.0 Release 1998)*.

[b-ETSI TS 122 081] ETSI TS 122 081 V7.0.0 (2007-06), *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Line Identification supplementary services; Stage 1 (3GPP TS 22.081 version 7.0.0 Release 7)*.

[b-ITU-T E.164-Sup.3] Recommendation ITU-T E.164 – Supplement 3 (2004), *Operational and administrative issues associated with national implementations of the ENUM functions*.

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