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**Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON);
Numbering; Scenarios 1, 2, 3 and 4**

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ETSI

Postal address

F-06921 Sophia Antipolis Cedex - FRANCE

Office address650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C

Association à but non lucratif enregistrée à la
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Internet

secretariat@etsi.fr

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Contents

Intellectual Property Rights.....	4
Foreword	4
1 Scope.....	5
2 References.....	5
3 Definitions and abbreviations	6
3.1 Definitions	6
3.2 Abbreviations	7
4 Naming scheme for identification of users and terminals within TIPHON compliant networks	7
4.1 Requirements for the naming scheme used within the network	7
4.2 Requirements for the naming scheme supported at the interface to SCNs	8
4.2.1 Public TIPHON compliant networks	8
4.2.2 Private TIPHON compliant networks	8
5 Functionality required within the TIPHON compliant network	8
5.1 General requirements.....	8
5.2 Requirements for Scenario 1 (IP to SCN)	9
5.3 Requirements for Scenario 2 (SCN to IP)	9
5.4 Requirements for Scenario 3 (SCN to IP to SCN).....	9
5.5 Requirements for Scenario 4 (IP to SCN to IP).....	9
Bibliography	10
History	11

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Foreword

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

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1 Scope

The present document specifies the naming, numbering, and addressing scheme and related functionality required within TIPHON compliant networks for calls:

- from Internet Protocol (IP) based terminals to terminals in a Switched Circuit Network (SCN) (TIPHON scenario 1);
- from terminals in an SCN to IP based terminals (TIPHON scenario 2);
- from a terminal in an SCN through an IP based network and back to a terminal in an SCN (TIPHON scenario 3); and
- from a terminal in an IP based network through an SCN and back to a terminal in an IP based network (TIPHON scenario 4).

The objective of the present document is to ensure satisfactory interworking between TIPHON compliant networks and SCNs. An SCN may be a public network or a private network.

These requirements affect terminal equipment and equipment that performs the roles of gatekeeper and gateway, and the calling procedure for the end user.

Where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorization 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.

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2 References (standards.iteh.ai)

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

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- 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, the latest version applies.
- 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 Recommendation E.164 (1997): "The international public telecommunication numbering plan".
- [2] ITU-T Recommendation H.323 (1998): "Packet based multimedia communications systems".
- [3] ETS 300 189: "Private Telecommunication Network (PTN); Addressing".
- [4] ISO/IEC 11571: "Information technology - Telecommunications and information exchange between systems - Private Integrated Services Networks - Addressing".
- [5] TR 101 300 (V1.1): "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Description of Technical Issues".
- [6] TR 101 306 (V1.2): "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Requirements for service interoperability; Scenario 1".
- [7] TR 101 307 (V2.2): "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Requirements for service interoperability; Phase 2".

- [8] TR 101 308: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Requirements for service interoperability; Scenario 3"
- [9] TR 101 338: "Telecommunications and Internet Protocol Harmonization Over Network (TIPHON); Analysis of existing roaming techniques applicable to TIPHON mobility services".

3 Definitions and abbreviations

3.1 Definitions

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

address: string or combination of decimal digits, symbols, and additional information which identifies the specific termination point(s) of a connection in a public network(s) or, where applicable, in interconnected private network(s). (e.g. ITU-T Recommendation E.164 [1]).

carrier: provider of a transit network or services.

country code for geographic areas: combination of one, two or three digits identifying a specific country, countries in an integrated numbering plan, or a specific geographic area. (e.g. ITU-T Recommendation E.164 [1]).

dialling plan: string or combination of decimal digits, symbols, and additional information that defines 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. (e.g. ITU-T Recommendation E.164 [1]).

gatekeeper: gatekeeper is an ITU-T Recommendation H.323 [2] entity on the network that provides address translation and controls access to the network for ITU-T Recommendation H.323 [2] terminals, gateways, and Multipoint Control Units (MCUs). The gatekeeper may also provide other services to the terminals, gateways, and MCUs such as bandwidth management and locating gateways. (e.g. ITU-T Recommendation H.323 [2]).

gateway: ITU-T Recommendation H.323 [2] gateway is an endpoint on a network which provides for real-time, two-way communications between an IP based network and an SCN.

global service: 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 (e.g. ITU-T Recommendation E.164 [1]).

location portability: ability for a customer (subscriber) to change location while retaining the same number

name: alphanumeric label used for service reference by end users. A name may be portable.

number: string of decimal digits from a recognized number plan (e.g. ITU-T Recommendation E.164 [1]).

numbering plan: numbering plan specifies the format and structure of the numbers used within that 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 ITU-T Recommendation E.164 [1] 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 ITU-T Recommendation E.164 [1] numbering plan.

Number portability: ability for a customer (subscriber) to change service provider, location or service while retaining the same number

prefix: prefix is an indicator consisting of one or more digits, that allows the selection of different types of number formats, networks and/or services (e.g. ITU-T Recommendation E.164 [1]).

service provider portability: ability for a customer (subscriber) to change service provider while retaining the same number

Switched Circuit Network (SCN): see TR 101 300 [5].

TIPHON compliant network: network that complies with the mandatory requirements in the TIPHON requirements documents:

- TR 101 306 [6] (for compliance with TIPHON phase 1); and
- TR 101 307 [7] (for compliance with TIPHON phase 2),
- TR 101 308 [8] (for compliance with TIPHON scenarios 1,2, 3),

together with compliance to the parts of the TIPHON specifications in which these requirements are embodied.

E.164 [1] Number: number conforming to the numbering plan and structure specified in ITU-T Recommendation E.164 [1].

3.2 Abbreviations

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

CLI	Calling Line Identity
IP	Internet Protocol
MCU	Multipoint Control Unit
SCN	Switched Circuit Network

4 Naming scheme for identification of users and terminals within TIPHON compliant networks

NOTE: It should be noted that an E.164 [1] number (e.g. ITU-T Recommendation E.164 [1]) and numbers conforming to ETS 300 189 [3] or ISO/IEC 11571 [4] can act in the role of both a name and an address within their respective environment.

4.1 Requirements for the naming scheme used within the network

This subclause applies only to scenarios 1, 2 and 4 because in scenario 3 the TIPHON compliant network does not have directly connected terminals that require numbering.

At least one naming scheme used in TIPHON compliant networks shall meet the following objectives:

- 1) the names shall consist solely of the decimal digits;
- 2) the namespace shall be either a global system or consist of inter-operable local systems;
- 3) the names shall be globally unique for public networks;
- 4) the naming scheme shall enable the use of single-stage dialling;
- 5) the naming scheme shall not preclude the support of mobility and roaming according to TR 101 338 [9];
- 6) the naming scheme shall not preclude the support for portability;

NOTE: Additional overlaid naming schemes may be used.