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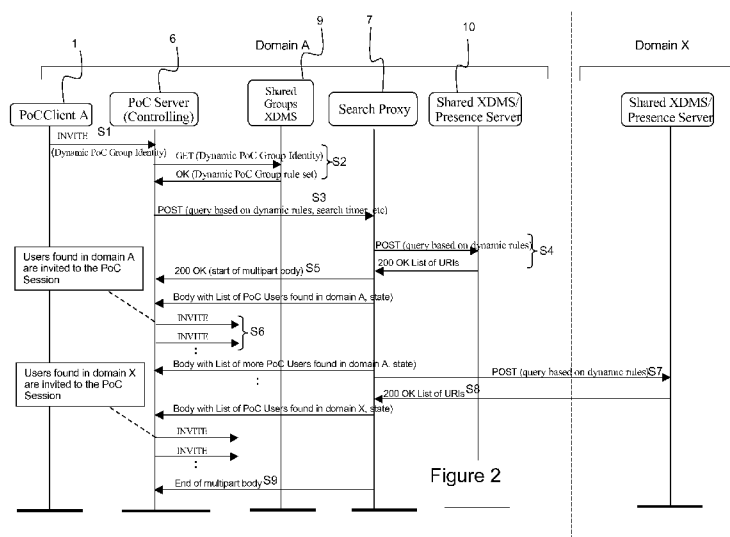


Figure 2

(57) Abstract: A method and apparatus for determining a list of members for a Group Push to Talk Session in a communications network. A Search Proxy function receives, from a requesting network node, a search request message. The search request message comprises at least one of an instruction to limit the maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern. The Search Proxy function then performs a search for members with which to populate the list and sends the search results to a receiving node. In most cases, the receiving node is the requesting node.

METHOD AND APPARATUS FOR DETERMINING A LIST OF MEMBERS FOR A PUSH TO TALK COMMUNICATIONS SERVICE

TECHNICAL FIELD

- 5 The present invention relates to Push-to-Talk communications services.

BACKGROUND

- 10 Walkie-talkie type services are popular amongst users who wish to communicate brief messages quickly between one another. Walkie-talkie type services are sometimes known as Push-to-talk (PTT) services. Conventionally, such PTT services have been provided by two-way portable radios which utilise a dedicated part of the radio spectrum, but which only allow users to communicate with a small group of pre-selected users who utilise similar terminals and who are within range of the relatively
- 15 short operating range of the radios. More recently, services have been introduced into the United States which piggy-back on the existing cellular telephone infrastructure. However, these services have been proprietary in nature and have not allowed users to communicate between different operator networks.
- 20 In an attempt to broaden the use of PTT services, an industry grouping known as the Open Mobile Alliance (www.openmobilealliance.org) has been established with the aim of standardising suitable protocols which will allow inter-network operability for walkie-talkie services offered over cellular networks. The service established by the various standards is known as Push-to-talk Over cellular (PoC). PoC makes use of the IP
- 25 Multimedia Subsystem (IMS) to handle the setting up and control of PoC sessions via PoC application servers (acting as SIP ASs). PoC proposes that associated speech data will be transported over a packet switched access technology. In the case of GSM and UMTS, this will be the General Packet Radio Service (GPRS) access technology. In other network architectures, analogous packet switched access
- 30 technologies will be utilised for transporting talk data. Push to Talk services may also be offered over circuit switched access networks, although this is not the preferred option. The current state of PoC is set out in Release 1.0. The requirements for PoC Release 2 are under discussion. PoC Release 2 will extend PoC to include multimedia and not just speech, and also include a feature that makes it possible to dynamically
- 35 establish PoC Sessions based on location, presence state and interest.

A Dynamic PoC Group Session can be populated with pre-defined Members, or populated by any user, equipped with a PoC capable device (referred to as a PoC Client) fulfilling the location, presence state and interest criteria. In some cases, a search operation is required in order to populate the PoC Group Session with members.

The Open Mobile Alliance has defined a Search Proxy to coordinate search operations (see OMA-AD-XDM-V2_0-20070724-C), since the search operation may require searches in several databases and in different domains.

In the event that a search operation is required, the PoC Server sends a search request to the Search Proxy. The search request includes required search criteria, and on receipt of the request, the Search Proxy coordinates searches in one or more databases (e.g. there may be more than one domain to search before a complete result can be returned). Once the search is complete, the Search Proxy sends the results of the search to the PoC Server. The results include URIs of PoC Users that meet the search criteria. The search results are then used by a function to evaluate and select PoC User(s) to invite to the Group Session.

If the search criteria are very broad, for example "look for everybody interested in football", the search may take very long time and/or return a lot of users fulfilling the search criteria, especially if the search is performed over several domains. This may create conflicts between limitations in the SIP protocol (e.g. running timers, etc) and the time it will take to perform the search.

The Search Proxy returns the search result in a single block once the search has been completed. The size of the block can be limited by specifying an optional "max-result" parameter. In this case, the Search Proxy searches until that amount is found or all databases have been searched without finding any users.

The existing technique for searching for members to invite to a Group Session is time-consuming, leading to conflicts with SIP requirements.

SUMMARY

The inventors have realised the problems associated with the prior art, and have devised a new search request for sending from a Push to Talk Server to a Search
5 Proxy that refines the searching process and reduces delays between requesting the search results and obtaining the search results.

According to a first aspect of the invention, there is provided a method of determining a list of members for a Group Push to Talk Session in a communications network. A
10 Search Proxy function receives from a requesting network node a search request message. The search request message comprises at least one of an instruction to limit a maximum time for the search operation to take, and an instruction to send the search results in segmented blocks. The Search Proxy function then performs a search for members with which to populate the list, and sends the search results to a receiving
15 node. The use of a maximum time limits the time a search operation can take, making the sending of the search results quicker and enhancing a user's experience. Similarly, by sending the results in segments, rather than waiting for the search to be completed, the receiving node starts to receive search results sooner, enhancing the user's experience.

20 Optionally, the receiving node is the requesting network node, although it is possible for one node to request the search and another node to receive the search results.

As an option, where the instruction comprises an instruction to send the search results
25 in segmented blocks, the instruction further comprises a maximum size of each segment to be sent.

Optionally, the requesting network node is a Push to Talk Over Cellular server. However, it is possible for other network nodes, such as Instant Messaging enablers, to
30 request a search.

The requesting network node and the Search Proxy function are optionally located in an IP Multimedia Subsystem network, although the invention is suitable for use in other types of network that accommodate Push top Talk services.

35

The search request message optionally comprises an instruction to return search results according to a predetermined format. This reduces the time it takes for the receiving node to interpret the search results, as they can be returned in a format suitable for the receiving node.

5

The search request message optionally comprises an instruction to perform the search according to a predetermined pattern. In this way, some control can be exercised over which domains etc are searched first.

10 According to a second aspect of the invention, there is provided a method of determining a list of members for a Group Push to Talk Session in a communications network. A Search Proxy function receives from a requesting network node a search request message. The search request message comprises an instruction to send search results according to a predetermined format. A search is performed for
15 members with which to populate the list, and the search results are sent to a receiving node in the instructed format. By sending the results in a format suitable for the receiving node, less processing power is required at the receiving node to interpret the results.

20 The method optionally comprises an instruction to send the search results in any one of a predetermined message protocol, and size. The instruction optionally comprises one of an instruction to include a random selection of found members in the search results and an instruction to include all found members in the search results. The instruction optionally further comprises an instruction to order found members in the search results
25 according to any one of an alphabetical order, predetermined prioritized users or groups of users first, or an exclusion predetermined users or groups of users.

As an option, the search request message further comprises an instruction to perform the search according to a predetermined pattern, in order to allow the requesting node
30 to exercise some control over which domains are searched first.

According to a third aspect of the invention, there is provided a method of determining a list of members for a Group Push to Talk Session in a communications network. A Search Proxy function receives from a requesting network node a search request
35 message, the search request message comprising an instruction to perform the search according to a predetermined pattern. The Search Proxy function performs a search

for members with which to populate the list according to the instruction, and sends the search results to a receiving network node. This is useful where, for example, the requesting node has some knowledge of which domains are likely to produce better search results. The instruction optionally comprises an order in which to search
5 predetermined information sources.

According to a fourth aspect of the invention, there is provided a method of determining a list of members for a Group Push to Talk Session in a communications network. A Search Proxy function receives from a requesting network node a search request
10 message. The search request message comprises at least one of an instruction to limit the maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern. The Search Proxy function then performs a search for members with which to populate the
15 list and sends the search results to a receiving node. These search parameters improve the efficiency of searching and handling the search results.

According to a fifth aspect of the invention, there is provided a Search Proxy for use in a communications network. The search proxy comprises a receiver for receiving from
20 a requesting network node a search request message. The search request message comprises any of an instruction to limit a maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern. The search proxy further comprises means for
25 searching at least one database to find potential members for a Group Push to Talk Session, and a transmitter for sending a search result to a receiving node.

According to a sixth aspect of the invention, there is provided a network node for use in a communications network. The node comprises a transmitter for sending, to a Search
30 Proxy function, a search request message. The search request message comprises any of an instruction to limit the maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern. The network node further comprises a receiver for receiving a
35 search response message from the Search Proxy function, the search results comprising a list of potential members for a Group Push to Talk Session. The network

node further comprises means for populating a list of members on the basis of information contained in the search response message. These search parameters improve the efficiency of searching and handling the search results.

- 5 Optionally, the network node is a Push to Talk over Cellular Server.

BRIEF DESCRIPTION OF THE DRAWINGS

- 10 Figure 1 illustrates schematically in a block diagram a system architecture according to an embodiment of the invention;

Figure 2 illustrates schematically in a block diagram a signalling sequence to find Users to invite to a Push to Talk Group Session according to an embodiment of the invention;

Figure 3 is a flow diagram illustrating the steps according to an embodiment of the invention;

- 15 Figure 4 illustrates schematically in a block diagram a Push to Talk Server according to an embodiment of the invention; and

Figure 5 illustrates schematically in a block diagram a Search Proxy according to an embodiment of the invention.

20 DETAILED DESCRIPTION

- The following description sets forth specific details, such as particular embodiments, procedures, techniques, etc. for purposes of explanation and not limitation. In some instances, detailed descriptions of well known methods, interfaces, circuits, and
25 devices are omitted so as not obscure the description with unnecessary detail. Moreover, individual blocks are shown in some of the drawings. It will be appreciated that the functions of those blocks may be implemented using individual hardware circuits, using software programs and data, in conjunction with a suitably programmed digital microprocessor or general purpose computer, using application specific
30 integrated circuitry, and/or using one or more digital signal processors.

- Figure 1 illustrates schematically an IMS network comprising various network nodes, including application servers and SIP proxies. This architecture will be well known to those of skill in the art. For the purpose of this discussion it is sufficient to note that an
35 IMS client 1, i.e. a user terminal, is attached to an access network 2 which is likely to be a cellular telephone network such as a GSM or 3G network. Via the access network

2, the IMS client 1 communicates with an IMS core network 3 and with a transport network 4. An IMS service session is established by the IMS client 1 exchanging SIP signalling with entities within the IMS core network 3 and with peer IMS clients. The IMS core network 3 is linked to the transport network 4, with the former making
5 available resources within the transport network 4 for use by the IMS client 1 as required.

Considering further the IMS core network 3, the IMS client is allocated a Serving Call Session Control Function (S-CSCF) 5. The S-CSCF 5 is located within the home IMS
10 domain of the subscriber using the IMS client 1, regardless of whether the client 1 accesses the IMS from within the home domain or via a "visited" domain. The CSCFs (including the S-CSCF 5) handle reachability, authentication and authorisation functions in respect of subscribers. Provision of services is handled by SIP Application Servers (ASs). Figure 1 illustrates a PoC AS 6 which provides the service logic for the
15 PoC service.

When a user wishes to establish a Group Session, and wishes to populate a list of members for the Group Session, the PoC AS 6 contacts a Search Proxy 7, which in turn contacts at least one database 8, and returns a list of potential group members to
20 the PoC AS 6. The PoC AS can then select which members of the list to invite to the group session.

When the PoC AS 6 sends a search request to the Search Proxy 7, the PoC AS 6 includes in the request one or more of the following parameters:

- 25
- A Search Timer indicating the maximum time the search operation is allowed to take before the Search Proxy must return a result;
 - A Max result value. The Max result value can be limited by setting a <max-participant-count> element in the Group document, making it possible to limit the number of returned URIs to a reasonable value;
 - 30 • One or more search patterns. Search patterns are used to target domains, the search order for searching different target domains, users, groups and other search sources;
 - A Search Response instruction that requests that the search results are returned having a certain size or structure; and

- A request for Segmented Results, making it possible for the PoC AS 6 to receive parts of the result before the search operation is completed. This may further include an instruction limiting the size of each segment.

5 Once the Search Proxy 6 has received the search results, it begins the search process taking the Search Timer, the existing Max-result, Search Pattern, Segmented Result and/or Search response into account.

Possible search results include:

- 10 1. Positive response: A list of URIs is returned and the search is completed (HTTP 200 OK response).
2. Positive response: A list of URIs is returned and the search operation continues as a result of a request for response segmentation (HTTP 200 OK response).
3. Negative response: No PoC User fulfilling the search criteria is found (HTTP
15 404 Not Found response).
4. Negative response: search timer expires (HTTP 404 Not Found response).
5. Negative response: search request is in conflict with the network e.g. when search tree or domain is not recognized, or search expression is not allowed (e.g. HTTP 409 Conflict response).

20

The Search Timer, Max-result, Search Pattern, Search response and/or Segmented Result can be either defined in a Group document for the Dynamic Group in a Shared Group XDMS or as system configuration parameter in the PoC Server, or a combination of both. A Shared Group XDMS is a database for storing Group
25 documents to provide multiple services access to Group documents, and Group documents include rules for a particular group. A Group document may contain Dynamic Group rules for more than one service. Dynamic PoC Groups documents include rules for Dynamic PoC Groups. Rules are syntactically organised according to XML schema(s). Each document has at least one schema. The word rules is used
30 herein to refer to parameters that apply to all members and for all services using the Group, and may consist of, for example, parameters valid only for a specific service, or a specific user.

The search timer may be derived from SIP protocol timers, the Group document or
35 configuration in the PoC Server, and provides a limit on the maximum time that the search can take.

It is possible to use parameter "max-participant-count", defined as an element in the Dynamic Group document, (as specified in OMA spec "Shared Group XDM Specification", Version 1.0, Open Mobile Alliance™) and/or as a system configuration
5 parameter, as an input for setting the value of existing parameter "max-result".

Search patterns can be defined by setting, for example, a Domain Search Order. Listing domains in a certain order can be used to specify search order. Furthermore, a search pattern can be defined by setting a search order between static data (stored in
10 XDMSs) and dynamic data (Service Enabler).

The Search response can be influenced by setting any of the following attributes:

Search Type: Values are selected from one of "Random" (the users are randomly
15 selected), "All" (all users are returned, max-result not used), and "Ordered". Where the results are Ordered, examples of values are:

1. A-first (default). A-first is according alphabetical order on for example first name, last name, interest profile data.
2. Not included users, groups, lists or profile data. For example user id (SIP URI),
20 first name, last name, interest profile data.
3. Prioritized users first. For example user id (SIP URI), first name, last name, interest profile data.

In order to reduce delays, the PoC Server may request the result to be segmented
25 rather than sent in a complete block. A segmented sequence of response requires either a session based search with session ID and repeated HTTP/POST requests with the unique session ID (ID is defined by the PoC Server), or can be done using a single HTTP/POST request requesting the Search Proxy to transfer the result in segments where the max number of Users transferred in each segment is according to a
30 parameter set by the PoC Server.

Note that most of the search parameters described above are not mutually exclusive, so, for example, a search request may instruct a maximum time in addition to a request for segmented results and a request to send the results in a particular format with
35 prioritized user first, arranged alphabetically.

An example of a signalling sequence for requesting a search by a Search Proxy is illustrated schematically in Figure 2. In this example, the pre-arranged PoC Group includes only dynamic criteria for PoC Users to be invited.

5 The steps of the flow are as follows:

S1. The PoC Client 1 initiates a Pre-arranged PoC Group Session by sending a SIP INVITE request to the PoC Server 6.

10 S2. The Pre-arranged PoC Group document is fetched by the PoC Server from the Shared Group XDMS 9.

S3. The PoC Server detects that there is a need to perform a search using the Search Proxy. The PoC Server 6 includes Search Timer, Max-results, Search Pattern,
15 Search Response and Segmented result and sends a HTTP POST request to the Search Proxy 7.

S4. The Search Proxy 7 starts the search in a Shared XDMS/Presence Server 10 of the Domain A. The Search proxy 7 supervises the time it takes to do the search, and
20 the number of results received, based on the Search Timer and Max-results received in the HTTP POST request from the PoC Server 6.

S5. When the search has resulted in Users found in the Domain A, and if there is still time to do more searches, and if Max-results is not yet exceeded, the Search Proxy
25 7 returns the results so far to the PoC Server 6 in a HTTP 200 OK response. The response includes the results and the state of the search operation e.g. elapsed time. If the search was requested with a segmented result, the response is followed by a list of Users in a sequence of messages.

30 S6. The PoC Server invites the PoC Users in the list received in the HTTP 200 OK response and its subsequent messages as they are received.

S7. The Search Proxy continues the search, now in domain X, based on the information received in the HTTP POST request.

S8. When the search is complete, the results are returned to the PoC Server 6 and PoC Users found in the Domain X are invited to the Group Session. If the search was requested with segmented results, bodies with a list of Users found in Domain X are returned in a sequence of messages, and the PoC Server 6 invites found PoC Users in the same way as described above.

S9. When there are no more results to return, the Search Proxy 7 sends a message with end indication to the PoC Server.

10 Note that the PoC Server 6 may need to perform the search several times during a PoC Session in order to re-evaluate the Dynamic rules.

Figure 3 herein is a flow diagram illustrating the steps according to an embodiment of the invention. The following numbering refers to the numbering of Figure 3:

15

S1. The requesting node generates a request for search. The search includes at least one additional instruction, selected from a maximum time for the search to take, and instruction to send the search results in segments, an instruction to send the search results in a particular format, and an instruction to search in a predetermined pattern, as described above;

20

S2. The requesting node sends the search request to the search proxy;

S3. On receiving the search request, the search proxy performs the search according to the additional instructions;

25

S4. Once the search is complete, the search proxy sends the search results to a receiving node (in most cases the receiving node is the requesting node) according to the instructions.

30

Referring to Figure 4 herein, there is illustrated a Push to Talk Server 11, such as a PoC Server. The Server comprises a transmitter 12 for sending the search request to the search Proxy, and a receiver 13 for receiving a search response message from the Search Proxy function. The Server also comprises a processor 14 for generating the search request message and for populating a list of members on the basis of

35

information contained in the search response message. The Server may comprise a memory 15 for storing the results contained in the search response message.

Referring to Figure 5 herein, there is illustrated a Search Proxy 16. The Search Proxy
5 comprises a receiver 17 for receiving a search request message from a Push to Talk Server. A processor 18 is provided for performing the search in the basis of instructions contained within the search request message. A memory 19 may be provided for storing or caching the results of searches, and a transmitter 20 is provided for returning a search response to the Push to Talk Server.

10 The invention as described above allows the PoC Server to control the search operation, keeping the search time below SIP protocol timers. Furthermore, it enables the Group document to control the search operation. The PoC User can control the results of a search operation by, for example, setting the search rules in the Group
15 document, if the user is authorized to do so. Currently, a user must be the owner of the document in order to set the search rules, although it is envisaged that there may be circumstances where it would be desirable for a non-owner of the document to be allowed to set the search rules. A search operation may be limited to predefined domains, and it is possible to initiate establishment of a PoC Session without waiting
20 for the search operation to be completed.

Although various embodiments have been shown and described in detail, the claims are not limited to any particular embodiment or example. None of the above description should be read as implying that any particular element, step, or function is
25 essential such that it must be included in the claims' scope. For example, the above description describes a scenario in which the originator of the search request is the PoC Server. However, other service specific servers may also use the search parameters according to the invention. For example, an Instant Messaging (IM) enabler server may make use of the invention to populate a group of members to
30 whom a message should be send. A converged IP Messaging enabler server may make a similar use of the invention.

The following acronyms are used in this specification:

35 AS Application Server
IMS IP Multimedia Subsystem

- OMA Open Mobile Alliance
- PoC Push To Talk Over Cellular
- PTT Push to Talk
- SIP Session Initiation Protocol
- 5 URI Uniform Resource Identifiers
- XDM XML Data Management

CLAIMS:

1. A method of determining a list of members for a Group Push to Talk Session in a communications network, the method comprising:
 - 5 at a Search Proxy function, receiving from a requesting network node a search request message, the search request message comprising at least one of an instruction to limit a maximum time for the search operation to take, and an instruction to send the search results in segmented blocks;
 - performing a search for members with which to populate the list; and
 - 10 sending the search results to a receiving node.
2. The method according to claim 1, wherein the receiving node is the requesting network node.
- 15 3. The method according to claim 1 or 2, wherein where the instruction comprises an instruction to send the search results in segmented blocks, the instruction further comprises a maximum size of each segment to be sent.
4. The method according to claim 1, 2 or 3, wherein the requesting network node
20 is a Push to Talk Over Cellular server.
5. The method according to any one of claims 1 to 4, wherein the requesting network node and the Search Proxy function are located in an IP Multimedia Subsystem network.
25
6. The method according to any one of claims 1 to 5, wherein the search request message further comprises an instruction to return search results according to a predetermined format.
- 30 7. The method according to any one of claims 1 to 6, wherein the search request message further comprises an instruction to perform the search according to a predetermined pattern.
8. A method of determining a list of members for a Group Push to Talk Session in
35 a communications network, the method comprising:

at a Search Proxy function, receiving from a requesting network node a search request message, the search request message comprising an instruction to send search results according to a predetermined format;

- 5 performing a search of members with which to populate the list; and
sending the search results to a receiving node in the instructed format.

9. The method according to claim 8, wherein the instruction further comprises an instruction to send the search results in any one of a predetermined message protocol, and size.

10

10. The method according to claim 8 or 9, wherein the instruction comprises one of an instruction to include a random selection of found members in the search results and an instruction to include all found members in the search results.

15 11. The method according to claim 8, 9 or 10, wherein the instruction further comprises an instruction to order found members in the search results according to any one of an alphabetical order, predetermined prioritized users or groups of users first, or an exclusion predetermined users or groups of users.

20 12. The method according to any of claims 8 to 11, wherein the search request message further comprises an instruction to perform the search according to a predetermined pattern.

25 13. A method of determining a list of members for a Group Push to Talk Session in a communications network, the method comprising:

- at a Search Proxy function, receiving from a requesting network node a search request message, the search request message comprising an instruction to perform the search according to a predetermined pattern;
performing a search of members with which to populate the list according to the
30 instruction; and
sending the search results to a receiving network node.

14. The method according to claim 13, wherein the instruction further comprises an order in which to search predetermined information sources.

35

15. A method of determining a list of members for a Group Push to Talk Session in a communications network, the method comprising:

at a Search Proxy function, receiving from a requesting network node a search request message, the search request message comprising at least one of an instruction to limit the maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern;

performing a search of members with which to populate the list; and
sending the search results to a receiving node.

16. A Search Proxy for use in a communications network, the search proxy comprising:

a receiver for receiving from a requesting network node a search request message, the search request message comprising any of an instruction to limit a maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern; and

means for searching at least one database to find potential members for a Group Push to Talk Session; and
a transmitter for sending a search result to a receiving node.

17. A network node for use in a communications network, the node comprising:

a transmitter for sending, to a Search Proxy function, a search request message, the search request message comprising any of an instruction to limit maximum time for a search operation to take, an instruction to send search results in segmented blocks, an instruction to send search results in a predetermined format; and an instruction to perform a search according to a predetermined pattern; and

a receiver for receiving a search response message from the Search Proxy function, the search results comprising a list of potential members for a Group Push to Talk Session; and

means for populating a list of members on the basis of information contained in the search response message.

18. The network node according to claim 17, wherein the network node is a Push to Talk over Cellular Server.

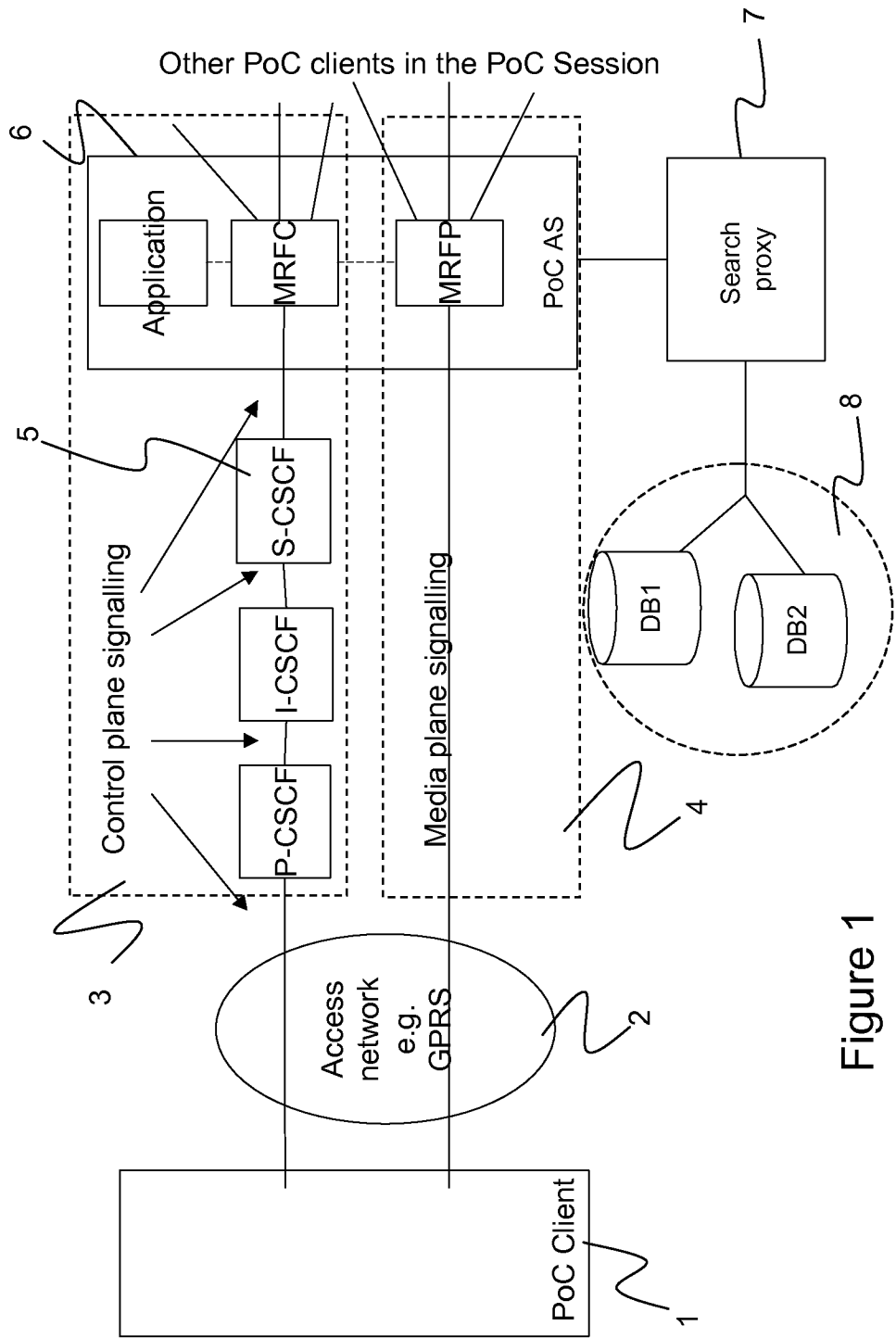


Figure 1

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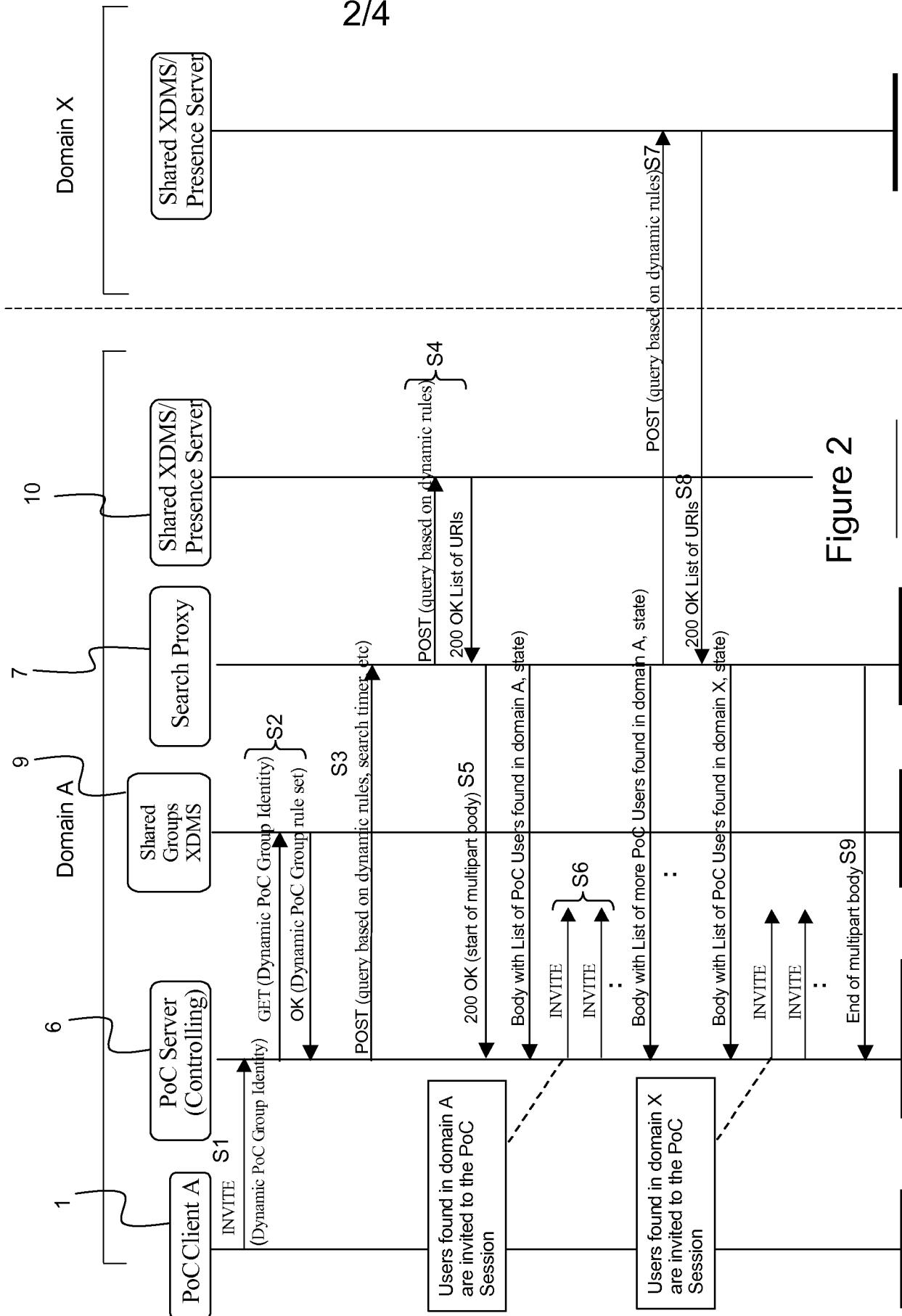


Figure 2

3/4

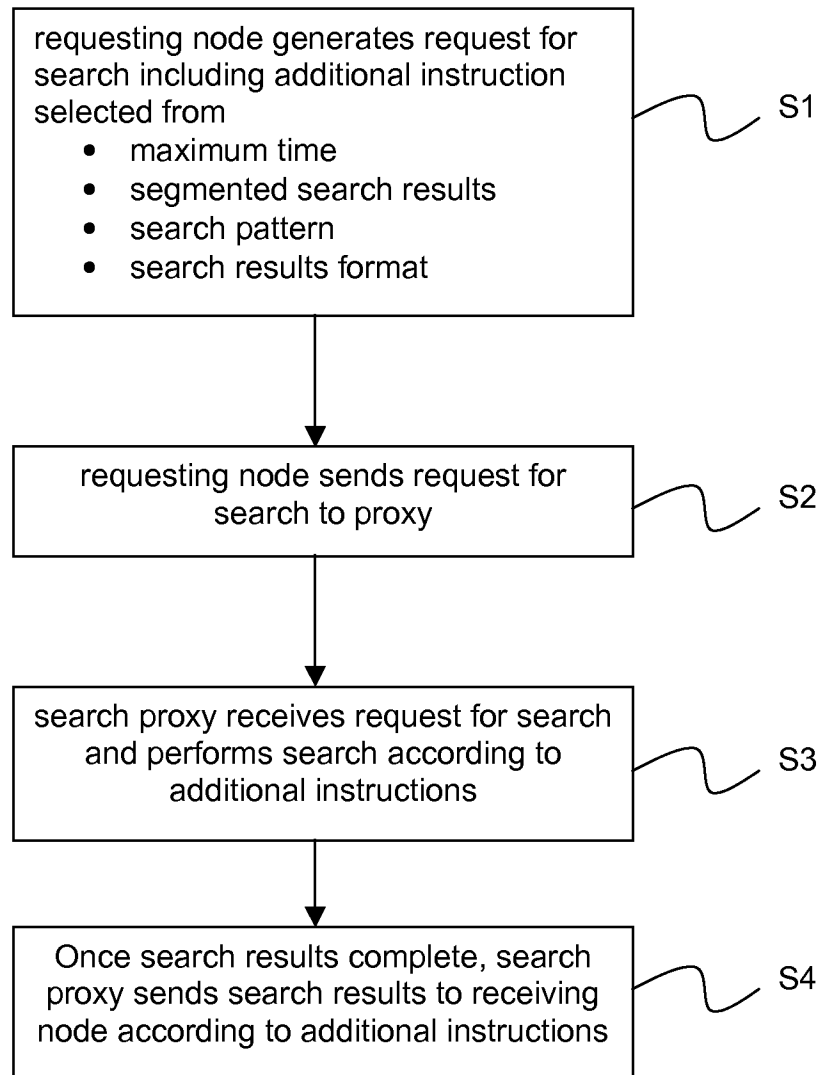


Figure 3

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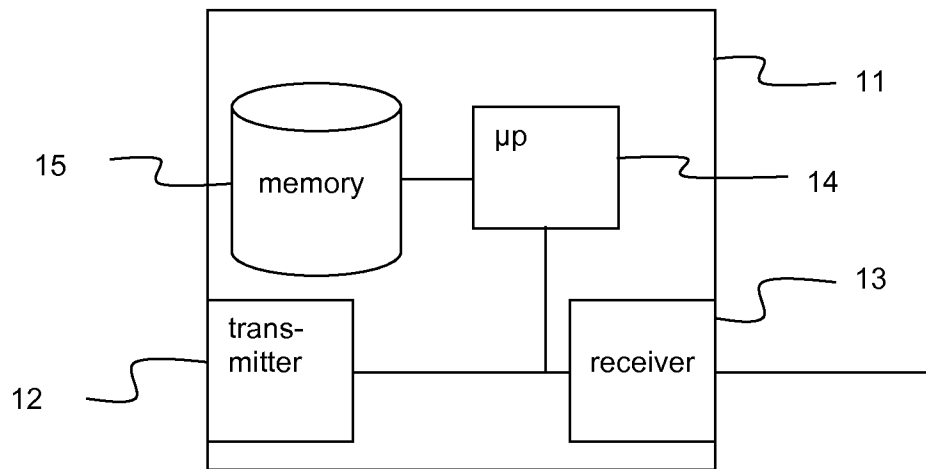


Figure 4

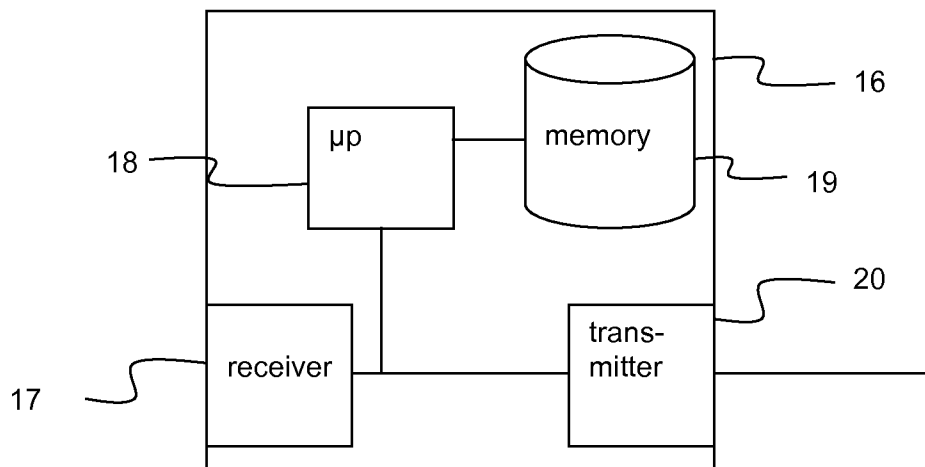


Figure 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2007/063505

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04W4/10

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)

H04W G06F

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SKEDINGER B: "Appendix to OMA-POC-POCV2.1-2007-0013R01-INP-Dynamic_PoC_Groups" OMA CONTRIBUTION, [Online] 30 November 2007 (2007-11-30), pages 1-12, XP002510539 Retrieved from the Internet: URL: http://member.openmobilealliance.org/ftp/Public_documents/POC/POCV2_1/2007/OMA-POC-POCV2_1-2007-0013R01-INP-Dynamic_PoC_Groups.zip [retrieved on 2009-01-14] figures 8,9,16,18,19 ----- -/--	1-18

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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- *&* document member of the same patent family

Date of the actual completion of the international search

15 January 2009

Date of mailing of the international search report

29/01/2009

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Günther, Steffen

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2007/063505

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ANONYMOUS: "Die MetaGer FAQ" INTERNET CITATION, [Online] 9 May 2006 (2006-05-09), pages 1-14, XP002510540 Retrieved from the Internet: URL: http://web.archive.org/web/20061023130253/meta.rrzn.uni-hannover.de/faq.html> [retrieved on 2009-01-15] page 8, line 34 - page 10, line 3	1-18
A	FIELDING UC IRVINE J GETTYS COMPAQ/W3C J MOGUL COMPAQ H FRYSTYK W3C/MIT L MASINTER XEROX P LEACH MICROSOFT T BERNERS-LEE W3C/MIT R: "Hypertext Transfer Protocol -- HTTP/1.1; rfc2616.txt" IETF STANDARD, INTERNET ENGINEERING TASK FORCE, IETF, CH, 1 June 1999 (1999-06-01), pages 1-176, XP015008399 ISSN: 0000-0003 paragraph [3.6.1.] paragraph [3.11.] paragraph [13.3.3.] paragraphs [14.1.] - [14.24]	1-18
A	US 2007/124294 A1 (SUN QIAN [CN] ET AL) 31 May 2007 (2007-05-31) paragraphs [0103] - [0144]	1-18
A	ANONYMOUS: "XML Document Management Architecture; Candidate Version 2.0" OMA STANDARD, [Online] 24 July 2007 (2007-07-24), pages 1-20, XP002510541 Retrieved from the Internet: URL: http://member.openmobilealliance.org/ftp/Public_documents/PAG/Permanent_documents/OMA-AD-XDM-V2_0-20070724-C.zip> [retrieved on 2009-01-14] cited in the application paragraph [5.2.1.3.]	1-18

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2007/063505

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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