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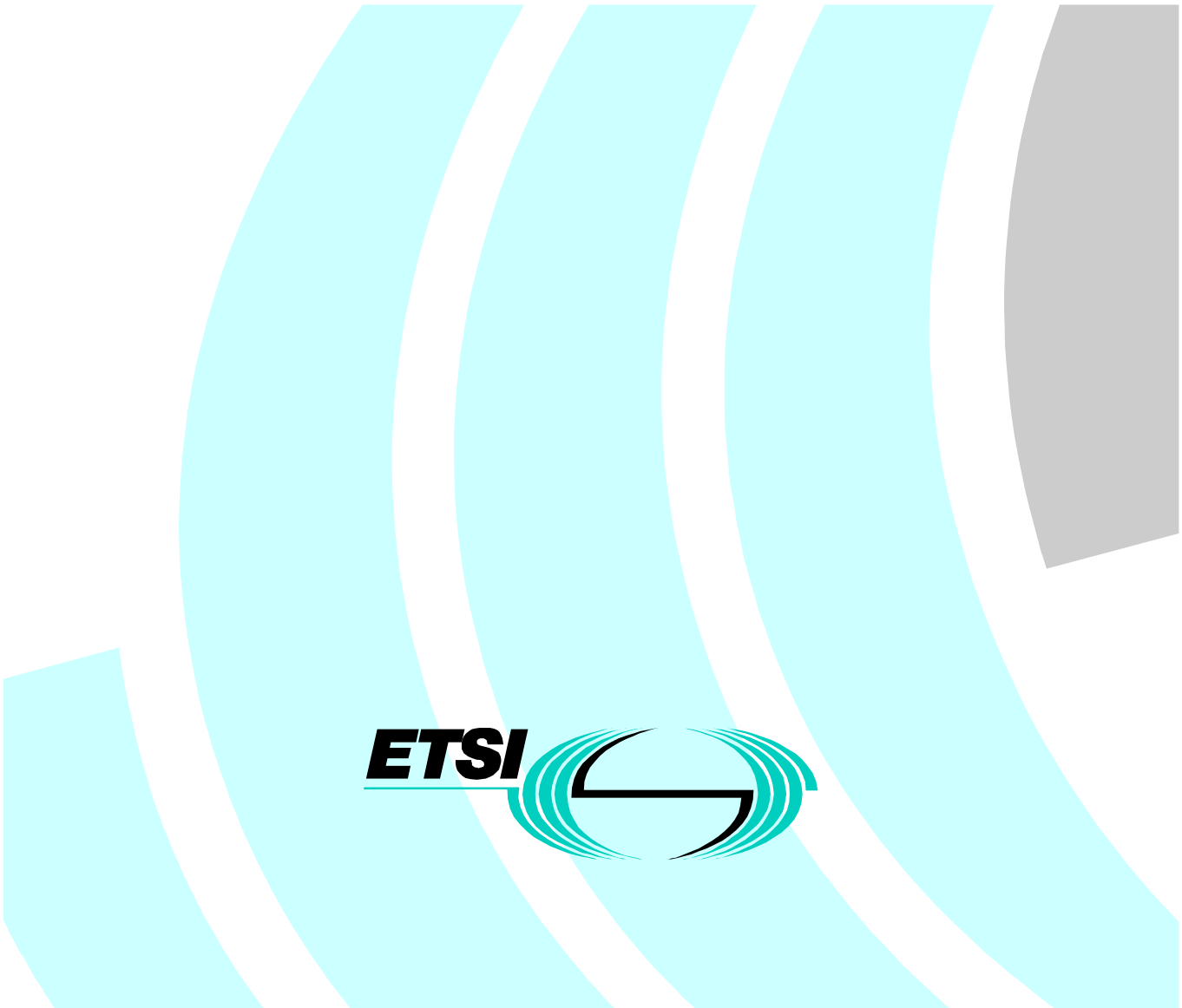
Technical Specification

Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Naming and Addressing; Scenario 1



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Foreword

This Technical Specification (TS) has been produced by ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON).

1 Scope

This Technical Specification deals with naming, numbering, and addressing issues specific to calls from IP based terminal to terminals in an Switched Circuit Network (SCN) for TIPHON scenario 1. It includes the name for the SCN terminal that is used by the IP based terminal.

The present document is applicable to equipment performing the roles of gatekeeper and gateway, and also to the IP end user. Where the text indicate the status of a requirement (i.e. as strict command or prohibition, as authorisation leaving freedom, or as a capability or possibility), this may modify the nature of a requirement within a referenced standard used to provide the capability.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, subsequent revisions do apply.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] ITU-T E.164 (1997): "The International Public Telecommunication Numbering Plan".

[2] TR 101 306: "Telecommunications and Internet Protocol Harmonization Over Network (TIPHON); Requirements for service interoperability; Scenario 1".

[3] ITU-T Recommendation H.323 (version2): "Packet Based Multimedia Communications Systems".

[4] ETS 300 189: "Private Telecommunication Network (PTN); Addressing" December, 1992.

[5] TS 101 312: "Telecommunications and Internet Protocol Harmonization Over Network (TIPHON); Network architecture and reference configurations; Scenario 1".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following definitions apply:

address: A string or combination of decimal digits, symbols, and additional information which identifies a specific termination point(s) of a connection in a public network(s) or, where applicable, in interconnected private network(s).

carrier: A provider of a transit network or services.

Country Code (CC) for geographic areas: The combination of one, two or three digits identifying a specific country in an integrated numbering plan, or a specific geographic area.

dialling plan: A string or combination of decimal digits, symbols, and additional information that define the method by which the numbering plan is used. A dialling plan includes the use of prefixes, suffixes and additional information, supplemental to the numbering plan, required to complete the call.

gatekeeper (GK): The gatekeeper is an H.323 entity on the network which provides address translation and controls access to the network for H.323 terminals, gateways, and MCU's. The gatekeeper may also provide other serviceds to the terminals, gateways, and MCU's such as bandwidth management and gateway location.

gateway (GW): An H.323[3] gateway is an endpoint on a network which provides for real-time, two-way communications between H.323 terminals on an IP based network and other terminals on a SCN.

global service: A service defined by the ITU-T, provisioned on the public switched network, to which the 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.

name: An alpha numeric label used for service reference by end users and is portable

number: A string of digits from a recognized number plan (e.g.E.164 [1]) used for service reference by end users and is portable.

numbering plan: A numbering plan specifies the format and the structure of the numbers used within the plan. It typically consists of decimal digits segmented into groups in order to identify specific elements used for identification, routing and charging capabilities, e.g. within E.164 to identify countries, national destinations, and subscribers. A numbering plan does not include prefixes, suffixes and additional information required to complete the call. The national numbering plan is the national implementation of the E.164 numbering plan. (For the purpose of E.164 national is defined as a country, group of countries, global service or Network).

National Destination Code (NDC): A nationally optional code field, within the E.164 number plan, which combined with the subscriber's number (SN) will constitute the national (significant) number of the international public telecommunication number for geographic areas. The NDC will have a network and/or trunk code selection function. The NDC can be a decimal digit or a combination of decimal digits (not including any prefix) identifying a numbering area within a country (or group of countries included in one integrated numbering plan or a specific geographic area) and/or network/services.

National (Significant) Number N(S)N: That portion of the number that follows the country code for geographic areas. The national significant numbers consists of the National Destination Code (NDC) followed by the Subscriber Number (SN). The function and format of the N(S)N is nationally determined.

National (trunk) prefix: A digit or combination of digits used by a calling subscriber, making a call to a subscriber in his own country but outside his own numbering area.

Network: Internationally interconnected physical nodes and operational systems operated and maintained by one ore more recognised operating agencies to provide public telecommunications service. Private networks are not included in this definition. Note that the use of capital "N" in Networks indicate that this definition applies.

prefix: A prefix is an indicator consisting of one or more digits, that allows the selection of different types of number formats, networks and/or services.

Trunk Code (TC): A digit or combination of digits, not including the national (trunk) prefix, identifying the numbering area within a country (or group of countries included in one integrated numbering plan or a specific geographic area). The TC has to be used before the called subscriber's number when the calling and the called subscribers are in different numbering areas. The TC is a particular application of NDC.

Subscriber Number (SN): The number identifying a subscriber in a Network or numbering area.

E.164 Number: The international telephone number (as defined by ITU-T Recommendation E.164).

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CC	Country Code
FFS	For Further Study (contributions required)
GSM	Global System for Mobile communications
IC	Identification Code
IP	Internet Protocol
ISDN	Integrated Services Digital Network

MCU	Multipoint Control Unit
NDC	National Destination Code
NSN	National Significant Number
PSTN	Public Switched Telephone Network
SCN	Switched Circuit Network
SN	Subscriber Number
TC	Trunk Code
TIPHON	Acronym for ETSI project on Interworking between Voice over IP and SCN

4 Requirements for an acceptable scheme

An acceptable solution shall meet the following requirements:

- The call initiator in an IP network can use the E.164 number of a SCN user to identify the called user. This shall be independent of whether the number has been ported, and whether it refers to a terminal or a user.

NOTE: It is assumed that if another naming scheme is used, the name will be mapped into an E.164 number.

- The SCN may require that the caller be identified in order to initiate the call. This identity shall refer to a terminal, a user, or both.

- The gatekeeper and gateway shall accept the international format of the E.164 number of the called party.

- The gatekeeper and gateway may accept other number forms (for example, national, local, private) by mutual agreement.

5 Naming scheme

If the SCN is a public network, the naming scheme shall conform to the naming scheme in E.164 (see Annex A).

If the SCN is a private network, the naming scheme shall conform to ETS 300 189 [4].

6 Addressing scheme

6.1 Prefixes

The use of prefixes shall not affect the naming scheme as defined in this specification.

The use of prefixes shall not be precluded by the terminal.

NOTE: A prefix is an indicator consisting of one or more digits, that allows the selection of different types of number formats, networks and/or services. Prefixes can also be used for carrier network selection and service selection nationally. Prefixes are not part of the number and are not signaled over international boundaries. It is national matter to decide whether prefixes can be signaled between domestic networks.

6.2 Carrier Selection

In countries and applications where carrier selection is available, carrier selection shall be supported.

The carrier selection may be between providers in the IP domain, SCN carriers, or some type of hybrid depending on the application; (see TR 101 306[2] and TS 101 312 [5]).

The carrier may be selected by default, by pre-selection by the subscriber, or on a per call basis.

NOTE: Other methods may be used on a National basis..

In situations where the gateway is connected to a SCN network where carrier selection is available, the gatekeeper and the gateway shall accept and process carrier selection codes.

In situations where IP domain carrier selection is available, the gatekeeper shall accept and process carrier selection codes.

7 Numbers passed between networks

The format of numbers passed between the IP network and the SCN shall be in accordance with:

- ETS 300 189 for private IP network and private SCN applications;
- E.164 for all other applications.

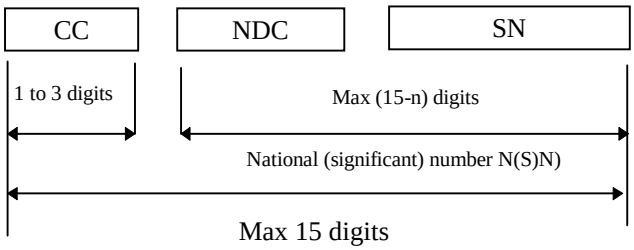
8 Recommendations for further standardisation of naming, numbering, and addressing for TIPHON

This section itemises areas for further standardisation related to Naming, Numbering, and Addressing where work is not currently being carried out.

1) The H.323 [3] series of Recommendations does not allow for communicating carrier selection information. This will need to be standardised in accordance with the requirements in clause 6.
2) In clause 4, it is stated that the SCN may require that the caller be identified in order to initiate the call. Further standardisation is needed concerning this identity.

Annex A (informative): SCN Naming (E.164)

SCN names as defined by recommendation E.164 [1] have the following structure:



n ... Number of digits in the country code

Where **CC** is the country code as defined in E.164, **NDC** is the National Destination Code and **SN** is the Subscriber Number. The ITU assigns country codes to each country (and in some cases, for identifying a service). Individual countries determine how to structure the rest of the number. Frequently, the NDC refers to a geographic area within the country.

History

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