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GSM: "Rich Communication Suite Release 3, Service Definition"[Online] 25 February 2010 (2010-02-25), XP002598485 Retrieved from the Internet: URL: [http://gsmworld.com/documents/ServiceDefinition_v1.0\(1\).pdf](http://gsmworld.com/documents/ServiceDefinition_v1.0(1).pdf) [retrieved on 2010-08-26]

DESCRIPTION

FIELD OF THE INVENTION

[0001] The exemplary and non-limiting embodiments of the invention relate generally to communication systems and more specifically to providing a presence service to a user terminal.

BACKGROUND OF THE INVENTION

[0002] The following description of background art may include insights, discoveries, understandings or disclosures, or associations together with disclosures not known to the relevant prior art to the present invention but provided by the present invention. Some such contributions of the invention may be specifically pointed out below, whereas other such contributions of the invention will be apparent from their context.

[0003] A rich communication suite (RCS) initiative is an effort of a group of telecommunications operators and vendors to enhance the adoption of enhanced mobile applications and services, providing an interoperable, convergent, rich communication experience. A presence service is a part of multimedia services, showing the user's availability and/or willingness for communication. A rich communication suite document (i.e. a presence document) may be used for presence exchange.

[0004] However, presence has evolved quite a lot recently and may contain a plenty of information on the user, other than just the availability/willingness of the user.

[0005] Document Rich communication suite Release 3, Service definition, 25.2.2010, section 4.1.1.5, discloses a user changing his free text, and the free text is shown to the user's contacts.

[0006] EP 1 699 218 A1 discloses a user data section transmitting a relative and/or a temporary presence comment.

BRIEF DISCLOSURE OF THE INVENTION

[0007] The following presents a simplified summary of the invention in order to provide a basic understanding of some aspects of the invention. This summary is not an extensive overview of the invention. It is not intended to identify key/critical elements of the invention or to delineate the scope of the invention. Its sole purpose is to present some concepts of the invention in a simplified form as a prelude to the more detailed description that is presented later.

[0008] According to an aspect of the present invention there is provided a method, wherein in response to receiving, in a first user terminal, presence status information on a second user terminal and a corresponding presence status information identifier, the method comprises displaying on the first user terminal said presence status information and a related command element, wherein in response to recognising an act performed by the user of the first user terminal, said act comprising the user entering a presence comment by means of said command element, the method comprises transmitting said presence comment and said presence status information identifier from the first user terminal to a network apparatus.

[0009] According to another aspect of the present invention there is provided a communications system, wherein in response to receiving, in the first user terminal, presence status information on the second user terminal and a corresponding presence status information identifier, the system is configured to display, on the first user terminal, said presence status information and a related command element, wherein, in response to recognising an act performed by the user of the first user terminal, said act comprising the user entering a presence comment by means of said command element, the system is configured to transmit said presence comment and said presence status information identifier from the first user terminal to a network apparatus.

[0010] According to yet another aspect of the present invention there is provided an apparatus, wherein in response to receiving presence status information on the second user terminal, the apparatus is configured to create a corresponding presence status information identifier, transmit said presence status information and said presence status information identifier to the first user terminal, and receive, from the first user terminal, said presence status information identifier and a respective presence comment entered by the user of the first user terminal so that the presence status information and the respective presence comment are linkable to each other by means of the corresponding presence status information identifier.

[0011] According to yet another aspect of the present invention there is provided a first user terminal, wherein in response to receiving presence status information on the second user terminal and a corresponding presence status information identifier, the first user terminal is configured to display said presence status information and a related command element, wherein, in response to recognising an act performed by the user of the first user terminal, said act comprising the user entering a presence comment by means of said command element, the first user terminal is configured to transmit said presence comment and said presence status information identifier to a network apparatus.

[0012] According to an aspect of the present invention there is provided a computer program comprising program code means adapted to perform any of steps of a method when the program is run on a processor, the method comprising in response to receiving, in a first user terminal, presence status information on a second user terminal and a corresponding presence status information identifier, displaying on the first user terminal said presence status

information and a related command element, wherein in response to recognising an act performed by the user of the first user terminal, said act comprising the user entering a presence comment by means of said command element, the method comprises transmitting said presence comment and said presence status information identifier from the first user terminal to a network apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] In the following the invention will be described in greater detail by means of preferred embodiments with reference to the attached drawings, in which

Figure 1 illustrates a communications system according to an exemplary embodiment;

Figure 2 illustrates signalling according to an exemplary embodiment;

Figure 3 is a flow chart illustrating the operation of a user terminal according to an exemplary embodiment;

Figure 4 is a flow chart illustrating the operation of an apparatus according to an exemplary embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[0014] IP multimedia subsystem (IMS) refers to a communications network subsystem providing IP multimedia services that complement the services provided by a circuit switched core network (CS CN) domain. IMS enables PLMN operators to offer their subscribers multimedia services based on and built upon Internet applications, services and protocols.

[0015] The rich communication suite (RCS) uses IMS (IP multimedia subsystem) for providing mobile phone communication services. Rich communication enables the use of more than just voice communication. From the end-user point of view, RCS enables communication such as instant messaging, video sharing and/or buddy lists. These capabilities may be available on any type of user devices using open communication between devices and networks. RCS may involve features such as an enhanced phonebook with service capabilities and presence enhanced contacts information, enhanced messaging which enables a large variety of messaging options including chat and messaging history, enriched call which enables multimedia content sharing during a voice call, and/or a "see what I see" capability. Wider and large scale IMS deployment, interoperability between different terminal vendor RCS clients, and RCS service interworking between operators are a part of RCS initiative. RCS leverages existing standards, taking on board different services defined by e.g. 3GPP and OMA and combines them with the enhanced phonebook. This allows the service capabilities as well as

presence information of the different recipients to be shown in a terminal phonebook application. RCS reuses the capabilities of a 3GPP-specified IMS core system as an underlying service platform taking care of issues such as authentication, authorization, registration, charging and routing. Following services may be included in the RCS concept: presence, voice call, IM (instant messaging), video share, image share, SMS (short message service), MMS (multimedia messaging service). Some of the capabilities of RCS are also available from Internet service providers. Therefore, the present solution is not limited to the rich communication environment. Instead the present solution is applicable in any type of enhanced communication system. For example, the multimedia messaging service refers to a messaging service for sending and receiving multimedia messages. MMS combines conventional text messages with other ("richer") content types, such as photographs, images, voice clips, and video clips. MMS is used with multimedia terminals, e.g. WAP (wireless application protocol) clients, which are able to receive and process multimedia messages.

[0016] A presence service/enabler represents an integral part of many multimedia services, basically showing the user's availability and/or willingness for communication. The rich communication suite (RCS) is one example of a service utilizing presence. Presence has evolved quite a lot recently and may contain a plenty of information on the user, other than just the availability/willingness of the user.

[0017] Presence services specified by OMA and RCS (based on IMS) define a status text/note field that a user of a user terminal may use to type in free text that describes his/her feeling, mood or current event like "in lunch" or "opening a wine bottle to celebrate my birthday". In addition, the user may have a status picture/icon in the presence information. An exemplary embodiment of the present solution defines a way for the friends to comment for the status text and the picture, and tie the comment to a presence status change in the IMS system. In an exemplary embodiment, it is also possible for the operator to charge for the comments, as comments may be seen as chargeable messages like SMS. When a user of a user terminal changes a presence status text or a presence status picture, a comment button or the like may appear on the display of the user's friend's terminal. When the user's friend presses the button with his/her user equipment, a dialog (or the like) with a text field may be opened for the friend to write down his/her comment. The friend may then write down a comment, and the written comment is then shared by the user and his/her friends and shown in a user interface, e.g. in a comments dialog.

[0018] An exemplary embodiment of the present solution describes a way how the commenting feature may be technically implemented in the IMS system by utilizing an existing network and server. An exemplary embodiment enables defining how a commenting system may be implemented in existing IMS systems, by extending the functionality in the servers and clients and by lever-aging the protocols used between the servers and the user devices. In order to realize the commenting system, an exemplary embodiment defines a mechanism in the network for tying the status text and/or the status picture to a comment or to a list of comments. In addition, an exemplary embodiment discloses a function for maintaining the comment and/or the list of comments. The function may also handle the authorization of the

comments meaning that only user's friends are able to read and write comments. In an exemplary embodiment the comment itself may also be a chargeable message.

[0019] Exemplary embodiments of the present solution will now be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all embodiments of the solution are shown. Indeed, the solution may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Although the specification may refer to "an", "one", or "some" embodiment(s) in several locations, this does not necessarily mean that each such reference is to the same embodiment(s), or that the feature only applies to a single embodiment. Single features of different embodiments may also be combined to provide other embodiments. Like reference numerals refer to like elements throughout.

[0020] The present solution is applicable to any user terminal, server, corresponding component, and/or to any communication system or any combination of different communication systems that support services utilizing presence. The communication system may be a fixed communication system or a wireless communication system or a communication system utilizing both fixed networks and wireless networks. The protocols used, the specifications of communication systems, servers and user terminals, especially in wireless communication, develop rapidly. Such development may require extra changes to an embodiment. Therefore, all words and expressions should be interpreted broadly and they are intended to illustrate, not to restrict, the embodiment.

[0021] In the following, different embodiments will be described using as an example of a system architecture where to the embodiments may be applied, an architecture based on an evolved UMTS terrestrial radio access network of an enhanced cellular network (E-UTRAN). Although E-UTRAN is discussed as a primary example herein, the present solution is not limited to E-UTRAN, LTE, and/or 3GPP systems. Thus, the present solution may also be applicable to other communications systems such as WiMAX (worldwide interoperability for microwave access), HSDPA (high-speed downlink packet access), HSUPA (high-speed uplink packet access), and/or WLAN (wireless local area network).

[0022] A general architecture of a communication system according to exemplary embodiments of the present solution is illustrated in Figure 1. Figure 1 is a simplified system architectures only showing some elements and functional entities, all being logical units whose implementation may differ from what is shown. The connections shown in Figure 1 are logical connections; the actual physical connections may be different. It is apparent to a person skilled in the art that the systems also comprise other functions and structures. It should be appreciated that the functions, structures, elements and the protocols used in or for a presence service, are irrelevant to the actual invention. Therefore, they need not to be discussed in more detail here.

[0023] Figure 1 provides an example of an environment where the present solution may be

used. Referring to Figure 1, a communications system S according to an exemplary embodiment of the present solution comprises a user equipment UE1, UE2 that may be e.g. a mobile or wireless user terminal, such as a mobile phone (mobile station), a personal digital assistant (PDA), a game console, a smart phone, a personal computer (PC), a laptop, a desktop computer or the like, capable of providing presence data. The system S further comprises a core network element PS1, PS2, such as a presence server or any other core network element capable of handling presence data. The first presence server PS1 of a first operator network N1 is operatively connected to the second presence server PS2 of a second operator network N2. A first messaging server IM1, in this case to an instant messaging server IM1, located in N1, is operatively connected to an IM server IM2, located in N2. IM2 is operatively connected to an XML document management system XDMS2 located in N1. In the example shown in Figure 1, the first user terminal UE1 ("watcher") belongs to a first user ("user A") and is capable of connecting to the first operator network N1, and the second user terminal UE2 belongs to a second user ("user B") and is capable of connecting to the second operator network N2. UE1 and UE2 are able to communicate to each other via one more network nodes PS1, PS2, IM1, IM2, XDMS2.

[0024] Figure 1 shows a simplified version of an evolved UMTS (universal mobile telecommunications system) terrestrial radio access network structure, which only illustrates the components that are essential to illustrate the present solution, even though those skilled in the art naturally know that a general communications system also comprises other functions and structures, which do not have to be described in more detail herein. The network element PS1, PS2, IM1, IM2, XDMS2 may include any network element operated by a network operator in a cellular, wireless and/or fixed network, such as a mobile switching centre, SGSN, GGSN, VLR, HLR, HSS, base station, access point, radio network controller, database, and/or a network computer or server. Although each network element UE1, UE2, PS1, PS2, IM1, IM2, XDMS2, N1, N2 has been depicted as one entity, different modules and memory may be implemented in one or more physical or logical entities. A general architecture of a communication system providing presence-based communication is illustrated in Figure 1. Figure 1 is a simplified system architecture only showing some elements and functional entities, all being logical units whose implementation may differ from what is shown. The connections shown in Figure 1 are logical connections; the actual physical connections may be different. It is apparent to a person skilled in the art that the systems also comprise other functions and structures. It should be appreciated that the functions, structures, elements and the protocols used in or for session-based communication are irrelevant to the actual invention. Therefore, they need not be discussed in more detail here.

[0025] Figure 2 illustrates signalling between network elements according to an exemplary embodiment of the present solution. Figure 2 depicts the signalling how the present solution may be implemented in the IP multimedia subsystem IMS. Figure 2 illustrates how the second user ("user B") may update his/her presence information. Referring to Figure 2, UE2 updates the presence of user B by transmitting a PUT message 2-1 to XDMS2. The presence server PS2 receives 2-4 information 2-3 on the update from XDMS2, and updates 2-4 user B's presence based on the update 2-2 carried out in XDMS2, and notifies user B's friends (e.g. the

user of the first user terminal UE1, i.e. "user A") about the presence update by transmitting, to the presence server PS1, a notification 2-5 including information on the presence status of UE2 as well as a corresponding presence status identifier. The presence status information identifier may comprise e.g. a timestamp of the presence status information, identifying the time when the presence status information of the second user terminal UE2 was changed (i.e. when the identifier was created 2-2 in XDMS2; another option is that PS2 or UE2 creates the identifier). The notification may be forwarded 2-6 from PS1 to UE1, wherein the presence status information and a related command element may be displayed 2-7 on the display of the first user terminal UE1. Thus user A is able to see user B's presence change in user A's user equipment and may decide to comment the note/picture included in the presence status information. The command element may comprise e.g. a virtual command button and/or command prompt enabling the user of the first user terminal UE1 to select a predefined presence comment and/or to write a free-text presence comment. The comment as well as the corresponding presence status identifier 2-8 are then sent to a messaging server IM1, in this case to an instant messaging server IM1 in N1 (i.e. to the IM server in the originating side). IM1 is connected to an IM server IM2 in N2 (i.e. to the IM server in the terminating side). Thus IM1 transmits 2-8 the comment and the identifier to IM2. The IM server IM2 in the terminating side is connected to XDMS2 (also in the terminating side) and updates user B's presence information by adding 2-10 the comment (and the identifier) in user B's presence document in XDMS2.

[0026] As disclosed above, the presence comment may be tied to a particular status text or icon. This may be done, for example, by including a timestamp in the note or icon and then referring to the note or icon in the message with the same timestamp. The following illustrates an imaginary presence document of a presentity that contains a note with a text "Summer!" and a timestamp that tells the date/time when the note was set. <presence> <person> <note> Summer! <timestamp>2009-06-01T12:10:29Z</timestamp> <comments/> </note> </person> </presence>

[0027] The empty comments element tells the watcher ("user A") that the watcher is able to comment on the presentity's status and may be put as a part of the presence publish (i.e. PUT to XDMS2).

[0028] When the watcher wants to comment the picture the watcher's user equipment creates e.g. a SIP message that contains a comment: MESSAGE sip:12345678@domain SIP/2.0 Max-Forwards: 70 From: sip:12345678@domain;tag=49583 To: sip:23456789@someotherdomain Accept-Contact: *;+presence_comment;require;explicit Event: presence.comment Call-ID: asd88asd77a@1.2.3.4 CSeq: 1 MESSAGE Content-Type: text/plain Content-Length: 10 Yes it is!

[0029] In the message, the event header describes that the message is a presence comment, with a value "presence.comment". The timestamp may e.g. be a part of the SIP header or the actual message. <timestamp>2009-06-01T12:10:29Z</timestamp>Yes it is!

[0030] The comment 2-8 is then sent from the user terminal UE1 to the originating IM server IM1 from where the originating IM server forwards 2-9 the comment to the terminating IM server. The terminating IM server IM2 then notices that the message is a comment (according to the event header field) to a presence status text or icon, and connects 2-10 to XDMS2. The user's status text or the link to the picture is stored 2-11 in XDMS2. When the presence server PS2 publishes user B's presence information the presence server PS2 fetches 2-12 the information from XDMS2 and adds 2-13 the information to the presence document published by the presence server PS2.

[0031] The messaging server PS2 may first check 2-13 from a presentity's authorization list that the sender of the comment really is a friend of the presentity. Then the messaging server PS2 checks 2-13 whether there is a note element the timestamp of which matches the timestamp that comes with the comment. If they match, the messaging server adds 2-13 the comment to the note element: `<presence> <person> <note> Summer! <timestamp>2009-06-01T12:10:29Z</timestamp> <comments> <comment from="sip:12345678@domain"> Yes it is! <timestamp>2009-06-01T12:15:29Z</timestamp> </comment> </comments> </note> </person> </presence>`

[0032] Another option for implementing this is to store the comments in a content XDMS2 in a separate document and add a link that points to the list in the content XDMS2 into the note element.

[0033] Thus the presence status information and the related presence comment may be stored 2-11, 2-13 in XDMS2 and/or PS2 so that they are linked to each other on the basis of the corresponding presence status information identifier (so that the presence status information and the comment related to the presence status information can be identified on the basis of the presence status information identifier). The presence comment may be provided to the second user terminal UE2 by transmitting a notification 2-14 to the second user terminal UE2. Then the presence comment and a related command element may be displayed 2-15 on the display of the second user terminal UE2. Thus user B is able to see user A's presence comment in user B's user equipment and may further decide to comment the note/picture included in user A's presence comment. The command element may comprise e.g. a virtual command button and/or command prompt enabling the user of the second user terminal UE2 to select a predefined presence comment and/or to write a free-text presence comment. User B's comment as well as the corresponding presence status identifier 2-16 (the identifier corresponds to the identifier sent by UE1 in message 2-8) are then sent 2-16 to the messaging server IM2, in this case to the instant messaging server IM2 in N2. IM2 updates user B's presence information by adding 2-17 the comment (and the identifier) in user B's presence document in XDMS2. The presence server PS2 receives 2-20 information on the update from XDMS2, and updates 2-20 user B's presence based on the update 2-18 carried out in XDMS2, and notifies user B's friends (e.g. the user of the first user terminal UE1, i.e. "user A") about the presence update (i.e. user B's comment) by transmitting, to the presence server PS1, a notification 2-21 including information on user B's comment as well as the corresponding presence status identifier. The notification may be forwarded 2-22 from PS1 to

UE1, wherein the presence status information and a related command element may be displayed 2-23 on the display of the first user terminal UE1. Thus user A is able to see user B's presence comment in user A's user equipment. Information on the updated presence document of UE2 may be provided to UE2 by transmitting a notification 2-24 from PS2 to UE2.

[0034] Figure 3 illustrates the operation of a terminal apparatus UE1 according to an exemplary embodiment of the present solution. Referring to Figure 3, in response to receiving 3-1, from a network apparatus IM2, XDMS2, PS2, PS1, presence status information on a second user terminal UE2 and a corresponding presence status information identifier, UE1 is configured to display 3-2 the presence status information and a related command element. In response to recognising 3-3 an act performed by the user of UE1, the act comprising the user entering a presence comment by means of the command element, UE1 is configured to transmit the presence comment and the presence status information identifier to the network apparatus IM2, XDMS2, PS2.

[0035] Figure 4 illustrates the operation of a network apparatus according to an exemplary embodiment of the present solution. Referring to Figure 4, in response to receiving 4-1 presence status information on a second user terminal UE2, the apparatus is configured to create 4-2 a corresponding presence status information identifier, transmit 4-3 the presence status information and said presence status information identifier to UE1, and receive 4-4, from UE1, the presence status information identifier and a respective presence comment entered by the user of UE1, so that the presence status information and the respective presence comment are linkable to each other by means of the corresponding presence status information identifier.

[0036] The steps/points, signaling messages and related functions described above in Figures 1 to 4 are in no absolute chronological order, and some of the steps/points may be performed simultaneously or in an order differing from the given one. Other functions can also be executed between the steps/points or within the steps/points and other signaling messages sent between the illustrated messages. Some of the steps/points or part of the steps/points can also be left out or replaced by a corresponding step/point or part of the step/point. The operations to be executed illustrate a procedure that may be implemented in one or more physical or logical entities. The signaling messages are only exemplary and may even comprise several separate messages for transmitting the same information. In addition, the messages may also contain other information.

[0037] The techniques described herein may be implemented by various means so that an apparatus implementing one or more functions of a corresponding mobile entity described with an embodiment comprises not only prior art means, but also means for implementing the one or more functions of a corresponding apparatus described with an embodiment and it may comprise separate means for each separate function, or means may be configured to perform two or more functions. For example, these techniques may be implemented in hardware (one or more apparatuses), firmware (one or more apparatuses), software (one or more modules), or combinations thereof. For a firmware or software, implementation can be through modules

(e.g., procedures, functions, and so on) that perform the functions described herein. The software codes may be stored in any suitable, processor/computer-readable data storage medium(s) or memory unit(s) or article(s) of manufacture and executed by one or more processors/computers. The data storage medium or the memory unit may be implemented within the processor/computer or external to the processor/computer, in which case it can be communicatively coupled to the processor/computer via various means as is known in the art.

[0038] User terminal (user equipment) may refer to any user communication device. A term "user equipment" as used herein may refer to any device having a communication capability, such as a wireless mobile terminal, a PDA, a smart phone, a personal computer (PC), a laptop computer, a desktop computer, etc. For example, the wireless communication terminal may be an UMTS or GSM/EDGE smart mobile terminal. Thus, the application capabilities of the device according to various embodiments of the invention may include native applications available in the terminal, or subsequently installed applications. The network apparatus may be implemented in any network element, such as a server.

[0039] An apparatus capable of performing operation according to various embodiments of the present solution may refer to any communication entity, such as the network apparatus, database or the user terminal. The apparatus may generally include a processor, controller, or the like connected to or comprising a memory. The memory may include volatile and/or non-volatile memory and typically stores content, data, or the like. For example, the memory may store computer program code such as software applications or operating systems, information, data, content, or the like for a processor to perform steps associated with operation of the entity in accordance with embodiments of the present invention. Also, for example, the memory typically stores content transmitted from, or received by, the apparatus. Memory may be, for example, random access memory (RAM), a hard drive, or other fixed data memory or storage device. The processor may receive input from an input device and may display information on a display. The processor may also be connected to at least one communication interface or other means for transmitting and/or receiving data, content, messages, or the like. Where the apparatus provides wireless communication, such as in a UMTS, GSM, EDGE, WCDMA network, Bluetooth network, a wireless LAN network, or other mobile network, the processor may operate with a wireless communication subsystem of the interface. Where the apparatus provides an IP server with IP communication, the processor may operate with an IP communication system of the interface. One or more processors, memory, storage devices, and other computer elements may be used in common by a computer system and subsystems, as part of the same platform, or processors may be distributed between a computer system and subsystems, as parts of multiple platforms. If the apparatus is, for example, a mobile station or a network server, the apparatus may also include modules such as a messaging service client/server and/or an application associated with the processor. These modules may be software and/or software-hardware components. For example, a messaging service client/server may include software capable of establishing, modifying, and terminating messaging sessions, to send and receive messages, etc. The apparatus may generally include a processor, controller, control unit or the like connected to a memory and to various interfaces of the apparatus. Generally the processor is a central processing unit, but

the processor may be an additional operation processor. The processor may comprise a computer processor, application-specific integrated circuit (ASIC), field-programmable gate array (FPGA), and/or other hardware components that have been programmed in such a way to carry out one or more functions of an embodiment. An interface provides a transmitter and/or a receiver or a corresponding means for receiving and/or transmitting data, content, messages including the above described advertisements, responses and solicitation messages.

[0040] At least some embodiments or aspects described herein may be implemented using programming stored within an appropriate storage circuitry described above or communicated via a network or other transmission media and configured to control appropriate processing circuitry. For example, programming may be provided via appropriate media including, for example, embodied within articles of manufacture, embodied within a data signal (e.g., modulated carrier wave, data packets, digital representations, etc.) communicated via an appropriate transmission medium, such as a communication network (e.g., the Internet or a private network), wired electrical connection, optical connection or electromagnetic energy, for example, via communications interface, or provided using other appropriate communication structure or medium. Exemplary programming including processor-usable code may be communicated as a data signal embodied in a carrier wave in but one example.

[0041] It will be obvious to a person skilled in the art that, as the technology advances, the inventive concept can be implemented in various ways. The invention and its embodiments are not limited to the examples described above but may vary within the scope of the claims.

LIST OF ABBREVIATIONS

[0042]

RCS - Rich communication suite,

OMA - Open mobile alliance,

CAB - Converged address book,

NAB - Network address book,

XDMS - XML document management system,

IM - Instant messaging,

IMS - IP multimedia subsystem,

SMS - Short message service,

3GPP - Third generation partnership project,

PLMN - Public land mobile network,

XML - Extensible markup language,

IP - Internet protocol.

REFERENCES CITED IN THE DESCRIPTION

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PATENTKRAV

1. Fremgangsmåde til tilvejebringelse af en tilstedeværelsestjeneste i et kommunikationssystem (S), hvilket system (S) omfatter en første brugerterminal (UE1), som er i stand til at modtage tilstedeværelses-statusinformation vedrørende en anden brugerterminal (UE2), og
 - 5 som reaktion på modtagelse (2-7, 3-1) i den første brugerterminal (UE1) fra et netværksapparat (XDMS2, PS2), af tilstedeværelses-statusinformation vedrørende den anden brugerterminal (UE2) og en tilsvarende tilstedeværelses-statusinformationsidentifikator, omfatter fremgangsmåden
 - 10 fremvisning (2-7, 3-2) på den første brugerterminal af den nævnte tilstedeværelses-statusinformation og et relateret kommandoelement;
 - hvor, som reaktion på genkendelse (2-7, 3-3) af en handling udført af brugeren af den første brugerterminal (UE1), hvilken handling omfatter, at brugeren indfører en
 15 tilstedeværelseskommentar vedrørende den nævnte tilstedeværelses-statusinformation vedrørende den anden brugerterminal ved hjælp af det nævnte kommandoelement, hvilken fremgangsmåde omfatter
 - transmission (2-8, 3-4) af den nævnte tilstedeværelseskommentar og den nævnte tilstedeværelses-statusinformationsidentifikator fra den første brugerterminal (UE1) til
 20 netværksapparatet (IM2, XDMS2, PS2).
 2. Fremgangsmåde ifølge krav 1, **kendetegnet ved** lagring (2-11, 2-12) i netværksapparatet (PS2, XDMS2) af tilstedeværelses-statusinformationen og tilstedeværelseskommentaren, således, at disse er indbyrdes sammenknyttede på basis af den
 25 tilsvarende tilstedeværelses-statusinformationsidentifikator.
 3. Fremgangsmåde ifølge krav 1 eller 2, **kendetegnet ved** tilvejebringelse af tilstedeværelseskommentaren til den anden brugerterminal (UE2); og
 - 30 fremvisning af tilstedeværelseskommentaren på den anden brugerterminal (UE2).
 4. Fremgangsmåde ifølge krav 1, 2 eller 3, **kendetegnet ved** fremvisning (3-2) af kommandoelementet på den første brugerterminal (UE1), som reaktion på en ændring i tilstedeværelses-statusinformationen for den anden brugerterminal (UE2).
 - 35 5. Fremgangsmåde ifølge ethvert af de foregående krav, **kendetegnet ved**

genkendelse (2-2, 2-4) i netværksapparatet af ændringen i tilstedeværelsesstatus for den anden brugerterminal (UE2); og

baseret på genkendelsen, tilvejebringelse af tilstedeværelses-statusinformation på den anden brugerterminal (UE2) og den tilsvarende tilstedeværelses-statusinformationsidentifikator til den første brugerterminal (UE1).

6. Fremgangsmåde ifølge ethvert af de foregående krav, **kendetegnet ved, at** transmissionen af tilstedeværelseskommentaren kan takseres fra brugeren af den første brugerterminal (UE1).

7. Fremgangsmåde ifølge ethvert af de foregående krav, **kendetegnet ved, at** tilstedeværelses-statusinformationen omfatter en tilstedeværelsesnote tilvejebragt af den anden brugerterminal (UE2), hvilken tilstedeværelsesnote indføres af brugeren af den anden brugerterminal.

8. Fremgangsmåde ifølge ethvert af de foregående krav, **kendetegnet ved, at** tilstedeværelses-statusinformationsidentifikatoren omfatter et tidsstempel for tilstedeværelses-statusinformationen, hvilket tidsstempel identificerer det tidspunkt, hvor tilstedeværelses-statusinformationen for den anden brugerterminal blev ændret.

9. Fremgangsmåde ifølge ethvert af de foregående krav, **kendetegnet ved, at** kommandoelementet omfatter en virtuel kommandoknap og/eller kommandoprompt, til at gøre det muligt for brugeren af den første brugerterminal (UE1) at vælge en på forhånd defineret tilstedeværelseskommentar og/eller at skrive en fri-tekst tilstedeværelseskommentar.

10. Kommunikationssystem (S) omfattende en første brugerterminal (UE1), som er i stand til at modtage tilstedeværelses-statusinformation vedrørende en anden brugerterminal (UE2), konfigureret til

som reaktion på modtagelse, i den første brugerterminal (UE1) fra et netværksapparat (XDMS2, PS2) af tilstedeværelses-statusinformationen vedrørende den anden brugerterminal (UE2) og en tilsvarende tilstedeværelses-statusinformationsidentifikator,

fremvisning, på den første brugerterminal af den nævnte tilstedeværelses-statusinformation og et relateret kommandoelement;

5 hvor, som reaktion på genkendelse af en handling udført af brugeren af den første brugerterminal (UE1), hvilken handling omfatter, at brugeren indfører en tilstedeværelseskommentar vedrørende den nævnte tilstedeværelses-statusinformation vedrørende den anden brugerterminal ved hjælp af det nævnte kommandoelement, er systemet konfigureret til

at transmitterede den nævnte tilstedeværelseskommentar og den nævnte tilstedeværelses-statusinformationsidentifikator fra den første brugerterminal (UE1) til netværksapparatet (IM2, XDMS2, PS2).

10 11. Netværksapparat til et kommunikationssystem (S), omfattende en første brugerterminal (UE1), som er i stand til at modtage tilstedeværelses-statusinformation vedrørende en anden brugerterminal (UE2), hvilket netværksapparat er konfigureret til

15 som reaktion på modtagelse af tilstedeværelses-statusinformation vedrørende den anden brugerterminal (UE2),

at danne en tilsvarende tilstedeværelses-statusinformationsidentifikator;

at transmitterede den nævnte tilstedeværelses-statusinformation og den nævnte tilstedeværelses-statusinformationsidentifikator til den første brugerterminal (UE1);

20 at modtage, fra den første brugerterminal (UE1) den nævnte tilstedeværelses-statusinformationsidentifikator og en respektiv tilstedeværelseskommentar indført af brugeren af den første brugerterminal (UE1) ved anvendelse af et kommandoelement for indføring af en tilstedeværelseskommentar vedrørende den nævnte tilstedeværelses-statusinformation vedrørende den anden brugerterminal, når den nævnte tilstedeværelsesstatus fremvises på den første brugerterminal, således at tilstedeværelses-statusinformationen og den respektive tilstedeværelseskommentar kan
25 knyttes til hinanden ved hjælp af den tilsvarende tilstedeværelses-statusinformationsidentifikator.

30 12. Apparat ifølge krav 11, **kendetegnet ved, at** apparaturet (XDMS2, PS2) er konfigureret til at lagre tilstedeværelses-statusinformationen og tilstedeværelseskommentaren således, at disse er forbundet indbyrdes på basis af den tilsvarende tilstedeværelses-statusinformationsidentifikator.

35 13. Apparat ifølge krav 11 eller 12, **kendetegnet ved, at** apparaturet (PS2) er konfigureret til at tilvejebringe tilstedeværelseskommentaren til den anden brugerterminal (UE2).

14. Apparaturl ifølge krav 11, 12 eller 13, **kendetegnet ved, at** apparaturet (IM2, XDMS2, PS2) er konfigureret til at
 5 genkende en ændring i tilstedeværelses-status for den anden brugerterminal; og
 baseret på genkendelsen, at tilvejebringelse tilstedeværelses-statusinformation
 vedrørende den anden brugerterminal (UE2) og den tilsvarende tilstedeværelses-
 statusinformationsidentifikator til den første brugerterminal (UE1).
15. Apparaturl ifølge ethvert af kravene 11-14, **kendetegnet ved, at** transmissionen af
 10 tilstedeværelseskommentaren kan takseres i apparaturet (IM2, XDMS2, PS2) fra
 brugeren af den første brugerterminal (UE1).
16. Apparaturl ifølge ethvert af kravene 11-15, **kendetegnet ved, at** tilstedeværelses-
 statusinformationen omfatter en tilstedeværelsesnote tilvejebragt af den anden
 15 brugerterminal (UE2), hvilken tilstedeværelsesnote er indført af brugeren af den anden
 brugerterminal.
17. Apparaturl ifølge ethvert af kravene 11-16, **kendetegnet ved, at** tilstedeværelses-
 statusinformationsidentifikatoren omfatter et tidsstempel for tilstedeværelses-status-
 20 informationen, hvilket tidsstempel identificerer det tidspunkt, hvor tilstedeværelses-
 statusinformationen for anden brugerterminal (UE2) blev ændret.
18. En første brugerterminal (UE1), som er i stand til at modtage tilstedeværelses-
 statusinformation vedrørende en anden brugerterminal (UE2), som er konfigureret til
 25 som reaktion på modtagelse, fra et netværksapparaturl (IM2, XDMS2, PS2), af
 tilstedeværelses-statusinformation vedrørende den anden brugerterminal (UE2) og en
 tilsvarende tilstedeværelses-statusinformationsidentifikator,
 at fremvise den nævnte tilstedeværelses-statusinformation og et relateret
 kommandoelement;
 30 hvor, som reaktion på genkendelse af en handling udført af brugeren af den første
 brugerterminal (UE1), hvilken handling omfatter, at brugeren indfører en tilstede-
 værelseskommentar vedrørende den nævnte tilstedeværelses-statusinformation ved-
 rørende den anden brugerterminal ved hjælp af det nævnte kommandoelement, er den
 første brugerterminal konfigureret til
 35 at transmittere den nævnte tilstedeværelseskommentar og den nævnte tilstede-
 værelses-statusinformationsidentifikator til netværksapparaturl (IM2, XDMS2, PS2).

19. En første brugerterminal ifølge krav 18, **kendetegnet ved, at** den første brugerterminal er konfigureret til at forbinde tilstedeværelses-statusinformationen og tilstedeværelseskommentaren indbyrdes på basis af den tilsvarende tilstedeværelses-statusinformationsidentifikator.

20. En første brugerterminal ifølge krav 18 eller 19, **kendetegnet ved, at** den første brugerterminal er konfigureret til at fremvise kommandoelementet som reaktion på en ændring i tilstedeværelses-statusinformationen for den anden brugerterminal (UE2).

10

21. En første brugerterminal ifølge krav 18, 19 eller 20, **kendetegnet ved, at** tilstedeværelses-statusinformationen omfatter en tilstedeværelsesnote tilvejebragt af den anden brugerterminal (UE2), idet tilstedeværelsesnoten er indført af brugeren af den anden brugerterminal.

15

22. En første brugerterminal ifølge krav 18, 19, 20 eller 21, **kendetegnet ved, at** tilstedeværelses-statusinformationsidentifikatoren omfatter et tidsstempel for tilstedeværelses-statusinformationen, hvilket tidsstempel identificerer det tidspunkt, hvor tilstedeværelses-statusinformationen for den anden brugerterminal blev ændret.

20

23. En første brugerterminal ifølge krav 18, 19, 20, 21 eller 22, **kendetegnet ved, at** kommandoelementet omfatter en virtuel kommandoknap og/eller kommandoprompt til at gøre det muligt for brugeren af den første brugerterminal (UE1) at vælge en forudbestemt tilstedeværelseskommentar og/eller at skrive en fritekst-tilstedeværelseskommentar.

25

24. Computerprogram omfattende programkodemidler indrettede til at udøve ethvert af trinene ifølge krav 1-9, når programmet afvikles på en processor.

DRAWINGS

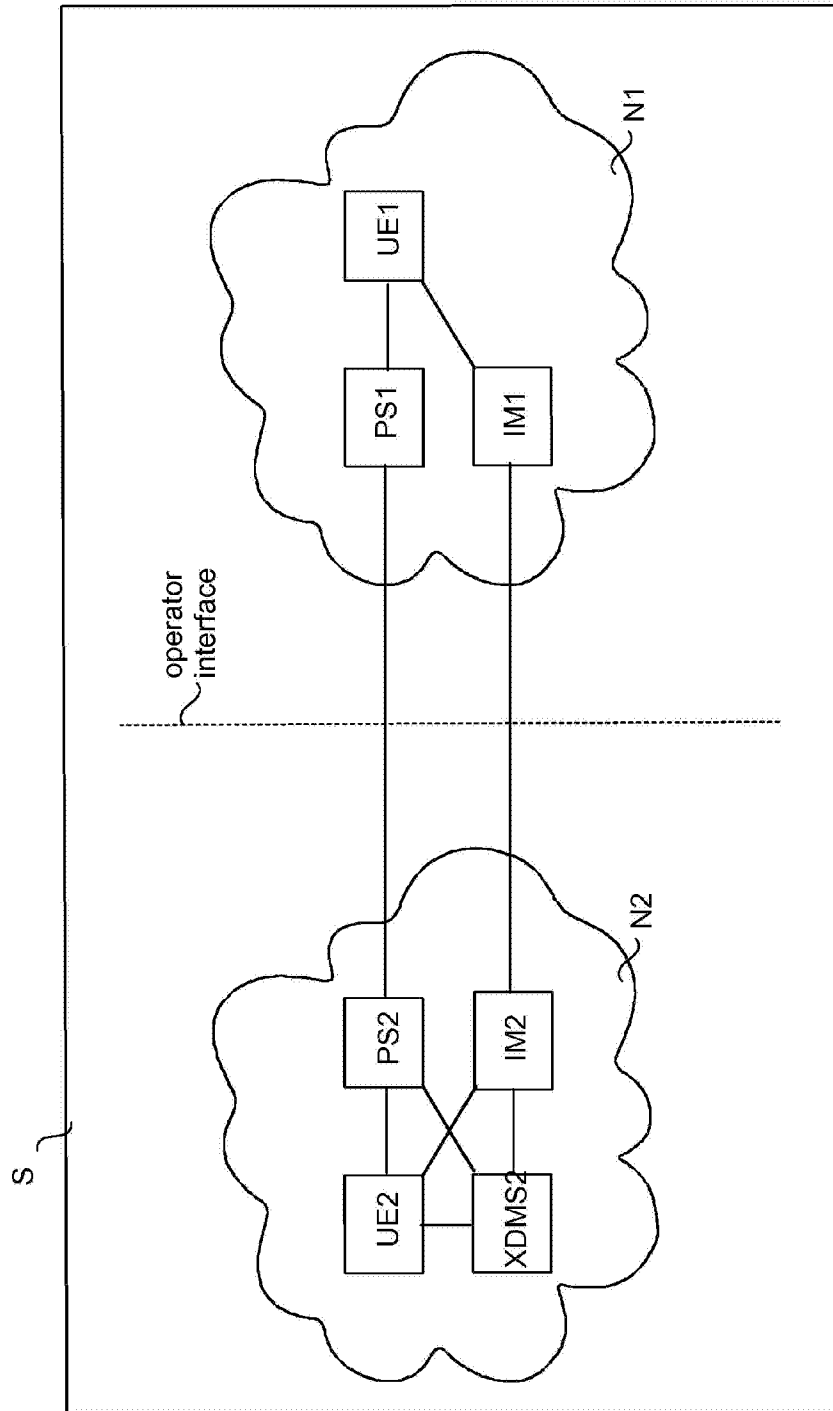


Fig. 1

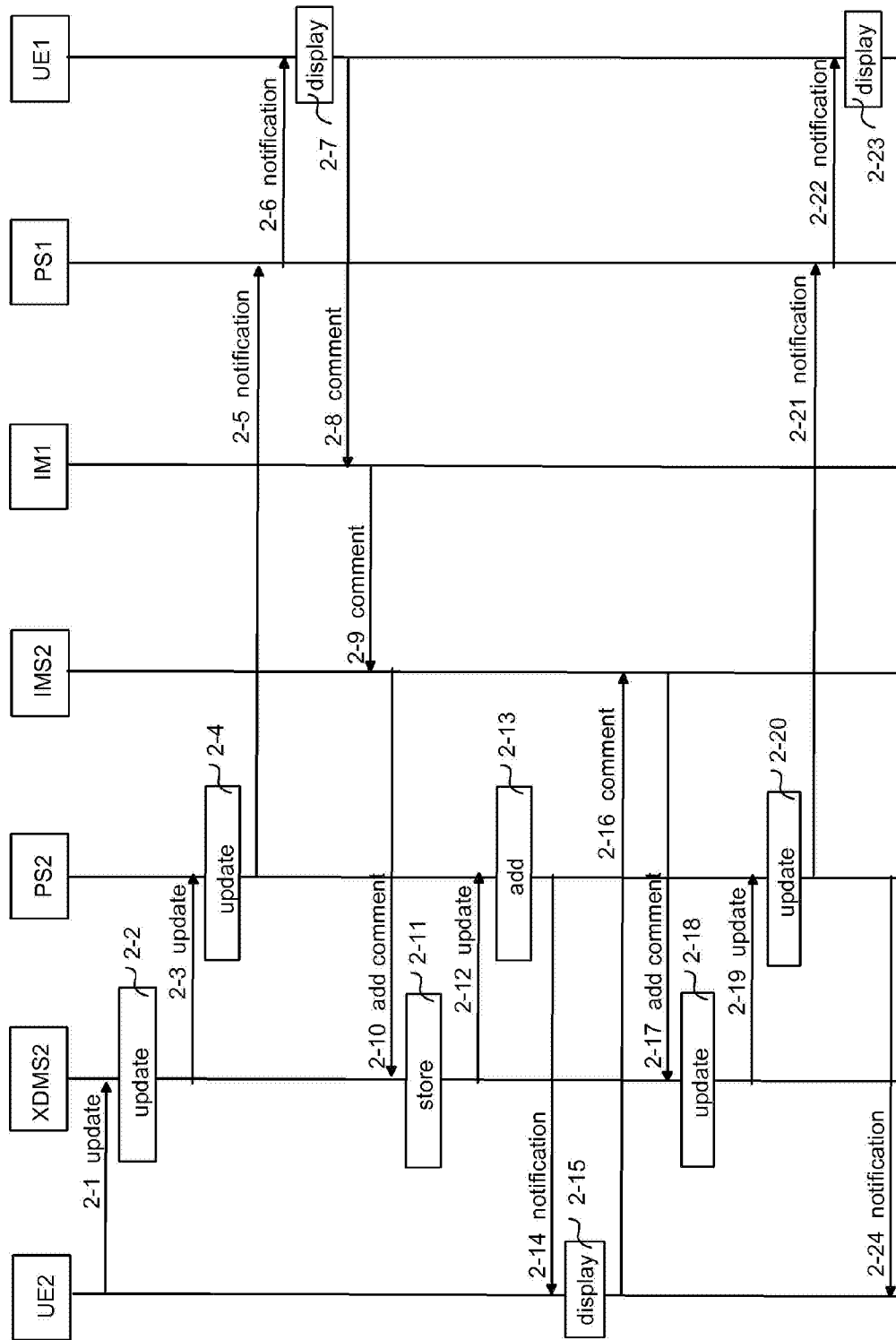
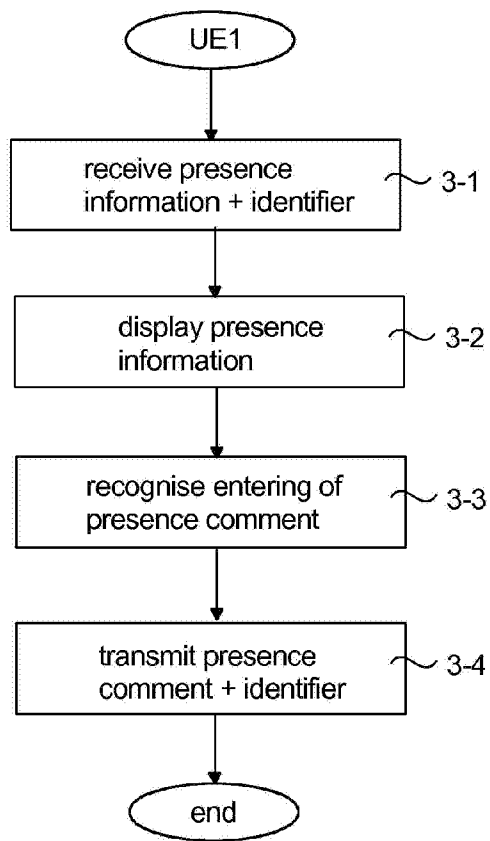
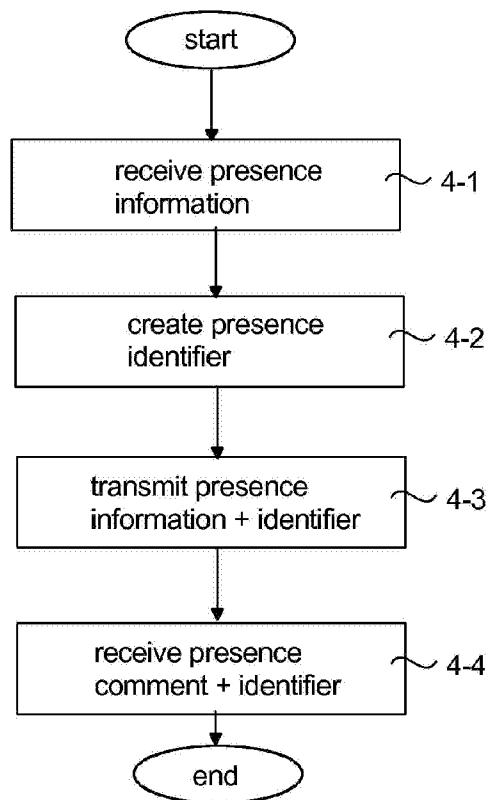


Fig. 2

*Fig. 3*

*Fig. 4*