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

International operation – Numbering plan of the
international telephone service

The international public telecommunication numbering plan

Recommendation ITU-T E.164



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Recommendation ITU-T E.164

The international public telecommunication numbering plan

Summary

Recommendation ITU-T E.164 provides the number structure and functionality for the five categories of numbers used for international public telecommunication: geographic areas, global services, Networks, groups of countries (GoC) and resources for trials. For each of the categories, it details the components of the numbering structure and the digit analysis required to successfully route the calls. Annex A provides additional information on the structure and function of international public telecommunication numbers (hereafter referred to as "international ITU-T E.164-numbers"). Annex B provides information on network identification, service parameters, calling/connected line identity, dialling procedures and addressing for geographic-based ISDN calls. Specific ITU-T E.164-based applications, which differ in usage, are defined in separate ITU-T Recommendations.

History

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4.2	ITU-T E.164 Suppl. 3	2002-05-16	2
4.3	ITU-T E.164 Suppl. 4	2003-05-02	2
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6.7	ITU-T E.164 Suppl. 5	2009-11-24	2

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.

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Recommendation ITU-T E.164

The international public telecommunication numbering plan

1 Introduction

The rapid advances in telecommunication technology coupled with increased diversification of customer demands served by a number of different types of dedicated public switched networks (fixed and mobile telephone, data, etc.) have created a need to provide a uniform customer access to the multitude of network structures (i.e., circuit, packet, IP-based, etc.). Implementation of these network architectures is ongoing in a number of countries and eventually these will be able to carry the full range of existing and new services.

To provide a broad base for these new arrangements, numbering has been kept compatible with that originally established for international telephone service.

2 Scope

This Recommendation provides the number structure and functionality for the five categories of numbers used for international public telecommunication: geographic areas, global services, networks, groups of countries (GoC) and resources for trials. For each of the categories, it details the components of the numbering structure and the digit analysis required to successfully route the calls. Annex A provides additional information on the structure and function of international public telecommunication numbers (hereafter referred to as "international ITU-T E.164-numbers"). Annex B provides information on network identification, service parameters, calling/connected line identity, dialling procedures and addressing for geographic-based ISDN calls. Specific ITU-T E.164-based applications, which differ in usage, are defined in separate ITU-T Recommendations, e.g., [ITU-T E.168], Application of E.164 numbering plan for UPT.

3 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), <i>Definitions of terms used for identifiers (names, numbers, addresses and other identifiers) for public telecommunication services and networks in the E-series Recommendations.</i> |
| [ITU-T E.123] | Recommendation ITU-T E.123 (2001), <i>Notation for national and international telephone numbers, e-mail addresses and web addresses.</i> |
| [ITU-T E.129] | Recommendation ITU-T E.129 (2002), <i>Presentation of national numbering plans.</i> |
| [ITU-T E.131] | Recommendation ITU-T E.131 (1988), <i>Subscriber control procedures for supplementary telephone services.</i> |
| [ITU-T E.164.1] | Recommendation ITU-T E.164.1 (2005), <i>Criteria and procedures for the reservation, assignment and reclamation of E.164 country codes and associated identification codes (ICs).</i> |

- [ITU-T E.164.2] Recommendation ITU-T E.164.2 (2001), *E.164 numbering resources for trials.*
- [ITU-T E.164.3] Recommendation ITU-T E.164.3 (2001), *Principles, criteria and procedures for the assignment and reclamation of E.164 country codes and associated identification codes for groups of countries.*
- [ITU-T E.166] Recommendation ITU-T E.166/X.122 (1998), *Numbering plan interworking for the E.164 and X.121 numbering plans.*
- [ITU-T E.168] Recommendation ITU-T E.168 (2002), *Application of E.164 numbering plan for UPT.*
- [ITU-T E.169] Recommendation ITU-T E.169 (2002), *Application of Recommendation E.164 numbering plan for universal international numbers for international telecommunications services using country codes for global services.*
- [ITU-T E.169.1] Recommendation ITU-T E.169.1 (2001), *Application of Recommendation E.164 numbering plan for universal international freephone numbers for international freephone service.*
- [ITU-T E.169.2] Recommendation ITU-T E.169.2 (2000), *Application of Recommendation E.164 numbering plan for universal international premium rate numbers for the international premium rate service.*
- [ITU-T E.169.3] Recommendation ITU-T E.169.3 (2000), *Application of Recommendation E.164 numbering plan for universal international shared cost numbers for international shared cost service.*
- [ITU-T E.190] Recommendation ITU-T E.190 (1997), *Principles and responsibilities for the management, assignment and reclamation of E-series international numbering resources.*
- [ITU-T E.191] Recommendation ITU-T E.191 (2000), *B-ISDN addressing.*
- [ITU-T E.213] Recommendation ITU-T E.213 (1988), *Telephone and ISDN numbering plan for land mobile stations in public land mobile networks (PLMN).*
- [ITU-T E.214] Recommendation ITU-T E.214 (2005), *Structure of the land mobile global title for the signalling connection control part (SCCP).*
- [ITU-T E.331] Recommendation ITU-T E.331 (1991), *Minimum user-terminal interface for a human user entering address information into an ISDN terminal.*
- [WTSA Res.20] ITU WTSA (Florianopolis, 2004) *Resolution 20, Procedures for allocation and management of international telecommunication numbering, naming, addressing and identification resources.*
- [ETSI ETS 300 738] ETSI ETS 300 738 ed.1 (1997-06), *Human Factors (HF); Minimum Man-Machine Interface (MMI) to public network based supplementary services.*
- [ETSI TS 100 907] ETSI TS 100 907 V7.1.0 (1999-08), *Digital cellular telecommunications system (Phase 2+) (GSM); Man-Machine Interface (MMI) of the Mobile Station (MS) (GSM 02.30 version 7.1.0 Release 1998).*

4 Definitions

Within the integrated service environment, the terms used for all networks and services must be compatible and consistent. The following definitions can be found in [ITU-T E.101].

"Address, "dialling plan", "international prefix", "international public telecommunication number", "name", "national (significant) number", "national trunk prefix", "national destination code", "numbering plan", "prefix", "subscriber number" and "trunk code".

This Recommendation defines the following terms.

4.1 country code (CC) for geographic areas

The combination of one, two or three digits identifying a specific country, countries in an integrated numbering plan, or a specific geographic area.

4.2 country code (CC) for global services

A 3-digit country code used to identify the global service.

4.3 country code (CC) for groups of countries

A shared 3-digit country code used in combination with a group identification code to identify a group of countries.

4.4 country code (CC) for networks

A shared 3-digit country code used in combination with an identification code to identify an international Network.

4.5 country code (CC) for trials

A shared 3-digit country code used in combination with a 3-digit trial identification code to identify a trial.

4.6 destination network (DN) code

An optional code field within the international ITU-T E.164-numbering plan which identifies the destination network serving the destination subscriber. It performs the destination network selection function of the NDC. In some instances, it can be combined with a trunk code to form the NDC. The DN code can be a decimal digit or a combination of decimal digits (not including any prefix).

4.7 global service

A service defined by ITU-T, provisioned on the public switched network, to which ITU-T has assigned a specific country code to enable the provision of that international service between two or more countries and/or integrated numbering plans.

4.8 global subscriber number (GSN)

The portion of the international ITU-T E.164-number that identifies a subscriber for a particular global service.

4.9 group identification code (GIC)

A one-digit identification code assigned to a group of countries.

4.10 group identification code administrator (GICA)

The organization entrusted by the assignee with the administration and management of the numbering resources behind a specific CC+GIC.

4.11 groups of countries (GoC)

Several ITU- or UN-recognized countries sharing the same CC+GIC.

4.12 identification code (IC)

The code subsequent to a country code for Networks that uniquely identifies an international Network.

4.13 Network

Internationally interconnected physical nodes and operational systems operated and maintained by one or more ROAs to provide public telecommunications services. Private networks are not included in this definition. Note that the use of capital "N" in Networks indicates that this definition applies.

4.14 trial identification codes

Three-digit identification codes that uniquely identify international public correspondence service trial participants.

4.15 trials

The temporary implementation of a proposed new international public correspondence service for the purpose of determining its technical, operational, and business viability.

5 Abbreviations

This Recommendation uses the following abbreviations:

CC	Country Code
CCITT	International Telegraph and Telephone Consultative Committee
CDLI	Called Line Identity
CLI	Calling Line Identity
COLI	Connected Line Identity
DN	Destination Network
GoC	Groups of Countries
GIC	Group Identification Code
GICA	Group Identification Code Administrator
GSN	Global Subscriber Number
IC	Identification Code
ISDN	Integrated Services Digital Network
ITU	International Telecommunication Union
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
NDC	National Destination Code
NPI	Numbering Plan Identifier
N(S)N	National (Significant) Number
NT2	Network Termination 2
PSTN	Public Switched Telephone Network