(54) Title: A METHOD FOR PROVIDING A COMMUNICATIONS NETWORK SUBSCRIBER WITH AN ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY AND A DUAL ANONYMOUS COMMUNICATION SYSTEM

(57) Abstract: The present invention describes a communications network based method for providing a communications network subscriber using SIP signalling for communication path set up with an anonymous temporary identity and a dual anonymous communication system. In the solution according to the present invention a subscriber can reserve a temporary subscriber identity or even several temporary subscriber identities. The temporary subscriber identity will be associated to the person’s real phone number in the application server that handles dual anonymous communication in the communications network.
A METHOD FOR PROVIDING A COMMUNICATIONS NETWORK SUBSCRIBER
WITH AN ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY AND A DUAL
ANONYMOUS COMMUNICATION SYSTEM

Technical field of the invention

The present invention relates in general to communication networks and more specifically to a communications network based method for providing a communications network subscriber with an anonymous temporary subscriber identity and to a dual anonymous communication system.

Background of the invention

The background of the invention is discussed briefly in the following.

With dual anonymous communication is meant communication between two parties, where neither originating nor terminating party knows the other party’s real subscriber identity.

Today, the most typical and popular form of dual anonymous communication is anonymous chatting. One can do anonymous chatting on the Internet in several forums, GSM chat, on the TV, over GSM and other forums (GSM, Global System for Mobile communication). By ‘anonymous’ in this context is meant that the people in the chat forum do not (necessarily) know the real identity (name, e-mail address, phone number, etc.) of each other.

The problem arises when two parties in the chat forum want to talk to each other on the phone while still wanting to keep their identity secret from the other party.
One may imagine two persons A and B who don't know each other chatting either in the TV using SMS (SMS, Short Message Service) or on the Internet using aliases. They would like to call each other to arrange e.g. a date but both of them are too shy to give their real phone number or don't want to give the real number in case the other person turns out to be a troublemaker. This is especially true when the chat is going on in TV - as then lots of other people might see the real phone number and start harassing.

Already today there exists services that enable anonymous calls to voice chat rooms. It is also possible for the originating party to suppress his subscriber identity. Anonymous e-mail has also been possible for years. The originating party can also use Calling Line Identity Restriction to suppress his phone number.

There also exist today certain known technologies for anonymous communication. However, these are limited to certain services and apply on circuit-switched networks that are gradually being phased out as all communication (speech, data) is moving to IP based networks.

Nevertheless, in the IP based networks, there does not exist services that would enable anonymous calls between two parties, where neither calling nor called subscriber knows the other party’s real subscriber identity.

Furthermore, there does not exist services that would enable dual anonymous one-to-one communication using the same account for all types of communication (e.g. voice, data, e-mail, etc.).

There is a need for a communications network based method for providing a communications network subscriber with an
anonymous temporary subscriber identity and for a dual
anonymous communication system. This need exists both in
present circuit-switched wireline and wireless networks as
well as in IP based networks.

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Summary of the present invention

It is an object of the present invention to overcome or at
least mitigate the disadvantages of the prior art. The
present invention realizes a communications network based
method for providing a communications network subscriber
with an anonymous temporary subscriber identity and a dual
anonymous communication system.

15 According to a first aspect of the present invention there
is presented a method for providing a communications net-
work subscriber with an anonymous temporary subscriber
identity realized in a communications network having an
originating party A and a terminating party B connected to
the network, characterized in that the method comprises
the steps of
- the terminating party B requesting an anonymous tem-
  porary subscriber identity,
- the communications network reserving an anonymous
temporary subscriber identity to which the regular sub-
scriber identity of the terminating party B in the commu-
nications network is associated,
- the communications network providing the anonymous
temporary subscriber identity to the terminating party B,
- the terminating party B announcing the received
  anonymous temporary subscriber identity in an open forum,
- the originating party A initiating a communication
  path towards the anonymous temporary subscriber identity
  of the terminating party B in the communications network,
- the communications network establishing a communica-
tion path between the originating party A and the termi-
nating party B using the regular subscriber identity of the terminating party B associated with the anonymous temporary subscriber identity.

Preferably, in the method according to present invention, the terminating party B requests the anonymous temporary subscriber identity via Internet. Alternatively, the terminating party B requests the anonymous temporary subscriber identity via an SMS-interface (SMS, Short Message Service). Alternatively, the terminating party B requests the anonymous temporary subscriber identity via a WAP-interface (WAP, Wireless Application Protocol). Alternatively, the terminating party B requests the anonymous temporary subscriber identity by dialing a number in the communications network. Alternatively, the terminating party B requests the anonymous temporary subscriber identity via an email-interface. Preferably, the terminating party B requests several anonymous temporary subscriber identities.

Preferably, in the method according to present invention, the terminating party B announces the received anonymous temporary subscriber identity in Television. Alternatively, the terminating party B announces the received anonymous temporary subscriber identity in a restricted open forum. More preferably, the restricted open forum is related to the service providing the anonymous temporary subscriber identity.

Preferably, in the method according to present invention, the originating party A initiating a communication path towards the terminating party B suppresses the subscriber identity in the communication path set up. Alternatively, the originating party A initiating a call to the terminating party B also uses an anonymous temporary subscriber identity provided by the communications network.
Preferably, in the method according to present invention, the terminating party B may terminate the use of the anonymous temporary subscriber identity. Preferably, the use of an anonymous temporary subscriber identity is disabled for a certain time period. Preferably, the anonymous temporary subscriber identity is anonymous temporary SIP address (SIP, Session Initiation Protocol). More preferably, the providing of the anonymous temporary SIP address is realized in an application server in an IP based network (IP, Internet Protocol). Alternatively, the providing of the anonymous temporary subscriber identity is realized in an IN platform (IN, Intelligent Network).

According to a second aspect of the present invention there is presented an arrangement for providing an arrangement for providing a communications network subscriber with an anonymous temporary subscriber identity realized in a communications network having an originating party A and a terminating party B connected to the network, the arrangement being characterized in that - the terminating party B having means for requesting an anonymous temporary subscriber identity, - the communications network having means for reserving an anonymous temporary subscriber identity to which the regular subscriber identity of the terminating party B in the communications network is associated, - the communications network having means for providing the anonymous temporary subscriber identity to the terminating party B, - the terminating party B having means for associating his regular subscriber identity with the anonymous temporary subscriber identity, - the terminating party B having means for announcing the received anonymous temporary subscriber identity in an open forum,
- a originating party A having means for initiating a communication path towards the anonymous temporary subscriber identity of the terminating party B in the communications network,
- the communications network having means for establishing a communication path between the originating party A and the terminating party B using the regular subscriber identity of the terminating party B associated with the anonymous temporary subscriber identity.

Preferably, in the arrangement according to present invention, the terminating party B requests the anonymous temporary subscriber identity via Internet. Alternatively, the terminating party B requests the anonymous temporary subscriber identity via an SMS-interface (SMS, Short Message Service). Alternatively, the terminating party B requests the anonymous temporary subscriber identity via a WAP-interface (WAP, Wireless Application Protocol). Alternatively, the terminating party B requests the anonymous temporary subscriber identity by dialing a number in the communications network. Alternatively, the terminating party B requests the anonymous temporary subscriber identity via an email-interface. Preferably, the terminating party B requests several anonymous temporary subscriber identities.

Preferably, in the arrangement according to present invention, the terminating party B announces the received anonymous temporary subscriber identity in Television. Alternatively, the terminating party B announces the received anonymous temporary subscriber identity in a restricted open forum. More preferably, the restricted open forum is related to the service providing the anonymous temporary subscriber identity.
Preferably, in the arrangement according to present invention, the originating party A initiating a communication path towards the terminating party B suppresses the subscriber identity in the communication path set up. Alternatively, the originating party A initiating a call to the terminating party B also uses an anonymous temporary subscriber identity provided by the communications network.

Preferably, in the arrangement according to present invention, the terminating party B has means to terminate the use of the anonymous temporary subscriber identity. Preferably, the use of an anonymous temporary subscriber identity may be disabled for a certain time period. Preferably, the anonymous temporary subscriber identity is anonymous temporary SIP address (SIP, Session Initiation Protocol). More preferably, the providing of the anonymous temporary SIP address is realized in an application server in an IP based network (IP, Internet Protocol). Alternatively, the providing of the anonymous temporary subscriber identity is realized in an IN platform (IN, Intelligent Network).

**Brief description of the drawings**

For a better understanding of the present invention and in order to show how the same may be carried into effect reference will now be made to the accompanying drawings, in which:

Figure 1 illustrates a dual anonymous communication system according to the present invention implemented in an IP based network.

Figure 2 illustrates a method for providing a communications network subscriber with an anonymous temporary subscriber identity according to the present invention.
Detailed description of certain embodiments

The present invention describes a generic solution for all types of dual anonymous communication in IP based networks (IP, Internet protocol) where communication paths are established with SIP signalling (SIP, Session Initiation Protocol). The present invention also describes how a dual anonymous communication service can be implemented in an IP based network by using anonymous temporary SIP addresses to provide anonymity for subscribers.

The solution according to the present invention presents a new communications network based method for providing a communications network subscriber with an anonymous temporary subscriber identity and a new dual anonymous communication system.

Figure 1 illustrates a dual anonymous communication system according to the present invention implemented in an IP based Network. Figure 1 shows how a Dual Anonymous Communication system is implemented as an IP network service using temporary subscriber identities allocated by subscribers. The dual anonymous communication system according to the present invention has a subscriber terminal A 1 and a subscriber B 2 connected to an IP based network 3. The dual anonymous communication system according to the present invention also has an application server named as DAC-server 5 (DAC, Dual Anonymous Communication) in the IP based network 3. Furthermore, the dual anonymous communication system according to the present invention has a PC 4 for a connection to the DAC-server 5 (PC, Personal Computer). A router in the IP network 3 is marked with a reference number 6.

Dual anonymous communication is enabled by reserving a pool of SIP-addresses (SIP, Session Initiation Protocol)
for the Dual Anonymous Communication service in the DAC-server 5. These addresses are used as temporary network identification for dual anonymous communication. A subscriber can reserve a anonymous temporary SIP address in a DAC server 5 with a PC 4 over e.g. an IP connection. When a subscriber with an anonymous temporary SIP address connects to the IP based network, he/she associates the real subscriber identity (e.g. a regular SIP address) with the anonymous temporary SIP address in the DAC server 5 using SIP message REGISTER.

A dual anonymous connection is set up in the following way using SIP signalling. The originating subscriber A 1 contacts the DAC server 5 with INVITE message using a anonymous temporary SIP address associated to the terminating subscriber B 2. The DAC server 5 replaces the anonymous temporary SIP address with subscriber B’s 2 original network identity and sends INVITE message towards the subscriber B 2.

As an alternative, the DAC server can suppress or remove the A-subscriber’s network identity in/from the INVITE message sent by DAC server. Likewise, the DAC server 5 can replace the A-subscriber’s original network identity with a generic DAC server identity or with a temporary network identity in case subscriber B 2 has subscribed to a anonymous temporary SIP address in the DAC server 5.

The solution according to the present invention is applicable to all types of bearers available for communication between two parties in an IP based network, for example e-mail, voice calls, chat and real time video.

The anonymous temporary SIP address can be used for communication path set up as long as the originating and terminating subscriber want to be anonymous to each other, ena-
bling the service provider to generate additional revenue. Usage of the service can be indicated using charging data collected for anonymous communication in the network.

Figure 2 illustrates a method for providing a communications network subscriber with an anonymous temporary subscriber identity according to the present invention. In the solution according to the present invention a subscriber requests a temporary subscriber identity using web access or SMS. The DAC system then reserves a temporary subscriber identity and replaces this with subscriber B’s regular subscriber identity. The DAC system then provides this temporary subscriber identity to the subscriber B. Subscriber B then announces the temporary subscriber identity to the subscriber A. The originating subscriber A initiates a call using the temporary number or sends an INVITE message to the IP network using the anonymous temporary SIP address. The DAC system replaces the temporary subscriber identity with subscriber B’s original network identity and routes the call to the called party.

Considering the popularity of anonymous chatting on the Internet, TV and over GSM, this invention has big several implementation applications. The service is easy to implement and can be deployed in existing GSM/UMTS network in a very short timeframe. Also implementation cost in IP networks is low. This type of service could be advertised for example in Internet chat rooms and TV chat.

In the solution according to the present invention a subscriber can reserve a temporary subscriber identity or even several temporary subscriber identities using web access or SMS. The temporary subscriber identity will be associated to the person’s regular subscriber identity in the SCP or in the IP Network.
B gives the temporary subscriber identity to A. Person A can then call the temporary subscriber identity reserved by B without actually knowing A's real subscriber identity. B on the other hand will not know A's identity if Calling Line Identity Restriction is applied for A. This is optional. If B doesn't want to have anything to do with A anymore, B can easily get rid of the temporary subscriber identity and possibly reserve a new temporary subscriber identity instead. This way, A has no way of calling B anymore. The pool of temporary subscriber identities has to be relatively big so that the time interval when the same temporary subscriber identity is reserved again is big enough.

Compared to using a calling card, the threshold to start using this kind of service is much lower. The service can be used with an ordinary subscription from anywhere. Chatting on TV and Internet is nowadays extremely popular. The service according to the present invention could be implemented on TV and Internet in chat forums.
Claims

1. A method for providing a communications network subscriber with an anonymous temporary subscriber identity realized in a communications network having an originating party A and a terminating party B connected to the network, characterized in that the method comprises the steps of
   - the terminating party B requesting an anonymous temporary subscriber identity (7),
   - the communications network reserving an anonymous temporary subscriber identity to which the regular subscriber identity of the terminating party B in the communications network is associated (8),
   - the communications network providing the anonymous temporary subscriber identity to the terminating party B (9),
   - the terminating party B announcing the received anonymous temporary subscriber identity in an open forum (10),
   - the originating party A initiating a communication path towards the anonymous temporary subscriber identity of the terminating party B in the communications network (11),
   - the communications network establishing a communication path between the originating party A and the terminating party B using the regular subscriber identity of the terminating party B associated with the anonymous temporary subscriber identity (12).

2. A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity via Internet.
3. A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity via an SMS-interface.

4. A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity via a WAP-interface.

5. A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity by dialing a number in the communications network.

6. A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity via an email-interface.

7. A method according to any of the claims 1-6, characterized in that the terminating party B requests several anonymous temporary subscriber identities.

8. A method according to any of the claims 1-7, characterized in that the terminating party B announces the received anonymous temporary subscriber identity in Television.

9. A method according to any of the claims 1-7, characterized in that the terminating party B announces the received anonymous temporary subscriber identity in a restricted open forum.

10. A method according to the claim 9, characterized in that the restricted open forum is related to the service providing the anonymous temporary subscriber identity.
11. A method according to any of the claims 1-10, characterized in that the originating party A initiating a communication path towards the terminating party B suppresses the subscriber identity in the communication path set up.

12. A method according to any of the claims 1-10, characterized in that the originating party A initiating a call to the terminating party B also uses an anonymous temporary subscriber identity provided by the communications network.

13. A method according to any of the claims 1-12, characterized in that the terminating party B may terminate the use of the anonymous temporary subscriber identity.

14. A method according to any of the claims 1-13, characterized in that the use of an anonymous temporary subscriber identity is disabled for a certain time period.

15. A method according to any of the claims 1-14, characterized in that the anonymous temporary subscriber identity is anonymous temporary SIP address.

16. A method according to claim 15, characterized in that the providing of the anonymous temporary SIP address is realized in an application server in an IP based network.

17. A method according to any of the claims 1-14, characterized in that the providing of the anonymous temporary subscriber identity is realized in an IN platform.

18. An arrangement for providing a communications network subscriber with an anonymous temporary subscriber identity realized in a communications network having an
originating party A and a terminating party B connected to the network, the arrangement being characterized in that:
- the terminating party B having means for requesting an anonymous temporary subscriber identity,
- the communications network having means for reserving an anonymous temporary subscriber identity to which the regular subscriber identity of the terminating party B in the communications network is associated,
- the communications network having means for providing the anonymous temporary subscriber identity to the terminating party B,
- the terminating party B having means for associating his regular subscriber identity with the anonymous temporary subscriber identity,
- the terminating party B having means for announcing the received anonymous temporary subscriber identity in an open forum,
- a originating party A having means for initiating a communication path towards the anonymous temporary subscriber identity of the terminating party B in the communications network,
- the communications network having means for establishing a communication path between the originating party A and the terminating party B using the regular subscriber identity of the terminating party B associated with the anonymous temporary subscriber identity.

19. An arrangement according to claim 18, characterized in that the terminating party B requests the anonymous temporary subscriber identity via Internet.

20. An arrangement according to claim 18, characterized in that the terminating party B requests the anonymous temporary subscriber identity via an SMS-interface.
21. An arrangement according to claim 18, characterized in that the terminating party B requests the anonymous temporary subscriber identity via a WAP-interface.

22. An arrangement according to claim 18, characterized in that the terminating party B requests the anonymous temporary subscriber identity by dialing a number in the communications network.

23. An arrangement according to claim 18, characterized in that the terminating party B requests the anonymous temporary subscriber identity via an email-interface.

24. An arrangement according to any of the claims 18-23, characterized in that the terminating party B requests several anonymous temporary subscriber identities.

25. An arrangement according to any of the claims 18-24, characterized in that the terminating party B announces the received anonymous temporary subscriber identity in Television.

26. An arrangement according to any of the claims 18-24, characterized in that the terminating party B announces the received anonymous temporary subscriber identity in a restricted open forum.

27. An arrangement according to the claim 26, characterized in that the restricted open forum is related to the service providing the anonymous temporary subscriber identity.

28. An arrangement according to any of the claims 18-27, characterized in that the originating party A initiating a communication path towards the terminating party B sup-
presses the subscriber identity in the communication path set up.

29. An arrangement according to any of the claims 18-27, characterized in that the originating party A initiating a call to the terminating party B also uses an anonymous temporary subscriber identity provided by the communications network.

30. An arrangement according to any of the claims 18-29, characterized in that the terminating party B has means to terminate the use of the anonymous temporary subscriber identity.

31. An arrangement according to any of the claims 18-30, characterized in that the use of an anonymous temporary subscriber identity may be disabled for a certain time period.

32. An arrangement according to any of the claims 18-31, characterized in that the anonymous temporary subscriber identity is anonymous temporary SIP address.

33. An arrangement according to claim 32, characterized in that the providing of the anonymous temporary SIP address is realized in an application server in an IP based network.

34. An arrangement according to any of the claims 18-31, characterized in that the providing of the anonymous temporary subscriber identity is realized in an IN platform.
TERMINATING PARTY REQUESTING ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY

NETWORK RESERVING ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY

PROVIDING ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY TO THE TERMINATING PARTY

TERMINATING PARTY ANNOUNCING ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY

ORIGINATING PARTY INITIATING A CALL TO THE ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY

NETWORK ESTABLISHING A COMMUNICATION PATH TO THE TERMINATING PARTY

FIG. 2
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

| IPC   | H04L29/06 | H04L9/00 | H04L12/16 |

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

| IPC   | G06F | H04L | H04M | H04Q |

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>X</td>
<td>WO 01 31903 A (GENUITY INC ; GTE SERVICE CORP (US)) 3 May 2001 (2001-05-03) page 1, line 20 - line 27 page 6, line 19 - page 8, line 9 abstract</td>
<td>1-14, 16-31, 33, 34</td>
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

** Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "S" document member of the same patent family

Date of the actual completion of the international search

15 May 2003

Date of mailing of the international search report

11.06.2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-3040, Tx. 31 651 epi nl, Fax: (+31-70) 340-3016

Authorized officer

RALF BOSTRÖM / JA A
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page 2, line 42 -page 3, line 20  
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abstract       | 15, 32 |
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