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Technical Specification

Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); TIPHON/UMTS harmonization; Service capabilities for harmonization between TIPHON and 3G UMTS



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Foreword

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

Introduction

This work is supported by the European Commission eEurope 2001-02/Domain 3.11 project intended to foster improvements in the use and application of the Internet.

1 Scope

The present document identifies where the service capabilities defined in TS 101 878 [2] Release 4 are insufficient to support the service suite of UMTS as identified in TS 102 285 [1].

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

- [1] ETSI TS 102 285: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); TIPHON/UMTS Harmonisation: General Aspects".
- [2] ETSI TS 101 878: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 4; Service Capability Definition; Service Capabilities for TIPHON Release 4".
- [3] ETSI TS 101 882-2: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 4; Protocol Framework Definition; Part 2: Registration and Service Attachment service meta-protocol definition".

3 Definitions and abbreviations

3.1 Definitions

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

bearer: logical association of functional entities in an IP telephony application and transport network that creates an end to end media flow for no longer than the duration of a call

service: set of telecommunication related tasks performed for a customer by a Service Provider and supplied in a business context

user identifier: information that enables an end user or access to be uniquely known

user profile: service specific information about a user of a service application

3.2 Abbreviations

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

| | |
|-------|--------------------------------------|
| CUG | Closed User Group |
| EMTEL | EMergency TELecommunications |
| MLPP | Multi Level Priority and Pre-emption |
| NGN | Next Generation Networks |
| NS | Not Supported |
| PS | Partially Supported |

| | |
|------|------------------------------------|
| SMS | Short Messaging Service |
| SpoA | Service point of Attachment |
| UMTS | Universal Mobile Telephony Service |
| VPN | Virtual Private Network |

4 Service requirements from harmonization studies

The UMTS harmonization study [1] has identified some services in UMTS that cannot be supported by combination of existing (i.e. as identified by TS 101 878 [2]) TIPHON service capabilities. These services are listed in table 1. The remainder of the present document identifies extensions to the provisions of TS 101 878 [2] that may allow emulation of the services in UMTS by combination of TIPHON/NGN service capabilities. In TIPHON, the service logic is not explicitly standardized. The combination of service capabilities to generate services is part of the application framework. It is understood that UMTS standardizes the service or application and the underlying capabilities together.

Table 1: Evaluation of the UMTS services Not or Partially supported by TIPHON Release 4

| 3GPP Service | Supported by TIPHON | Comments |
|---|---------------------|---|
| CUG | NS | Specific CUG authorization mechanism does not exist in profile class |
| Multicast services | NS | Not part of TIPHON scope |
| Enhanced Pre-emption service (eMLPP) | NS | Not widely supported and recommended against in public networks (see EMTEL) |
| Charging information | NS | Not part of TIPHON scope |
| Location Services | PS | Location determination capabilities not provided in profile class |
| Enhanced support for user privacy for Location Services | PS | Security service capabilities C2 (access control to data), C3 (access control to data in terminal) and E3 (confidentiality of data in transit between SpoAs) need to explicitly address privacy of location data |
| Presence Services | PS | Presence in TIPHON is coupled with Registration. Availability management is supported as a capability but may need codepoint extension in an UMTS environment within the profile class |
| Generic user profile | PS | Data in TIPHON profile addresses only the TIPHON service capability set and the actions they make on the profile. As the profile class is extended in reaction to other actions identified in this table so the profile data model will be extended |
| Network Identity and Time Zone (NITZ) | NS | |
| Multimedia Call Control capabilities | NS | Multimedia call control is out of scope of TIPHON Release 4, but the capabilities in Release 4 could be used to support these services |
| Terminal Capabilities | NS | |
| Data Session Control capabilities | NS | Data session control capabilities are out of scope of TIPHON Release 4, but the capabilities in Release 4 could be used to support these services |
| Account Management capabilities | NS | |
| Policy Management capabilities | NS | |
| Presence and Availability Management capabilities | PS | See presence and location |
| Multimedia services | NS | Multimedia services are out of scope of TIPHON Release 4, but the capabilities in Release 4 could be used to support these services |
| Multimedia Messaging Service | NS | Service control logic for Multimedia Messaging service is out of scope of TIPHON Release 4, but the capabilities in Release 4 could be used to support these services |
| Short Message Service (SMS) | NS | |
| Subscription management | NS | |
| Trace management | PS | Supported in the context of user identity |

NOTE: Services per-se are not supported in TIPHON. However services may be created in a TIPHON environment by combination of service capabilities.

The above services can be categorized as:

- Multimedia call control services;

- Location Based Services;
- Presence based services.

The impact of above services on TIPHON service capabilities is described in clauses 4.1 to 4.3.

4.1 Multimedia services

Multimedia services are characterized in UMTS and in TIPHON by one or more of the following attributes:

- Bearer multiplicity (may require more than one bearer);
- Bearer topology (point to point, point to multipoint; or multipoint to multipoint); and
- Symmetry (symmetric or asymmetric).

TS 101 878 [2] already supports the service capabilities to provide above services. No extensions to service capabilities are proposed in the present document to support multimedia in TIPHON.

4.2 Location based services

Location based services require up-to-date information on user location. The registration service capabilities in TIPHON require location data (see TS 101 882-2 [3]) to be provided. The ability to interrogate only the location of a user from the profile is not provided in TIPHON Release 4. This capability is specified in clause 5.1 of the present document.

4.3 Presence services

Presence services require the information on user status. The status information available on a user may include user "availability", "registration status", willing to accept calls etc. The capability to download user status related data is already supported in TIPHON, but the capability to update data is not supported. This capability is specified in clause 5.1.

5 Extensions and enhancements to TIPHON Release 4 service capabilities

5.1 Profile class

Extensions to the suite of service capabilities in the profile class are required as follows:

<<sc>> Interrogate_Location (regID) : location

- This capability will return the current location value maintained in the profile belonging to the user identified by regID.

<<sc>> Update_Location (regID, location).

- This capability update the current location value maintained in the profile belonging to the user identified by regID.

In addition the service capability setStatus should be extended to allow the user to set availability for each service.

<<sc>> UpdateServiceStatus(regID, service, status)

- The status may mark the service as available or unavailable under user control independent of the overall availability of the user identified by regID.

Service capabilities to support the Closed User Group (CUG) capabilities of UMTS are required as below.

<<sc>> addCUGtoProfile (regID, cugID, cugMode)

- This capability adds the CUG identified by cugID to the service profile of the user identified by regID. The cugMode identifies the call modes allowed for the user in the CUG.

<<sc>> authorizeCUG (regID, cugID)

- This service capability overloads the existing authorize service capability to specifically authorize the user to attach to the CUG.

<<sc>> removeCUGfromProfile (regID, cugID)

- This capability removes the CUG identified by cugID to the service profile of the user identified by regID.

A data type required to be defined to indicate the form of calls that the CUG-user can make.

- CUG calls only;
- CUG with incoming access, i.e. can also receive calls, which are not subject to CUG restrictions;
- CUG with outgoing access, i.e. can also make calls, which are not subject to CUG restrictions; or
- CUG with incoming and outgoing access, i.e. can also make and receive calls, which are not subject to CUG restrictions.

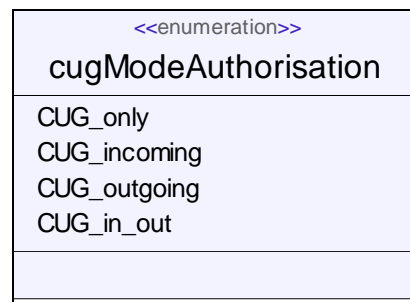


Figure 1: UML definition of authorization data element

5.2 Call class

No changes identified.

5.3 Messaging class

No changes identified.

5.4 Bearer class

No changes identified.

History

| Document history | | |
|-------------------------|---------------|-------------|
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