

**SYSTEM AND METHODS FOR USING AN  
APPLICATION LAYER CONTROL PROTOCOL  
TRANSPORTING SPATIAL LOCATION  
INFORMATION PERTAINING TO DEVICES  
CONNECTED TO WIRED AND WIRELESS  
INTERNET PROTOCOL NETWORKS**

**CROSS-REFERENCE TO RELATED  
APPLICATIONS**

[0001] This application claims priority under 35 U.S.C. § 119 from U.S. Provisional Application Serial No. 60/246,779 filed Nov. 8, 2000.

**TECHNICAL FIELD**

[0002] This invention relates to telecommunications and, more particularly, to instant messaging and presence.

[0003] The invention can also be related to the new UMTS (Universal Mobile Telecommunications System) based on application layer signaling. The invention shows a solution for implementing Instant Messaging and likewise a Presence Service over an application layer control protocol. It utilizes a new location information format defined to communicate the spatial location of the user called "Spatial Location Payload". It provides means and methods for informing network entities about user location information.

**BACKGROUND OF THE INVENTION**

[0004] Presence is a concept promoted in various Internet Engineering Task Force (IETF) documents as the subscription to and notification of changes in a communications state of a user. The state may for instance consist of the set of communications means, communications address, and status of that user. A presence protocol provides such a service over an IP network. An extension to the Session Initiation Protocol (SIP) has been proposed by J. Rosenberg et al. for control of presence in the IMPP WG entitled "SIP Extensions for Presence" and which can be found at draft-rosenberg-imp-pp-presence-00.txt, Jun. 15, 2000. The SIP is from the SIP WG and is described at RFC 2543 by Handley et al., entitled "SIP: Session Initiation Protocol" Aug. 6, 2000 found at draft-ietf-sip-rfc2543bis-0.1.ps. It is an application layer control (signaling) protocol for creating, modifying and terminating sessions with one or more participants.

[0005] Instant messaging is widely used today but mostly using a proprietary system to exchange content between a set of participants in real time. Unfortunately, the user of such a proprietary system is tightly bound to the provider and cannot use the service for purposes other than offered by the provider, much less inter-operate with other instant messaging services. In effect, the presence of the user is tightly bound to the proprietary system, and the user cannot get out of this straight jacket. This is a problem. SIP extensions have also been proposed for instant messaging ("SIP extension for Instant Messaging") at draft-rosenberg-imp-pp-im-00.txt, Jun. 15, 2000, also by J. Rosenberg et al. of the IMPP WG of the IETF. In that document, motivations are provided on why SIP is an ideal platform for instant messaging (IM), why IM should be completely separated from presence, and how to perform IM with SIP. SIP extensions for message waiting indication have likewise been proposed in the IETF draft-mahy-sip-message-waiting-00.txt, July 2000.

[0006] At the IETF it is therefore proposed to use the SIP for registering the user and to use the same mechanism to notify the user about message waiting.

[0007] A "Basic SloP Architecture Proposal" by J. Loughney et al, Jul. 15, 2000, IETF draft-loughney-spatial-arch-00.txt proposes a simple architecture supporting the transport of spatial location information to allow services based on spatial location information to inter-operate. The exchange of location information is attractive for exchange of information between devices in both wired and wireless networks.

[0008] A problem is therefore how to implement presence and messaging for wired and wireless IP Networks.

**DISCLOSURE OF THE INVENTION**

[0009] An object of the present invention is to provide a way to transport spatial location information pertaining to devices connected to wired and wireless networks.

[0010] Another object of the present invention is to provide a solution for implementing instant messaging and presence using an application layer control signaling.

[0011] Another object is to apply such solutions to mobile telecommunications systems.

[0012] According to a first aspect of the invention, a method for providing a presence service over an internet protocol network comprises the steps of receiving application layer signaling from users registering for said presence service, checking said signaling for spatial location information, and storing said spatial location information for use in providing said presence service.

[0013] Further according to the first aspect of the invention, said application layer signaling is according to a session initiation protocol.

[0014] Further still according to the first aspect of the invention, said spatial location information is received as a spatial location payload.

[0015] Further in accordance with the first aspect of the invention, the step of providing provides access to said spatial location information to one or more location based services.

[0016] Further still in accordance with the first aspect of the invention, said access to said spatial location information is provided to said one or more location based services without providing access to associated user identity information.

[0017] Yet further in accordance with the first aspect of the invention, the method further comprises the step of using said spatial location information in conjunction with a messaging service for providing messages to said users.

[0018] According to a second aspect of the invention, a method for using a presence service over an internet protocol (IP) network comprises the steps of providing application layer signaling from a user registering spatial location information relating to said user for use by said presence server in providing presence services, wherein said user provides or receives a message relating to use of said spatial location information by said presence service using said application layer signaling.