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Contents

Foreword

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Introduction

This specification defines the requirements for the support of the presence service. The presence service results in presence information of a user and information on a user's devices, services and services components being managed by the network. Together, user, these devices, services and services components are termed presentity (presence entity). This TS makes extensive use of internet terminology to ensure alignment with the presence service description and behaviour in internet recommendations.

The presence service provides access to presence information to be made available to other users or services. Exploitation of this service, see figure 1, will enable the creation of enhanced rich multimedia services along the lines of those currently present in the internet world.

Presence is an attribute related to, but quite different from mobility information, and is a service that can be exploited to create additional services. The types of services that could be supported by the presence service may include:

- New communications services

　The presence service will enable new multimedia services to exploit this key enabler to support other advanced multimedia services and communications. These new services may infer the context, availability and willingness of a user to accept or participate in particular types of communications by accessing the presence information for the user's devices and services. Examples of such new multimedia services that could potentially exploit the presence service include "chat", instant messaging, multimedia messaging, e-mail, , handling of individual media in a multimedia session etc.

- Information services

　The presence service may also be exploited to enable the creation of services in which abstract entities are providing the services to the mobile community. The presence service may be used to support such abstract services as cinema ticket information, the score at a football match, motorway traffic status, advanced push services etc.

-   Enhanced existing services

    Existing services may also be significantly enhanced by exploiting the presence information. For example a user may dynamically arrange for his wireless services to be supported through his corporate PABX whilst he is on-site, require media to be converted and directed to specific devices (e.g. user cannot accept a voice call whilst in a meeting, but is prepared to receive the voice call converted to text in the form of an SMS/MMS/e-mail message). The presence service may also be used to enable the creation of advanced versions of CS/PS services, enable terminal capabilities support etc.

The following figure 1 represents a logical overview of how services could exploit the presence service to create advanced services.
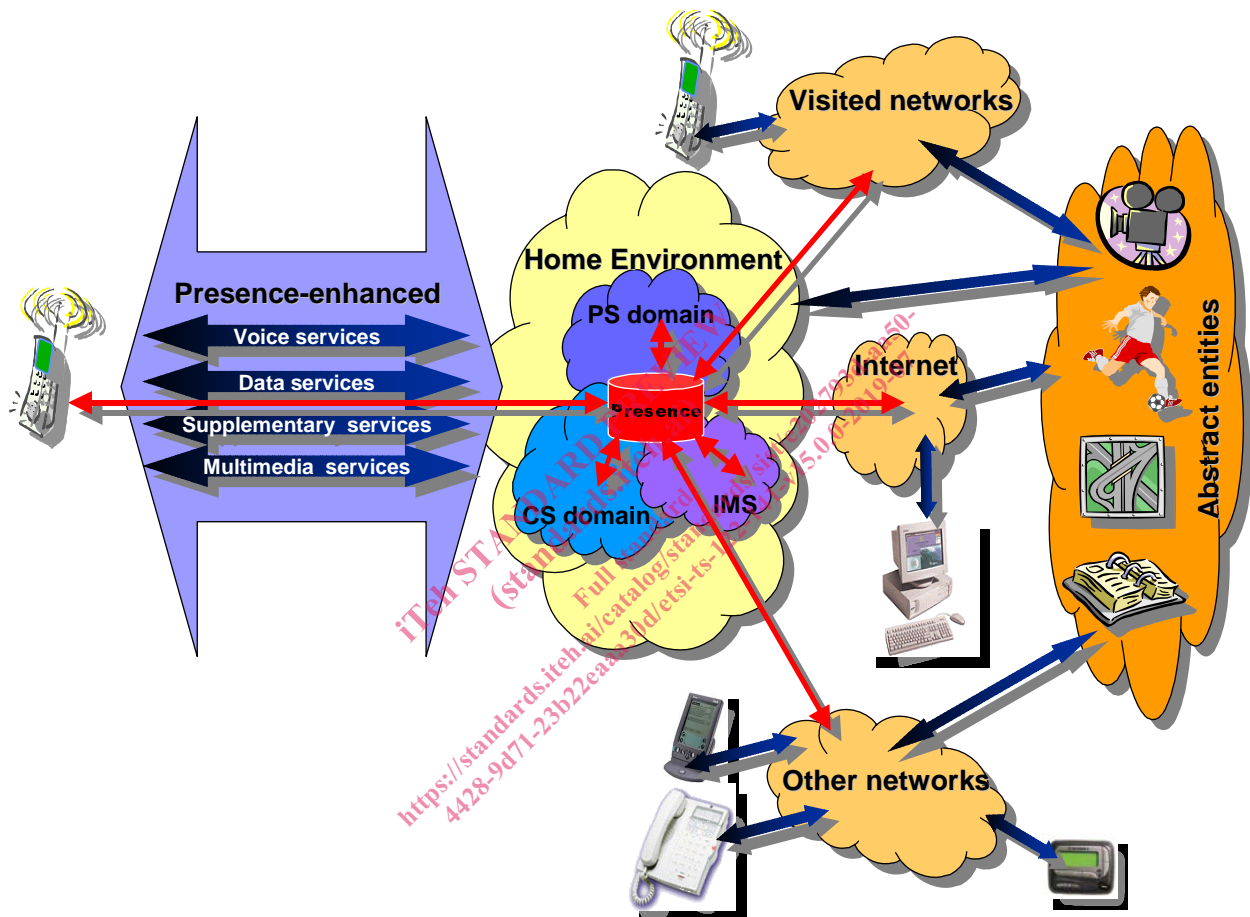

Figure 1: Logical presence service support of services

A presence-enabled service as observed by the user is a service in which the user can control the dissemination of his presence information to other users and services, and also be able to explicitly identify specifically which other users and services to which he provides presence status. Combined with the capability of other users' control of their own presence status, virtually infinite combinations of users and services interacting at different levels can be created.

The exploitation of the presence service is already available in the internet world, although unfortunately with different non interoperable mechanisms. This specification identifies the requirements for support of an enhanced version of the presence service through the support of attributes (e.g. services, media components of a multimedia service, location information) in an interoperable manner within both wireless and fixed networks, and with external networks.

1 Scope

This TS defines the stage one description for the presence service. Stage one is the set of requirements which shall be supported to enable the exploitation of the presence service, seen primarily from the users' and home environments' points of view.

This TS includes information applicable to the home environment, device and network manufacturers which are sufficient to provide complete support of the presence service.

Additional functionalities not documented in this TS are considered outside the scope of this TS. Such additional functionality may be on a network-wide basis, nation-wide basis or particular to a group of users. Such additional functionality shall not compromise conformance to the requirements of the presence service defined in this specification.

2 References

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

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[1]   3GPP TR 21.905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications".

[2]   Void

[3]   RFC 2778: "A Model for Presence and Instant Messaging"; http://www.ietf.org/rfc.html.

[4]   RFC 2779 "Instant Messaging / Presence Protocol Requirement"; http://www.ietf.org/rfc.html.

[5]   RFC 3863 " Presence Information Data Format (PIDF)";
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3 Definitions, symbols and abbreviations

3.1 Definitions

Access rules: constraints on how the presence service makes presence information available to watchers. For each presentity's presence information, the applicable access rules are managed by the principal that controls the presentity.

availability: a property of a presentity denoting its ability and willingness to communicate based on factors such as the identity or properties of the watcher and the preferences and/or policies that are associated with the presentity

fetcher: a form of watcher that has asked the presence service for the presence information of one or more presentities, but is not requesting a notification from the presence service of (future) changes in a presentity's presence information.

identifier: a means of indicating a point of contact, intended for public use such as on a business card. Telephone numbers, email addresses, and typical home page URLs are all examples of identifier in other systems.

poller: a fetcher that requests presence information on a regular basis.

presence information: is a set of attributes characterising current properties of presentities such as status, an optional communication address and other optional attributes etc

presence service: the capability to support management of presence information between watchers and presentities, in order to enable applications and services to make use of presence information.

presentity (presence entity): any uniquely identifiable entity that is capable of providing presence information to presence service. Examples of presentities are devices, services etc. Any presentity shall have one, and only one, principal associated with it.

principal: human, organisation, program, or collection of humans, organisations and/or programs that chooses to appear to the presence services as a single actor, distinct from all other principals. A principal is associated with one or more presentities and/or watchers. A principal is said to "own" a certain presentity or watcher if such an association exists. Within the context of this specification a subscriber may be a principal to one or more presentities and/or watchers. Examples: A subscriber may be a principal to the terminals (the presentities) he owns. A program, providing a stock exchange information service to customers, may be the principal to the market quotations (the presentities) it monitors.

Note: The case where a presentity is not a subscriber requires to be further considered

subscribed-watcher: a subscribed-watcher is a type of watcher, which requests notification from the presence service of changes in a presentity's presence information, resulting in a watcher-subscription, as they occur in the future.

watcher-subscription: the information kept by the presence service about a subscribed-watcher's request to be notified of changes in the presence information of one or more presentities

Note: This definition represents an entity's request to obtain presence information, and is not related to the term "subscription" in [1]. Within this specification the term watcher-subscription (and its derivatives) purely refers to this relationship.

watcher: any uniquely identifiable entity that requests presence information about a presentity, or watcher information about a watcher, from the presence service. Special types of watcher are fetcher, poller, and subscribed-watcher. Any watcher shall have one, and only one, principal associated with it.

watcher information: information about watchers that have received or may receive presence information about a particular presentity within a particular recent span of time.

3.2   Abbreviations

For the purposes of this document the following abbreviations apply:

    IETF   Internet Engineering Task Force
    LAN   Local Area Network
    VHE   Virtual Home Environment

4   Presence models

4a   A brief introduction to the Presence Service

This clause attempts to give a simplistic high level informative overview of what presence is from a user's perspective, and how it is used to published to, and accessed by, other users.

Mark's ability and willingness to be reached for communication is defined by a set of information known as presence information. Mark's presence information may be related to his mobile network connection status, however it represents much more than just whether he has network coverage or not. Mark also defines a set of access rules to control access to his presence information. For the presence service, Mark is represented by a presentity (presence entity) associated with Mark's presence information and set of access rules.. In this example, Mark's presence information consists of user status and location information.
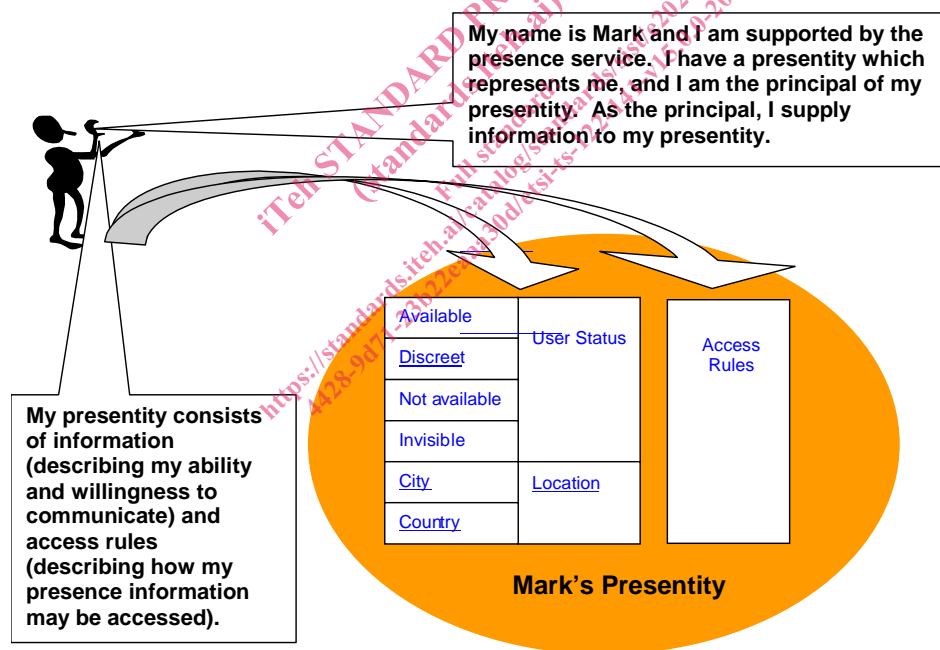

Figure 1: Principal and his representation in the presence information as a presentity

As well as representing a user such as Mark, a presentity may even be created to represent an abstract service or application (e.g. to provide road traffic information, sports results, news headlines etc.). The entity represented by the Presentity (in this case Mark) controls the supply of information for the presentity and is known as the principal; thus Mark is principal of his presentity (see Figure 1).

Paggy, Paul and Jude (e.g. Mark's callers or instant messaging buddies) who want to determine Mark's ability (and willingness) to communicate may do so by checking the status information in Mark's presentity. By doing so, Paggy, Paul and Jude become watchers of Mark (see Figure 2).
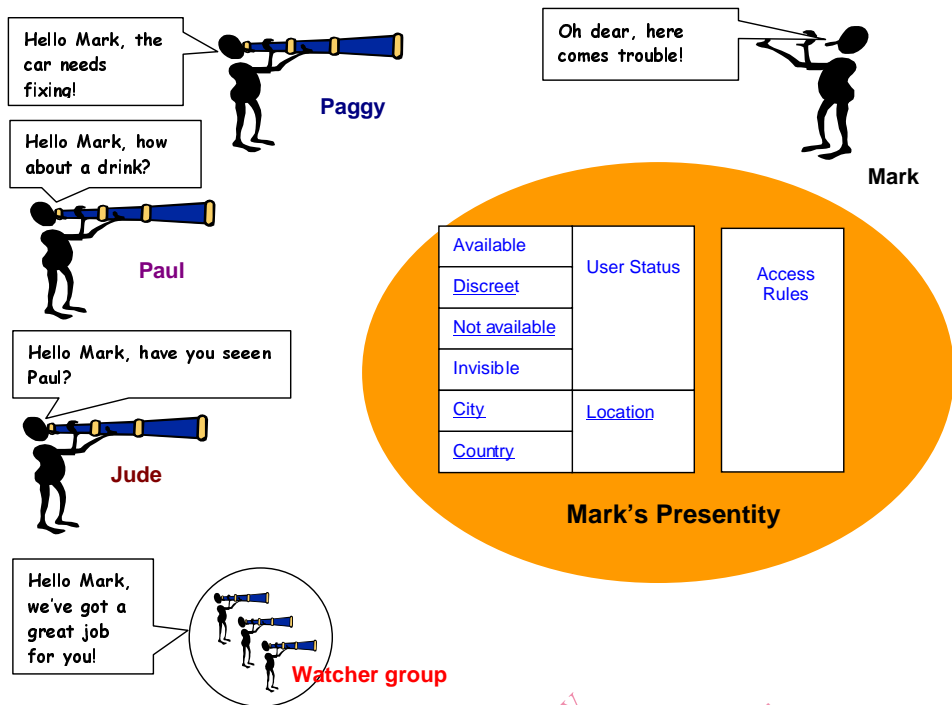
Figure 2: Watchers of Mark

To protect his privacy and confidentiality, Mark has full control over whether Paggy, Paul and Jude, or any other group of watchers, can access his presence information.   Mark may give different watchers different levels of access so that, for example Paggy can see all of Mark's of presence information, Paul may only see part of it, and Jude can see none of it. Hence, Mark can control (per watcher) which parts of his presence information may be seen, and he may decide that specific watchers have restricted access, and that some do not have any access at all. Indeed, Mark may also define his presence information and set up his access rules so that some watchers are given different information (e.g. Jude is told that Mark is not available, when in fact he is available), see Figure 3.
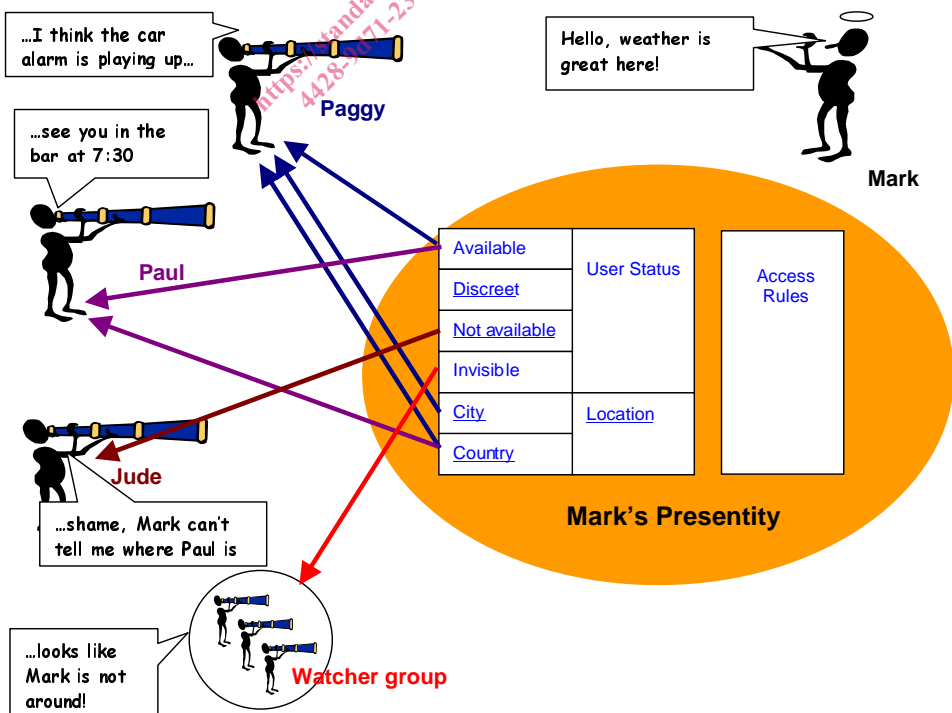
Figure 3: Application of Mark's access rules on watchers