3GPP TR ab.cde Vx.y.z (yyyy-mm)

Technical Report

3rd Generation Partnership Project;
Technical Specification Group <TSG name>;
<Title 1;
Title 2>
(Release 6)

GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

Remove GSM logo from the cover page for pure 3rd Generation documents.

Select keywords from list provided in specs database.

Keywords

<keyword[, keyword]>

3GPP

Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

http://www.3gpp.org

3GPP

Contents

Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

    x   the first digit:

        1   presented to TSG for information;

        2   presented to TSG for approval;

        3   or greater indicates TSG approved document under change control.

    y   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

    z   the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

This TR defines the security architecture, trust model and requirements for the presence services. Presence services enable the spreading of presence information of a user to users or services. A presence entity or presentity comprises the user, users devices, services and services components. It is the intention that this platform will enable new services like e.g. enhancement to chat, multimedia messaging, cinema ticket information, the score of a football game and so on.

A user has the possibility to control if her or his information shall be available to other users or services. This control is possible to achieve with high granularity e.g. explicitly define which user or users and services that shall have access to presence information.

A presentity is an uniquely identifiable entity with the capability to provide with presence information and it has only one principal associated with it. Hence a principal is distinct from all other principals and can be e.g. a human, organisation, program or even a collection thereof. One example of such a relation is when the presentity is a terminal and the principal of the terminal is the subscriber. A watcher is also an uniquely identifiable entity but with the aim to fetch or request information about a presentity. There are access rules that set the rules for the presence service how presence information gets available to watchers.

Presence information consists of a number of elements or presence tuples as defined in [XXXX].

1 Scope

This clause shall start on a new page. No text block identified. Should start:

The present document …

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, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[<seq>]   <doctype> <#>[([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

[1]   3GPP TR 41.001: "GSM Release specifications".

[2]   3GPP TR 21 912 (V3.1.0): "Example 2, using fixed text".

3 Definitions, symbols and abbreviations

Delete from the above heading those words which are not applicable.

Subclause numbering depends on applicability and should be renumbered accordingly.

3.1 Definitions

For the purposes of the present document, the [following] terms and definitions [given in ... and the following] apply.

Definition format

<defined term>: <definition>.

example: text used to clarify abstract rules by applying them literally.

3.2 Symbols

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

Symbol format

<symbol>   <Explanation>

3.3 Abbreviations

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

Abbreviation format

<ACRONYM>   <Explanation>

4 Security Requirements for Presence Service

In this section some important requirements that will or may affect the security solutions for presence are identified.

4.1 Roles in Presence Architecture

In this section the different roles that come into play for presence are identified and described.

Figure 1 Overview of the presence architecture
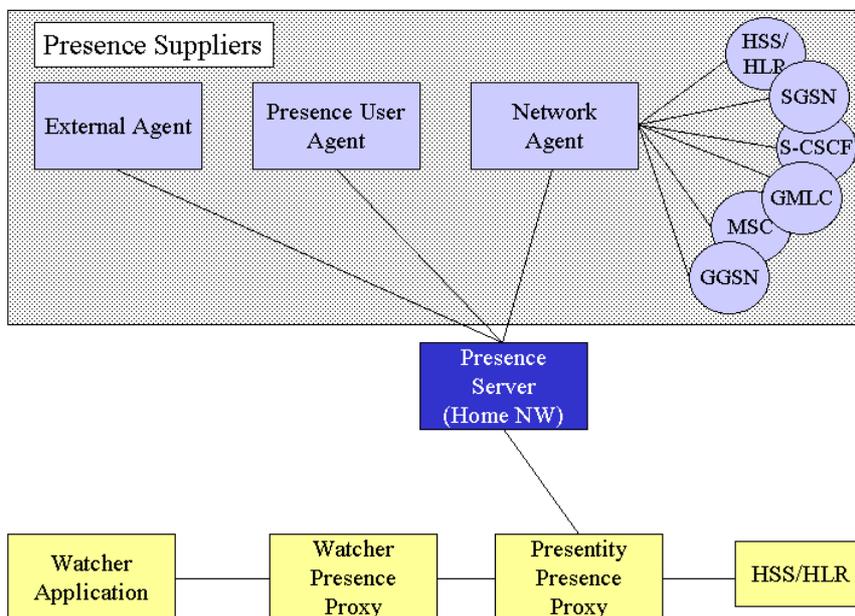
4.1.1 Watcher application

- An application that can request and obtain presence information

- In IMS a watcher application can be located in the UE registered and the UE is registered in the S-CSCF

- In IMS a watcher application cab be located in an AS behind an ISC interface

4.1.2 Watcher presence proxy

- Authenticates the Watcher

- Generates accounting information

4.1.3 Presentity Presence Proxy

- Generates accounting information

- Determines the identity of the presence server

4.1.4 Presence Server

- Transforms presence related information from different sources to on single presence document

- Allows user to subscribe and fetch presence information

- Provides with presence information to any watcher application

- Provides with presence information to allowed watcher applications specified in a list

4.1.5 Presence User Agent

- Sends presence information to the presence server

- Manages Access Rules

- Can be located in the UE

- Can be located in the network e.g. for SMS or WAP scenario

4.1.6 Network Agent

- May receive presence information from HSS, S-CSCF, MSC, SGSN, GGSN and GMLC

- Sends presence information to the Presence Server in the Home Network

4.1.7 External Agent

- Supplies presence information from external networks

- Sends presence information to the Presence Server in the Home Network

4.2 Trust model

According to section 4.1 the value add points were charging information is generated are the Presentity Presence Proxy and the Watcher Presence Proxy.
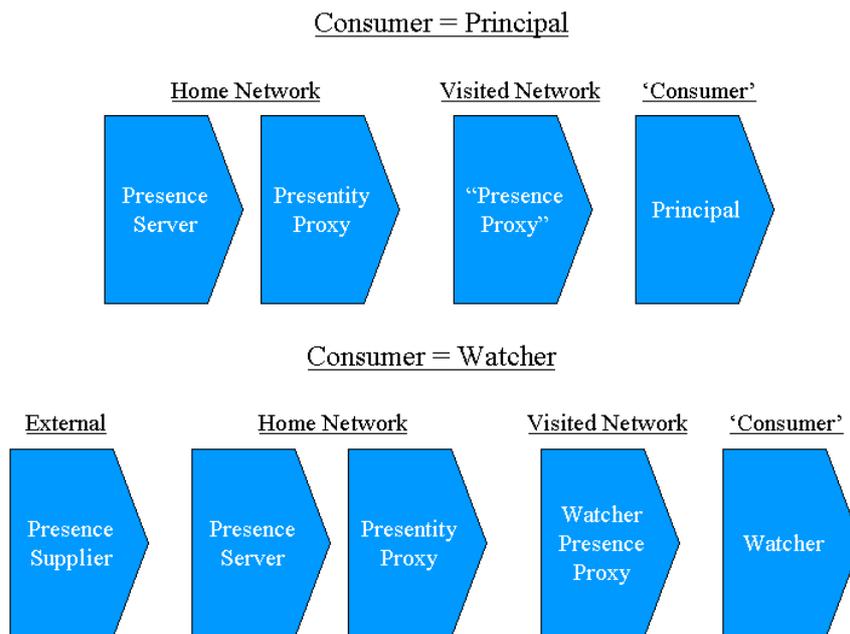
Figure 2 Overview of the value system

A principal may register to provide information for watchers to use the Presence Service and also create the required access rules. The principal may register himself as a presentity or/and a watcher. The registration may be general i.e. without prior arrangements or pre-arranged e.g. the service provider has issued login-name/password. The registration process can be viewed as a value added service that an operator might want to charge for.

A watcher can take different roles e.g. fetcher, poller or subscribed watcher that requests notifications of changes in presence information. Whenever presence information is passed to the watcher this is a value added service and shall be charged for. As already mentioned charging information will be available in the Presentity Presence Proxy and the Watcher Presence Proxy.

There are different Presence suppliers i.e. external agents, Presence User Agent and Network agent. An external agent provides with information to the home network, which adds value to the services and hence might require some charging. A user agent updating the presence information wants to do that such that watchers get latest information and for this the home network might want to charge the user agent.

- A watcher requires some trust in the Watcher Presence Proxy, Presence Server, Presentity Proxy and the Presence Supplier

- There is a trust relationship between the Home Network and the Visited Network

- The Home Network needs to trust the presence supplier

- A principal has trust in the Visited Network as well as the Home Network

[Editors Note: This list is not exclusive and needs further review and updates]

4.3 Threats

[Editors Note: In this section different potential threats that need to be mitigated should be stated.]

4.4 Requirements

The use and access to the presence service shall be supported in a secure manner. It shall only be possible for the presence information to be supplied and/or updated by the presentity or the home environment as identified in clause 5 "High Level Requirements".

The presence service shall support measures to detect and prevent attempts to maliciously use or abuse the services. It shall be possible to authenticate presentities and/or watchers at any time.

It shall be possible to authenticate a principal before allowing registration to the presence service.

It shall be possible to authenticate a watcher requesting access to the presence service. Existing security mechanisms as well as mechanisms specific to presence service may be used.

It shall be possible to authorise a watcher's watcher-subscription request to a presentity's presence information.

It shall be possible to protect the following items from attacks (e.g., eavesdropping, tampering, and replay attacks):

- Presence information and notifications

- Requests for presence information, e.g., requests for subscription and requests for presence information retrieval.

[Editors Note: These are requirements copied from [1] and require a review and updates]

5 Security architecture

6 Security features

7 Secure access

8 Security mechanisms

"TSG <Name>" on the front page

The following text are used for the Technical Specification Group "<Name>" on the front Page:

TSG	Full Name
TSG CN	Core Network
TSG RAN	Radio Access Network
TSG SA	Services and System Aspects
TSG T	Terminals
TSG GERAN	GSM/EDGE Radio Access Network

Page setup parameters

This clause defines the margin parameters and the header to be used.

Title page (= title section)

A4 portrait, Top: 4 cm, Bottom: 19 cm, Left: 1,5 cm, Right: 1,5 cm, Gutter: 0 cm, Header: 0 cm, Footer: 0 cm.

Portrait sections

A4 portrait, Top: 3 cm, Bottom: 2 cm, Left: 2 cm, Right: 2 cm, Gutter: 0 cm, Header: 1,5 cm, Footer: 0,6 cm.

Landscape sections

A4 landscape, Top: 2,0 cm, Bottom: 1,5 cm, Left: 2 cm, Right: 2,7 cm, Gutter: 0 cm, Header: 1,2 cm, Footer: 0,6 cm.

Headers and footers

Header

The following contains the master location for all headers (except for the title section). These paragraphs contain framed fields which will result in one header line and are bookmarked "header".

The left entry contains a possible additional document reference, e.g. "Release 1999", identified on the title page by the use of the ZGSM character style.

Release 6

The center entry is the page number.

10

The right entry repeats the title page information, identified by the use of the ZA paragraph style.

3GPP TR ab.cde Vx.y.z (yyyy-mm)

NOTE: *For documents which are split into more than one file, the possible additional document reference and the title page information need to be hardcoded in all files except the one containing the title section.*

Footer

The footer contains always "3GPP" (except for the title page).

3GPP

Proforma copyright release text block

(e.g. for PICS and PIXIT Proformas)

This text box shall immediately follow after the heading of an element (i.e. clause or annex) containing a proforma or template which is intended to be copied by the user. Such an element shall always start on a new page.

Notwithstanding the provisions of the copyright clause related to the text of the present document, [tbd] grants that users of the present document may freely reproduce the <proformatype> proforma in this {clause|annex} so that it can be used for its intended purposes and may further publish the completed <proformatype>.

Abstract Test Suite (ATS) text block

This text should be used for ATSs using TTCN. The subdivision is recommended.

This ATS has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [<x>].

The ATS was developed on a separate TTCN software tool and therefore the TTCN tables are not completely referenced in the table of contents. The ATS itself contains a test suite overview part which provides additional information and references.

<x1> The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (<pdf_file_name>.PDF contained in archive <zip_file_name>.ZIP) which accompanies the present document.

<x2> The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (<mp_file_name>.MP contained in archive <zip_file_name>.ZIP) which accompanies the present document.

Annexes are only to be used where appropriate:

Annex <A>:
<Annex title>

Annexes are labeled A, B, C, etc. and are "informative"(3G TRs are informative documents by nature).

A.1   Heading levels in an annex

Heading levels within an annex are used as in the main document, but for Heading level selection, the "A.", "B.", etc. are ignored. e.g. **A.1.2** is formatted using *Heading 2* style.

Bibliography

The Bibliography is optional. If it exists, it shall follow the last annex in the document.

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

Bibliography format

- <Publication>: "<Title>".

OR

<Publication>: "<Title>".

Annex <X>:
Change history

It is usual to include an annex (usually the final annex of the document) for reports under TSG change control which details the change history of the report using a table as follows:

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
2001-07					*Copyright date changed to 2001; space character added before TTC in coyright notification; space character before first reference deleted.*	*1.3.2*	*1.3.3*
2002-01					*Copyright date changed to 2002.*	*1.3.3*	*1.3.4*