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# (54) METHOD AND EQUIPMENT FOR CONTROLLING INFORMATION PROVIDED TO A USER IN A NETWORK

VERFAHREN UND GERÄT ZUR STEUERUNG VON EINEM BENUTZER IN EINEM NETZWERK BEREITGESTELLTEN INFORMATIONEN

PROCEDE ET EQUIPEMENT DE CONTROLE D'INFORMATIONS FOURNIES A UN UTILISATEUR DANS UN RESEAU

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EP 1 440 382 B9

## Description

Field of the Invention

**[0001]** The present invention relates to a method for controlling information provided to a user in a network. In particular, but not exclusively, the present invention relates to the control of information provided from a service provider to a mobile station.

Background of the invention

**[0002]** US5245656 (D1), published 14.09.1993, discloses a method for operating customized information services via a network comprising transmitting the identity U of an end-user station via the network to a name translator station. At the name translator station, the identity U of the end-user station is translated into a pseudonym U'. The pseudonym U' is transmitted from the name translator station via the network to a filter station. The pseudonym U is transmitted from the filter station via the network to a service provider station. In response, the service provider station transmits to the filter station an encrypted information description describing information available from the service provider station. At the filter station, the encrypted information description is compared with an encrypted information profile of the end-user station to identify specific information to be transmitted from the service provider station to the end-user station. An indicator is then transmitted from the filter station to the service provider station indicating the specific information to be transmitted to the end-user station. The specific information is then transmitted via the name translator station to the end-user station in an encrypted form not accessible to the name translator station. The specific information is decrypted at the end-user station. This technique protects end-user privacy by insuring that no logical entity is aware of the end-user identity and also aware of the end-user profile and content of the information the end-user receives.

**[0003]** WO01/37137 (D2), published 25.05.2001, discloses a method and apparatus for conducting e-commerce transactions. D1 discloses performing electronic transactions via an electronic computer network including a 'consumer agent' (a software module on the PC of the consumer uses the system) which processes transactions, inquiries and requests initiated by the consumer. The consumer agent also 'remembers' all details of every such transaction, as well as any other information concerning the consumer which is input into it. Based on this accumulation knowledge, it 'learns' the consumers preferences and buying habits, so that it can then perform two essential functions. First, at the initiative of the consumer, it sends a purchase request into the system, defining it in terms of a universal protocol which provides a standardized classification and description system for goods, services and information, Thereafter, the consumer agent filters the offers and selects only those which most closely accord with the consumer's preferences and buying habits, based on the information which the agent has accumulated over time.

**[0004]** WO01/76120 (D3), published 11.10.2001, discloses a method and apparatus wherein a software scheduling agent resides on a communication network and/on client device, such as location-aware wireless communication appliances, television set top boxes, or other end user client devices. The software scheduling agent is part of a probabilistic modelling system in which the scheduler operates to perform constrained random variation with selection. Digital content is generated, organized, and stored on the communication network and/or the client devices. An electronic, digital content wrapper, which holds information in the form of data and metadata related to the digital content is associated with each item of digital content. Contextual profiles for each user and each item of digital content are established by the users and the network and maintained by a service provider on the communication network. The software scheduling agent compares the contextual digital content profile for each item of digital content to the contextual user profile for each user to determine which digital content should be offered for presentation to each user. The comparison and determination of which items of digital content should be offered for presentation to which users is performed by a process of constrained random variation. After the software scheduling agent determines which items of digital content would most likely be relevant or interesting to the user, the digital content is transmitted, either in whole or in part, at predetermined times over the communication network to the appropriate client devices. The digital content is then stored, either in whole or in part, in cache memory on the client device until an appropriate time when the digital content is digitally packaged and presented to particular users over those user's client devices. A communication network client device having a software scheduling agent. The software scheduling agent is part of a probabilistic modeling system in which the scheduler operates to perform constrained random variation with selection. Digital content is generated, organized, and stored on the communication network devices. An electronic digital content wrapper, which holds information in the form of data and metadata relate to the digital content is associated with teach item of digital content. Contextual profile of each user and each item of digital content are established by the users and the network and maintained by a service provider on the communication network and will be digitally packaged and presented to particular users over those user's client devices after a comparison and determination processing means.

**[0005]** Communication systems providing mobility for the users thereof are known. A well known example of the mobile communications systems is the public land line mobile network (PLMN), a cellular communication network being an example of the PLMN. Another example is a mobile communication system that is based, at

least radially, on use of communication satellites.

**[0006]** The mobile network apparatus and/or user equipment such as a mobile station can be employed for provision of information regarding the geographical location of the user equipment and thus the user thereof. A mobile usar equipment and thus the user thereof can be positioned by various different techniques. For example, substantially accurate geographical location information that associates with a user equipment can be obtained based on the known satellite based GPS (Global positioning System). More accurate location information can be obtained through a differential GPS.

**[0007]** Another possibility is to use a location service that associates with a cellular telecommunications system for the provision of the location information. In this aoproach the cells or similar geographically limited radio access entities and associated controllers of the communication system are utilised in production of at least a rough location information estimate concerning the current location of the mobile user equipment. To improve the accuracy of the location information the communication system may be provided with specific location measurement units that provide more accurate data concerning the location of a user equipment within the service area of the cellular system. It is also possible to conclude geographical location when the mobile user equipment is located within the coverage area of a visited or "foreign" network. The visited network may be made capable of transmitting the location of the mobile user equipment back to the home network, e.g. to support services that are based on location information or for the purposes of routing and charging.

**[0008]** The location data may be processed in a specific location service entity that is implemented either within the cellular system or connected thereto. The location data may also be processed in the user equipment that is provided with appropriate processing capacity. The location service entity provided by the communication system may serve different clients via an appropriate interface.

**[0009]** The location information may be used for various purposes, such as for location of a mobile telephone that has made an emergency call, for locating vehicles or given mobile subscribers and so on. In general, a client such as a user equipment or another entity wishing to receive location information regarding a user equipment may send a request for such information to the location service provision entity. The location service provisioning entity will then process the request, obtain the required data and generate an appropriate response.

**[0010]** An example of the provision of the location information by a PLMN is described in more detail 3rd Generation Partnership Project (3GPP) technical specifications, see e.g. 3GPP TS 23.271 version 4.2.0, titled "Functional stage 2 description of LCS", June 2001.

**[0011]** According to the 3GPP specification a location service (LCS) server entity referred to as a Gateway Mobile Location Center (GMLC) is provided for managing the location services. The GMLC is for gathering and storing various data that may be used in provision of location information for location service clients (LCS clients). The LCS Client may make use of that location information for various services/applications. A possible application comprises a LCS client arranged to provide location information in response to a request for non-call related location information. Such a request for location information is referred to in the 3GPP specifications as a non-call related MT-LR (Mobile Terminated Location Request).

**[0012]** Use of a so called "Authorized UE List" has been proposed. This list contains Mobile Subscriber ISDN (MSISDN) (ISDN - Integrated Services Digital Network) numbers or groups of MSISDNs which are authorised to initiate a location information provision procedure. That is, MSISDNs or groups of MSISDN are listed for which the LCS Client may issue a non-call related MT-LR. Separate lists of MSISDNs may be associated with each distinct external or non-call related client identity. Location information may be provided by the LCS server to the LCS client in response to a request for location information from a user with a MSISDN number that appears in said list.

**[0013]** The LCS Client who is external to the PLMN system may only be enabled to validly issue location information requests for those MSISDNs which are found on the "Authorized UE List". That is, the LCS clients request may only be responded for subscribers who subscribe to the location services provided by the PLMN, as their MSISDNs would not otherwise appear on the list.

**[0014]** Request from the LCS Client are authenticated based on a combination of a Client ID and password stored in a LCS Client profile at the LSC server (e.g. the GMLC) and authorized based on the "Authorized UE List". That is, the LCS client is authorised to receive location information from the GMLC entity if the requesting user equipment (UE) is found from the list

**[0015]** LCS clients are typically Application Service Providers (ASP) who are not a part of the PLMN system. Therefore the operator of the PLMN may not be able to control the behaviour of the LCS client.

**[0016]** Another problem is that the ASPs may be authorised to send information to a subscriber. ASPs can provide a wide range of information. The subscriber, once he has authorised a particular ASP is not able to control what sort of information is received. This can lead for example to children receiving adult type material. Clearly this is disadvantageous.

## Summary of the Invention

**[0017]** Embodiments of the present invention aim to address one or several of the above problems.

**[0018]** According to a first aspect of the present invention there is provided a method according to claim 1.

**[0019]** According to a second aspect of the present invention there is provided a telecommunications net-

work according to claim 16

**[0020]** According to a third aspect of the present invention there is provided an entity according to claim 19

**[0021]** According to a fourth aspect of the present invention not currently claimed in independent form there is provided a method for controlling a service provided to a user in a telecommunications network from at least one information provider, said network having identifying information defining the at least one type of service which can be provided to said user, said method comprising the steps of determining the type of service which an information provider proposes to provide to said user, and using said determined type of service and said identifying information to control if said proposed service can be provided to said user.

**[0022]** Brief Description of Drawings

**[0023]** For better understanding of the present invention, and as to how the same may be carried into effect, reference will now be made by way of example to the accompanying drawings in which:

Figure 1 shows a system in which embodiments of the present invention can be used ; and
Figure 2 shows an embodiment of the invention.

Description of Preferred Embodiments of the Invention

**[0024]** Reference is made to Figure 1 which is a simplified presentation of a cellular system providing location services. It should be appreciated that even though the exemplifying telecommunications network shown and described in more detail uses the terminology of the third generation (3G) UMTS (Universal Mobile Telecommunications System) public land mobile network (PLMN), the proposed solution can be used in any system providing mobile communications for users and some kind of location information service. Examples of other telecommunications systems include, without limiting to these, standards such as the GSM (Global System for Mobile communications) or various GSM based systems (such as GPRS: General Packet Radio Service), AMPS (American Mobile Phone System) or DAMPS (Digital AMPS), IMT 2000 (International Mobile Telecommunications system 2000), i-phone and so on.

**[0025]** More particularly, Figure 1 shows an arrangement in which base stations 3 (only three shown for clarity) of the cellular system 1 provide radio coverage areas i.e. cells 2. Each radio coverage area 2 is typically served by a base station. It should be appreciated that one cell may include more than one base station site. A base station apparatus or site may also provide more than one cell. The shape and size of the cells 2 depend on the implementation and may be different from the illustrated shapes. The shape and size of the cells may also vary from cell to cell. It should be appreciated that in some systems the base station may be referred to as Node B.

**[0026]** Two user equipment such as mobile stations (MS) 6 are also shown. It shall be appreciated that typically a number of user equipment will be in communication with each base station. Each base station is arranged to transmit signals to and receive signals from the mobile user equipment (UE) 6 via a wireless interface. Likewise, the user equipment 6 are able to transmit signals to and receive signals from the base stations.

**[0027]** Each of the base stations is connected to an access network controller such as a radio network controller (RNC) 7 of a UMTS terrestrial radio access network (UTRAN) or a base station controller of a GSM type system. The radio network controller may be connected to appropriate core network entities of the cellular system, such as a MSC (mobile switching centre) 8 and/or SGSN (serving general packet radio service support node) 11, via a suitable interface arrangement.

**[0028]** The location of a mobile user equipment may vary in time as the user equipment is free to move within the coverage area of a base station and also from a coverage area to another coverage area. The modem communication systems are capable of providing information regarding the geographical location of a user equipment within the coverage area thereof. The geographical location may be defined on the basis of the position of the mobile station relative to the base station(s) of the mobile telecommunications network.

**[0029]** The geographical location of the user equipment may be defined, for example, in X and Y co-ordinates or in latitudes and longitudes. A possibility is to use the relation between defined radiuses and angles, e.g. based on the spherical coordinate system or alike. It is also possible to define the location of the base stations and/or mobile stations in vertical directions. For example, Z co-ordinate may be used when providing the location information in the vertical direction. The vertical location may be needed e.g. in mountainous environments or in cities with tall buildings.

**[0030]** Reference is made to Figure 2 which shows in more detail the location elements of a communications system. The base stations and radio network controllers define a radio access network 14. Different networks have equivalent elements.

**[0031]** The location service (LCS) functionality of the communication system is provided by a Gateway Mobile Location Center (GMLC) entity 10. The GMLC location service node 10 is for gathering and storing data that is required for the provision of the location information. The location service node 10 is arranged to receive via appropriate interface means information concerning the location of the mobile user equipment from the cellular system.

**[0032]** The cellular system may be provided with various different means for processing information gathered from the cells and/or some other parameters and/or for computing by processor means appropriate calculations for determining and outputting the geographical location of the target user equipment. The location information may be obtained by using one or more of the appropriate location techniques. At least a part of the location infor-

mation may be provided based on information provided by system that is separate from the communication system, such as by means of the Global Positioning System (GPS) or similar. Since there are various possibilities how to implement the location services in the cellular system and since the invention is not dependent on the used location determination technology, these are not described in any greater detail herein.

**[0033]** In order to be able to separate the user equipment from each other, the location service entity 10 is capable of processing at least one form of identifiers. The identity information may be provided e.g. by means of a mobile subscriber ISDN number (MSISDN), an international mobile subscriber identifier (IMSI) or a temporary identifier (such as a temporary international mobile subscriber identifier. TIMSI) of the mobile user equipment, passwords, or any other form of identifier that can be reliably used for identifying a user equipment and/or a user.

**[0034]** The GMLC server 10 is arranged to receive location information from the radio access network 14 via appropriate controller entities such as the MSC 8 and/or SGSN connected by the appropriate interface means to the access network.

**[0035]** The GMLC 10 may provide the location information in a predefined manner to a location services (LCS) client 12. A LCS Client 12 can be any entity that makes use of the location information. The LCS client 12 can be seen as a logical functional entity that may make a request to the location service entity 10 for the location information of one or more target user equipment. The LCS client 12 may be an entity that is external to the communication network 1, the client entity 12 being provided in an ASP domain 4. Examples of an ASP are Yahoo and Aktivist. The LCS client may also be an internal client (ILCS) i.e. reside in any entity or node (including the mobile station) within the communication system 1.

**[0036]** The LCS clients are entitled to receive at least some degree of information concerning the location (or location history) of a target user equipment. The particular requirements and characteristics of a LCS Client are typically known to the location service server of the communication system by its LCS client subscription profile. This is discussed in more detail hereinafter.

**[0037]** The GMLC 10 may consist of components and bearers needed to serve the LCS client 12. The GMLC 10 may provide a platform which will enable the support of location based services in parallel with other telecommunication services such as speech, data, messaging, other teleservices, user applications and supplementary services. The GMLC 10 may thus provide the client 12, on request or periodically, the current or most recent geographic location (if available) of the target user equipment or, if the location fails, an error indication and optionally the reason for the failure. A more detailed description of a LCS entity that may be employed in the embodiments of can be found e.g. from the above referenced 3GPP technical specification No. 3GPP TS23.271.

**[0038]** A home location register 20 is provided. The home location register is arranged to store information for each user of the network as to whether or not location information relating to that user can be given to a client. If so, the clients from which the user can receive information are listed. Additionally, each LCS client 12 from which the mobile station 3 can receive information can optionally have a service type identity. This service type identity specifies the type of service which the user 3 has subscribed or is happy to receive information. In this context STID identifies the individual service which is allowed to locate the subscriber. There may be no need for subscription or usage of that service (the subscriber is not necessarily using the service which wants to locate him e.g. find your friend) The service type identifier can for example identify dating services, games, chat room services, adult services, entertainment services, travel services or any other services. It should be appreciated that these services listed are by way of example. The number of service types which may be provided can be as little as two or very much larger. The actual categories of services can be any suitable form.

**[0039]** When an LCS request is received from an LCS client, that request includes information identifying the client and the particular service type. In practice, the STID may be optional. For a given user, a check is made in the MSC/VLR to see whether or not the user 3 is to receive that information. The service provider and/or service type information are in the HLR and are transferred to the MSC/VLR. If the check is positive, the location request is processed. If the service is one to which the user does not subscribe or does not want, then the request is terminated.

**[0040]** It should be appreciated that when the user 3 roams to a different network, the so-called "visited network", the information associated with that user is copied from the home location register 20 to the visitor location register of the visited network. The check as to whether or not the user can receive the information is made in a MSC of the visited network using the information temporarily stored in the VLR.

Thus, the information identifying the LCS client is used to screen requests from the client based on the identity of the client. Thus, the user can control which LCS clients can make location requests relating to the user.

**[0041]** In the described embodiment of the invention, the home location register lists those LCS clients from which location requests can be processed. In alternative embodiments of the invention, the home location register can list those LCS clients from which no location requests can be processed. In other words, if a request is received from an LCS client which is not included in the HLR, then that request is not processed.

**[0042]** The service type identifier indicates for a given service provider the types of service in respect of which a location service can be received. In this way, the user can avoid getting location requests in respect of services

which are inappropriate or unwanted. As with the LCS client information, the service type identity may indicate those types of service, for a given LCS client which are not required and in respect of which any location request should be terminated. In preferred embodiments of the invention at least some of the service type identifiers can be globally standardised.

**[0043]** With the current proposals, there is a MAP provide subscriber location message which includes the LCS client identifier. This can be modified in preferred embodiments of the present invention to also include the service type identity. The GMLC uses the client identity to screen the unwanted service providers to thereby block location requests from service providers which are not validated by the GMLC operator. Typically, a commercial agreement will need to be in place between the GMLC operator and the service provider. The mobile services switching centre uses the client identity to protect the subscriber from non-validated services. In practice, when receiving the message including the identity, the MSC maps it to the subscriber's privacy parameters stored in the HLR to screen out unwanted location calculations. Furthermore, the GMLC can use the service type identifier to specify more precise application/LCS client screening to thereby screen out not only particular service providers but also individual service types. In the MSC, more detailed subscriber privacy checks are possible. In particular, the subscriber can specify that location information is available to certain types of services provided by a service provider but not other types.

**[0044]** It should be appreciated that the GMLC or other suitable entity can instead or additionally make the checks carried out by the MSC. In this case, the service identity can be used to transport the result (eg passed, send notification etc) to the MSC. This enables more advanced profiles to be used based on the time of day, the user's rough location or the like. For example, the GMLC makes a check if the check passes, then the service type identifier is set to a given value. The MSC can look at the value of the service type identifier and if it has the given value, then the location service can be provided or the service indicated provided. Thus in some embodiments of the present inventions the service type identifier can be used to transfer the results of checks made by the GMLC or the like.

**[0045]** In alternative embodiments of the present invention, the service type only is specified. In other words, for a specified service type, any request relating to that service type will be processed, regardless of the identity of the LCS client. In other words, information identifying the LCS client in the HLR can be omitted.

**[0046]** Embodiments of the present invention may be applied additionally or alternatively to presence profiles. The presence service provides access to presence information to be made available to other users or services. Presence information is a set of attributes characterising current properties of presentities (or user) such as status, an optional communication address and other optional attributes etc. For example presence information could be the following status: "meting", location: " Espoo", voice mail "activated" etc.

**[0047]** The term "watcher" in presence means in simple terms an application or user requesting presence information. "Presentity" is the one that has the presence information to be given to a watcher. ("Principal" is the kind of a owner of information.)

**[0048]** The principal that controls the presentity shall be able to define access rules, in order to control how the presentity's presence information is made available for watchers. These access rules shall define

a list of watchers allowed access to the presentity's presence information. This list of watchers allowed access to the presentity's presence information. This list can be defined in several ways. For example watchers x and y are allowed, or every watcher is allowed except watcher z.

the validity of the access authorisation granted for a given watcher. The access to the presentity's presence information can be restricted for a certain period, or during specific periods of the day.

the attributes of the presentity's presence information that can be made available to a given watcher.

the ability to provide different presence information based on the watcher and principal's preferences (e.g. its availability). For example: watcher x receives 'Online/Instant Messaging/im:a@there.com', while watcher y receives 'Offline/Instant Messaging/im:a@there.com'.

A set of default access rules shall be defined by the principal.

The Home Environment shall be able to override the privacy requirements if needed.

**[0049]** Embodiments of the inventions can be used to define types of information or service to be provided. Embodiments of the invention can be used to control other aspects of the presence service.

**[0050]** Embodiments of the present invention may be applied additionally or alternatively to user profiles. The User Profile logically is a set of information relevant for a given user. In embodiments of the invention only certain applications are entitled to access the user's service profile.

**[0051]** An application shall be enabled to access User Profile data as long as permission is granted by the User Profile Access Manager. The User Profile Access Manager shall be able to:

verify authorised access to the requested parts of the User Profile for a given application and User,

identify the type of access which is requested,

elaborate the access rights for the request,

permit dedicated access,

verify the granted access, and

deny access requests. -

**[0052]** An application has to pass the framework functions prior to initiating the authorisation mechanism of the User Profile Access Manager.

**[0053]** The type of access is one out of:

reading user profile information; in case parts of the User profile is subject for reading it shall unambiguously be identified by the application,

adding information to the user profile,

modify existing information in the user profile.

**[0054]** The control of access rights are in principle on the user's discretion. The user shall have the possibility to allow or restrict the retrieval and presentation of the user related data.

**[0055]** Embodiments of the invention are arranged to define types of service or information to be provided. Embodiments of the invention can be used to control other aspects of the presence service.

**[0056]** It should be appreciated that embodiments of the present invention have been described in the context of location requests. However, in alternative embodiments of the present invention, the service provider identity and/or the service type identity can be used to screen the information which is sent to a mobile station without there being any location requests.

**[0057]** In alternative embodiments of the present invention, the user is able to define sets of service type identifiers which may be associated with one or more location service clients.

**[0058]** In alternative embodiments of the present invention, the user is able to define sets of service type identifiers which may be associated with one or more information providers.

**[0059]** In alternative embodiments of the present invention, the services may be divided into sets of services. In those circumstances, the service type identifier would identify a given set. It should be appreciated that in embodiments of the present invention, the various functions associated with the various described entities may be provided in different entities or may be distributed.

**[0060]** It should be appreciated that whilst embodiments of the present invention have been described in relation to user equipment such as mobile stations, embodiments of the present invention are applicable to any other suitable type of user equipment.

**[0061]** The embodiment of the present invention has been described in the context of a third generation communication system. This invention is also applicable to any other communication system.

**[0062]** It is also noted herein that while the above describes exemplifying embodiments of the invention, there are several variations and modifications which may be made to the disclosed solution without departing from the scope of the present invention as defined in the appended claims.

## Claims

1. A method for controlling services provided to a user (3) in a telecommunications network from at least one information provider (12), said network having identifying information defining the at least one type of service which can be provided to said user (3), wherein the identifying information comprises a service type identity, said method comprising the steps of

   determining the type of service which an information provider (12) proposes to provide to said user (3);
   using said identifying information and the determined type of service to control if said proposed service can be provided to said user (3);
   receiving from the information provider (12) a request for location information relating to said user (3); and
   providing location information if it is determined that the type of service proposed to be provided to said user (3) is as defined by the identifying information.

2. A method as claimed in claim 1, wherein said service type identity identifies at least one type of service which can be provided to said user (3).

3. A method as claimed in claim 1, wherein said service type identity identifies at least one type of service which shall not be provided to said user (3).

4. A method as claimed in any preceding claim, comprising the step of said user (3) defining said identifying information.

5. A method as claimed in any preceding claim, comprising the step of storing said identifying information in a data store.

6. A method as claimed in any preceding claim, wherein said network comprises a wireless network.

7. A method as claimed in any preceding claim, wherein said network comprises a cellular communications network.

8. A method as claimed in claim 6 or 7, wherein said network is a Universal Mobile elecommunications System, UMTS, network.

9. A method as claimed in claim 6, 7 or 8, when appended to claim 5 wherein said data store is a home location register.

**10.** A method as claimed in any preceding claim, wherein said identifying information further identifies at least one information provider (12) from which a user (3) is able to receive at least one service.

**11.** A method as claimed in any preceding claim, wherein said at least some of said services are location dependent.

**12.** A method as claimed in claim 1, wherein said request identifies the type of service which the information provider (12) proposes to provide in response to location information relating to said user (3).

**13.** A method as claimed in any preceding claim, wherein said at least one information provider (12) is an internet service provider.

**14.** A method as claimed in any preceding claim, wherein said service is at least one of a location service, a presence service and a user (3) profile service.

**15.** A method as claimed in any preceding claim, wherein said user (3) is a mobile station.

**16.** A telecommunications network comprising:

means for storing identifying information defining at least one type of service which can be provided to a user (3), said identifying information comprising a service type identity;
means for determining the type of service which an information provider (12) proposes to provide to said user (3);
means for using said identifying information and the determined type of service to control if said proposed service is provided to said user (3);
means for receiving from the information provider (12) a request for location information relating to said user (3); and
means for providing location information if it is determined that the type of service proposed to be provided to said user (3) is as defined by the identifying information.

**17.** A telecommunications network as claimed in claim 16, wherein said storing means comprises a home location register.

**18.** A telecommunications network as claimed in claim 16 or 17, wherein at least one of said determining means and said using means is provided in a Gateway Mobile Location Centre, GMLC and/or a Mobile Switching Centre, MSC

**19.** An entity for use in a telecommunications network, said entity comprising:

means for receiving identifying informations for a user (3) defining at least one type of service which can be provided to that user (3) from an information provider (12), said identifying information comprising a service type identity;
means for determining the type of service an information provider (12) proposes to provide to said user (3);
means for using said identifying information and the determined type of service to control if said proposed service can be provided to said user (3);
means for receiving from the information provider (12) a request for location information relating to said user (3); and
means for providing location information if it is determined that the type of service proposed to be provided to said user (3) is as defined by the identifying information.

**20.** An entity as claimed in claim 19, wherein the identifying information is defined by said user (3).

**21.** An entity as claimed in claim 19 or 20, wherein said user (3) is a mobile station.

**Patentansprüche**

**1.** Verfahren zum Steuern von Diensten, die einem Benutzer (3) in einem Telekommunikationsnetzwerk von mindestens einem Informations-Anbieter (12) bereitgestellt werden, wobei das Netzwerk Identifikations-Informationen aufweist, welche die mindestens eine Art von Dienst definieren, der dem Benutzer (3) bereitgestellt werden kann, wobei die Identifikations-Informationen eine Identität einer Dienst-Art umfassen, wobei das Verfahren die Schritte umfasst:

- Bestimmen der Art von Dienst, den ein Informations-Anbieter (12) vorschlägt, dem Benutzer (3) bereitzustellen;
- Verwinden der Identifikations-Inforrrationen und der bestimmten Art von Dienst, um zu steuern, ob der vorgeschlagene Dienst dem Benutzer (3) bereitgestellt werden kann;
- Empfangen einer Anforderung von Ortsinformationen, die sich auf den Benutzer (3) beziehen, von dem Informations-Anbieter (12); und
- Bereitstellen von Ortsinformationen, falls bestimmt wird, dass die Art von Dienst, von dem vorgeschlagen wurde, ihn dem Benutzer (3) bereitzustellen, so ist, wie durch die Identifikations-Informationen definiert ist.

**2.** Verfahren nach Anspruch 1, wobei die Identität der Dienst-Art mindestens eine Art von Dienst identifi-

ziert, der dem Benutzer (3) bereitgestellt werden kann.

**3.** Verfahren nach Anspruch 1, wobei die Identität der Dienst-Art mindestens eine Art von Dienst identifiziert, der dem Benutzer (3) nicht bereitgestellt werden soll.

**4.** Verfahren nach einem der vorhergehenden Ansprüche, weiter umfassend den Schritt, dass der Benutzer (3) die Identifikations-Informationen definiert.

**5.** Verfahren nach einem der vorhergehenden Ansprüche, weiter umfassend den Schritt des Speicherns der Identifikations-Informationen in einem Datenspeicher.

**6.** Verfahren nach einem der vorhergehenden Ansprüche, wobei das Netzwerk ein drahtloses Netzwerk umfasst.

**7.** Verfahren nach einem der vorhergehenden Ansprüche, wobei das Netzwerk ein zellulares Komnunikationsnetzwerk umfasst.

**8.** Verfahren nach einem der Ansprüche 6 oder 7, wobei das Netzwerk ein Universal Mobile Telecommunications System, UMTS, Netzwerk ist.

**9.** Verfahren nach einem der Ansprüche 6, 7 oder 8, wenn abhängig von Anspruch 5, wobei der Datenspeicher ein Home Location Register ist.

**10.** Verfahren nach einem der vorhergehenden Ansprüche, wobei die Identifikations-Informationen weiter mindestens einen Informations-Anbieter (12) identifizieren, von dem ein Benutzer (3) in der Lage ist, mindestens einen Dienst zu empfangen.

**11.** Verfahren nach einem der vorhergehenden Anspruche, wobei die mindestens einigen der Dienste ortsabhängig sind.

**12.** Verfahren nach Anspruch 1, wobei die Anforderung die Art von Dienst identifiziert, den der Informations-Anbieter (12) vorschlägt, in Reaktion auf Ortsinformationen bereitzustellen, die sich auf den Benutzer (3) beziehen.

**13.** Verfahren nach einem der vorhergehenden Ansprüche, wobei der mindestens eine Informations-Anbieter (12) ein Internet-Dienst-Anbieter ist.

**14.** Verfahren nach einem der vorhergehenden Ansprüche, wobei der Dienst mindestens einer von einem Ortsdienst, einem Präsenzdienst und einem Benutzer (3) -Profildienst ist.

**15.** Verfahren nach einem der vorhergehenden Ansprüche, wobei der Benutzer (3) eine Mobilstation ist

**16.** Telekommunikationsnetzwerk, umfassend:

- Mittel zum Speichern von Identifikations-informationen, die mindestens eine Art von Dienst definieren, der einem Benutzer (3) bereitgestellt werden kann, wobei die Identifikations-Informationen eine Identität einer Dienst-Art umfassen;
- Mittel zum Bestimmen der Art von Dienst, die ein Informations-Anbieter (12) vorschlägt, dem Benutzer (3) bereitzustellen;
- Mittel zum Verwenden der Identilikations-Informationcn und der bestimmten Art des Dienstes, um zu steuern, ob der vorgeschlagene Dienst dem Benutzer (3) bereitgestellt wird;
- Mittel zum Empfangen einer Anforderung von Ortsinformationen, die sich auf den Benutzer (3) beziehen, von dem Informations-Anbieter (12); und
- Mittel zum Bereitstellen von Ortsinformationen, falls bestimmt wird, dass die Art von Dienst, von dem vorgeschlagen wurde, ihn dem Benutzer (3) bereitzustellen, so ist, wie er durch die Identifikations-Informationen definiert ist.

**17.** Telekommunikationsnetzwerk nach Anspruch 16, wobei das Speichermittel ein Home Location Register umfasst.

**18.** Telekommunikationsnetzwerk nach Anspruch 16 oder 17, wobei mindestens das Bestimmungsmittel oder das Verwendungsmittel in einem Gateway Mobile Location Centre, GMLC, und/oder einem Mobile Switching Centre, MSC, bereitgestellt ist.

**19.** Einheit zur Verwendung in einem Telekommunikationsnetzwerk, wobei die Einheit umfasst:

- Mittel zum Empfangen von Identifikations-Informationen für einen Benutzer (3), die mindestens eine Art von Dienst definieren, der dem Benutzer (3) bereitgestellt werden kann, von einem Informationsanbieter (12), wobei die Identifikations-Informationen eine Identität der Dienst-Art umfassen;
- Mittel zum Bestimmen der Art von Dienst, den ein Informations-Anbieter (12) vorschlägt, dem Benutzer (3) bereitzustellen;
- Mittel zum Verwenden der Identifikations-Informationen und der bestimmten Art von Dienst, um zu steuern, ob der vorgeschlagene Dienst dem Benutzer (3) bereitgestellt werden kann;
- Mittel zum Empfangen einer Anforderung von Ortsinformationen, die sich auf den Benutzer (3) beziehen, von dem Informations-Anbieter (12); und

- Mittel zum Bereitstellen von Ortsinformationen, falls bestimmt wird, dass die Art von Dienst, von dem vorgeschlagen wurde, ihn dem Benutzer (3) bereitzustellen, so ist, wie durch die Identifikations-Informationen definiert ist

**20.** Einheit nach Anspruch 19, wobei die Identifikations-Informationen durch den Benutzer (3) definiert werden,

**21.** Einheit nach Anspruch 19 oder 20, wobei der Benutzer (3) eine Mobilstation ist.

**Revendications**

**1.** Procédé de contrôle de services fournis à un utilisateur (3) dans un réseau de télécommunications par au moins un fournisseur d'informations (12), ledit réseau ayant des informations d'identification définissant le ou les types de services qui peuvent être fournis au dit utilisateur (3), dans lequel les informations d'identification comprennent une identité de type de service, ledit procédé comprenant les étapes consistant à :

déterminer le type de service qu'un fournisseur d'informations (12) propose de fournir au dit utilisateur (3) ;
utiliser lesdites informations d'identification et le type déterminé de service pour contrôler si ledit service proposé peut être fourni au dit utilisateur (3) ;
recevoir du fournisseur d'informations (12) une demande d'informations d'emplacement en ce qui concerne ledit utilisateur (3) ; et
fournir les informations d'emplacement s'il est déterminé que le type de service proposé au dit utilisateur (3) correspond à ce qui est défini par les informations d'identification.

**2.** Procédé selon la revendication 1, dans lequel ladite identité de type de service identifie au moins un type de service qui peut être fourni au dit utilisateur (3).

**3.** Procédé selon la revendication 1, dans lequel ladite identité de type de service identifie au moins un type de service qui ne doit pas être fourni au dit utilisateur (3).

**4.** Procédé selon l'une quelconque des revendications précédentes, comprenant l'étape consistant à définir lesdites informations d'identification par ledit utilisateur (3).

**5.** Procédé selon l'une quelconque des revendications précédentes, comprenant l'étape consistant à stocker lesdites informations d'identification dans un stockage de données.

**6.** Procédé selon l'une quelconque des revendications précédentes, dans lequel ledit réseau comprend un réseau sans fil.

**7.** Procédé selon l'une quelconque des revendications précédentes, dans lequel ledit réseau comprend un réseau de communication cellulaire.

**8.** Procédé selon la revendication 6 ou 7, dans lequel ledit réseau est un réseau de système de télécommunication mobile universel, UMTS.

**9.** Procédé selon la revendication 6, 7 ou 8, lorsqu'elle dépend de la revendication 5, dans lequel ledit stockage de données est un enregistreur de localisation nominal.

**10.** Procédé selon l'une quelconque des revendications précédentes, dans lequel lesdites informations d'identification identifient en outre au moins un fournisseur d'informations (12) duquel un utilisateur (3) peut recevoir au moins un service.

**11.** Procédé selon l'une quelconque des revendications précédentes, dans lequel au moins certains desdits services dépendent de l'emplacement.

**12.** Procédé selon la revendication 1, dans lequel ladite demande identifie le type de service que le fournisseur d'informations (12) propose de fournir en réponse aux informations d'emplacement en ce qui concerne ledit utilisateur (3).

**13.** Procédé selon l'une quelconque des revendications précédentes, dans lequel ledit au moins un fournisseur d'informations (12) est un fournisseur d'accès Internet.

**14.** Procédé selon l'une quelconque des revendications précédentes, dans lequel ledit service est au moins l'un d'un service de localisation, d'un service de présence et d'un service de profil d'utilisateur (3),

**15.** Procédé selon l'une quelconque des revendications précédentes, dans lequel ledit utilisateur (3) est une station mobile.

**16.** Réseau de télécommunications comprenant :

un moyen pour stocker des informations d'identification définissant le ou les types de services qui peuvent être fournis à un utilisateur (3), lesdites informations d'identification comprenant une identité de type de service ;
un moyen pour déterminer le type de service qu'un fournisseur d'informations (12) propose

de fournir au dit utilisateur (3) ;
un moyen pour utiliser lesdites informations d'identification et le type déterminé de service pour contrôler si ledit service proposé peut être fourni au dit utilisateur (3) ;
un moyen pour recevoir du fournisseur d'informations (12) une demande d'informations d'emplacement en ce qui concerne ledit utilisateur (3) ; et
un moyen pour fournir les informations d'emplacement s'il est déterminé que le type de service proposé au dit utilisateur (3) correspond à ce qui est défini par les informations d'identification,

**17.** Réseau de télécommunications selon la revendication 16, dans lequel ledit moyen de stockage comprend un enregistreur de localisation nominal.

**18.** Réseau de télécommunications selon la revendication 16 ou 17, dans lequel au moins l'un dudit moyen de détermination et dudit moyen d'utilisation est fourni dans un centre de localisation mobile de passerelle, GMLC, et/ou un centre de commutation mobile, MSC.

**19.** Entité destinée à une utilisation dans un réseau de télécommunications, ladite entité comprenant :

un moyen pour recevoir des informations d'identification pour un utilisateur (3) définissant le ou les types de services qui peuvent être fournis à cet utilisateur (3) par un fournisseur d'informations (12), lesdites informations d'identification comprenant une identité de type de service ;
un moyen pour déterminer le type de service qu'un fournisseur d'informations (12) propose de fournir au dit utilisateur (3) ;
un moyen pour utiliser lesdites informations d'identification et le type déterminé de service pour contrôler si ledit service proposé peut être fourni au dit utilisateur (3) ;
un moyen pour recevoir du fournisseur d'informations (12) une demande d'informations d'emplacement en ce qui concerne ledit utilisateur (3) ; et
un moyen pour fournir les informations d'emplacement s'il est déterminé que le type de service proposé au dit utilisateur (3) correspond à ce qui est défini par les informations d'identification.

**20.** Entité selon la revendication 19, dans laquelle les informations d'identification sont définies par ledit utilisateur (3).

**21.** Entité selon la revendication 19 ou 20, dans laquelle ledit utilisateur (3) est une station mobile.

Fig. 1

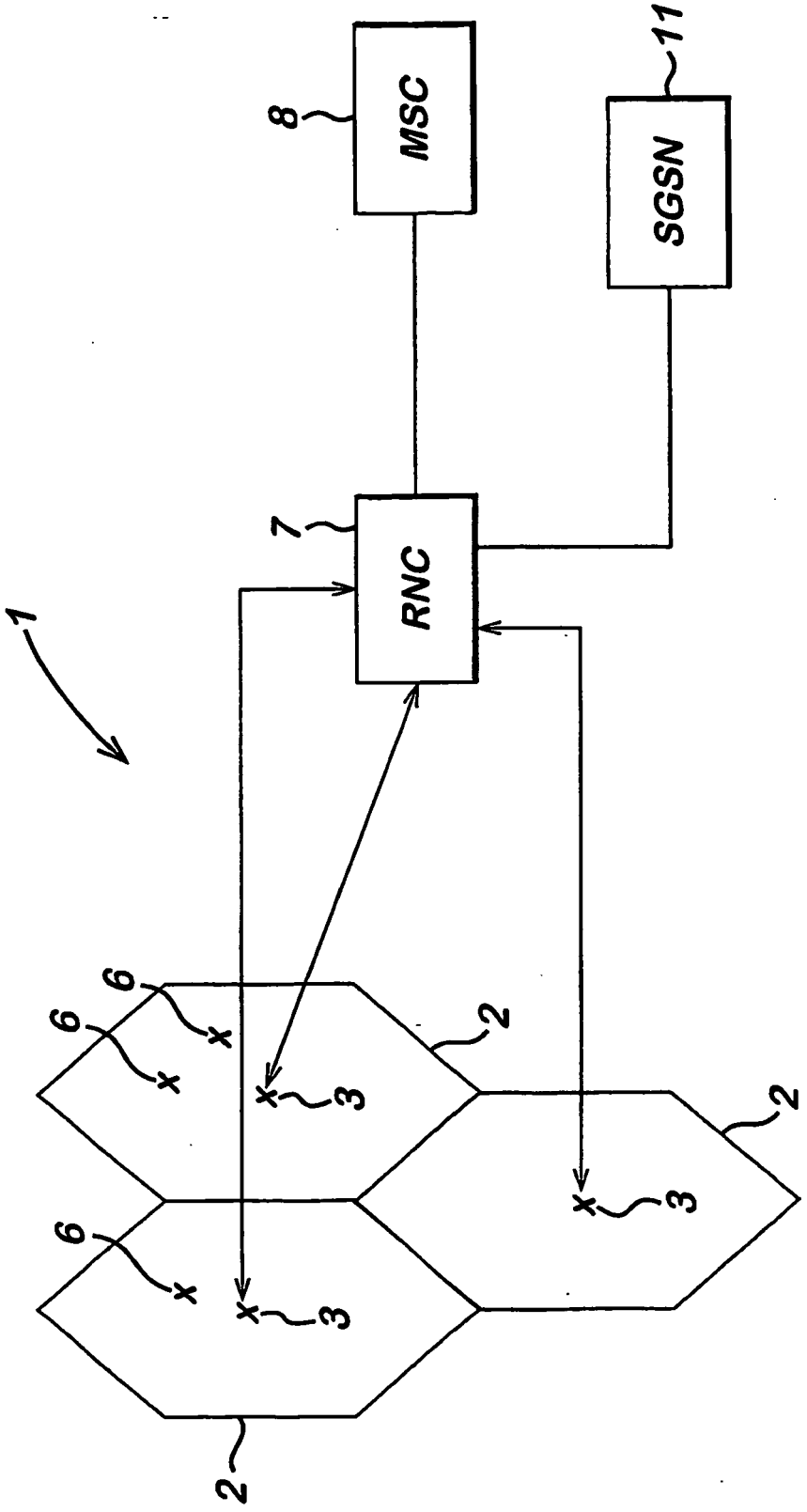
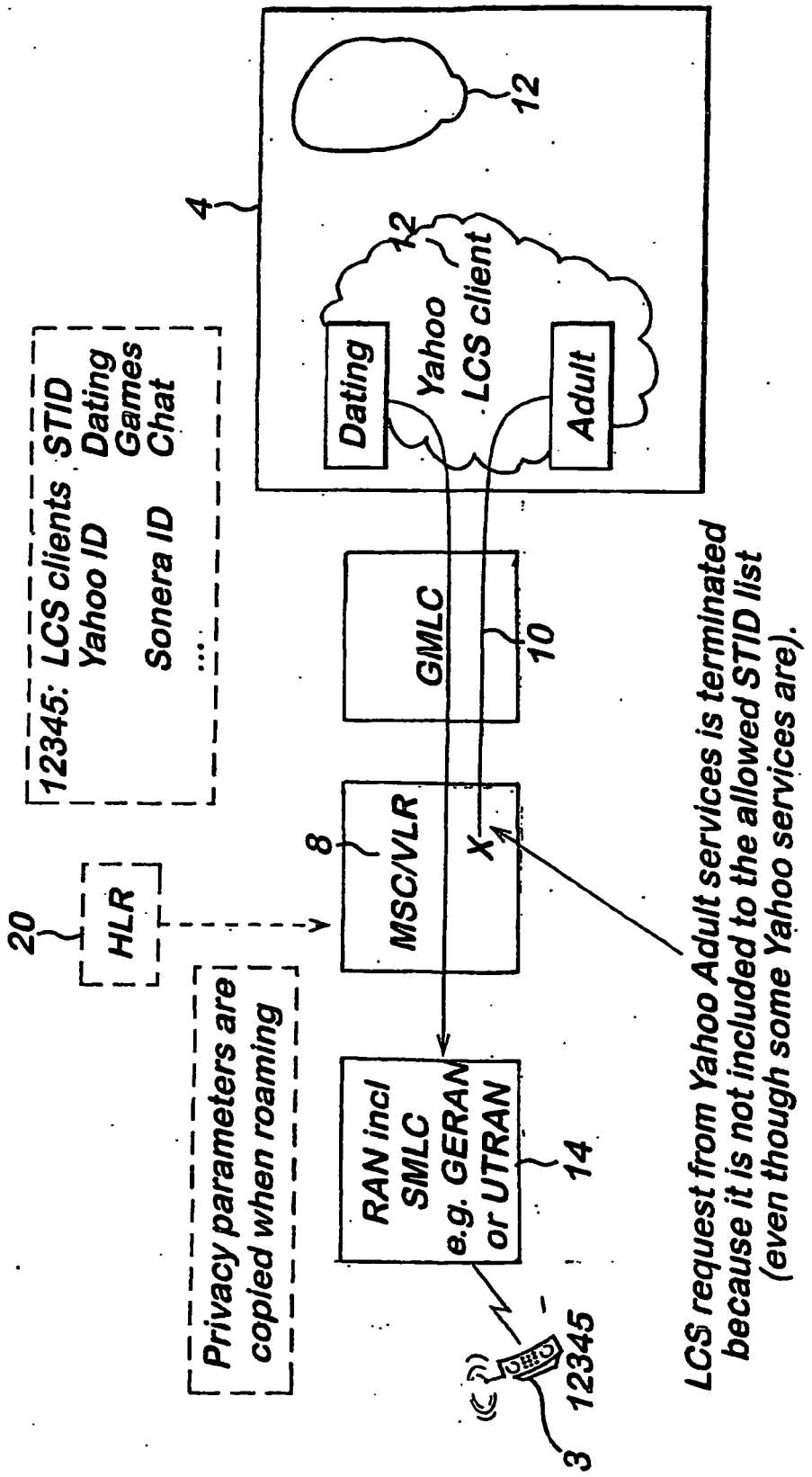


Fig. 2


12345: LCS clients
Yahoo ID
Sonera ID
...
STID
Dating
Games
Chat
4
12
12
Yahoo LCS client
Dating
Adult
GMLC
10
MSC/VLR
8
X
HLR
20
Privacy parameters are copied when roaming
RAN incl SMLC e.g. GERAN or UTRAN
14
12345
3
LCS request from Yahoo Adult services is terminated because it is not included to the allowed STID list (even though some Yahoo services are).

## REFERENCES CITED IN THE DESCRIPTION

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