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(54) Title: TARGETED ONLINE ADVERTISING

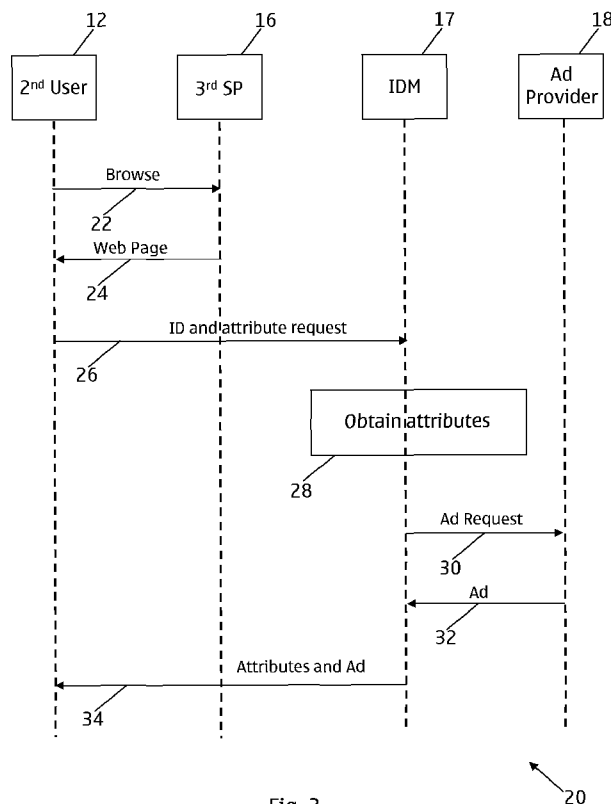


Fig. 3

(57) Abstract: The invention provides a second user with targeted advertising whenever that user requests the user attributes of a first user. The advertising is targeted based on the user attributes of the first user (not the second user) on the assumption that the second user shares at least some of the interests of the first user (therefore explaining the interest that the second user has in the first user).

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Description

Title

5 Targeted Online Advertising

The present invention is related to online advertising. In particular, the invention is related to targeted online advertising.

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Figure 1 shows a system, indicated generally by the reference numeral 1, comprising a user 2, a network 4 (such as the Internet), a service provider 6 and an advertisement provider 8. The user 2, the service provider 6 and the advertisement provider 8 are each in two-way communication with the network 4.

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The service provider 6 delivers content to the user 2 via the network 4. Similarly, the advertisement provider 8 can be used to provide advertising to the user 2, for example as part of the content provided by the service provider 6.

20

On-line advertising can be popular and contributes significant income for service providers. However, receiving untargeted advertising is often unpopular with users. Accordingly, it has long been recognised that it would be desirable to enable the advertisements provided by the advertisement provider 8 to be tailored to the interests of the user 2. Such an arrangement increases the likelihood of the user 2 responding to the advertisement (and therefore increases the value of the available advertising space), and reduces the likelihood of the user 2 becoming irritated by being presented with advertisements about which he has no interest.

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In order for the system 1 to be able to provide targeted advertising to the user 2, the service provider and/or the advertisement provider must be aware of at least some attributes of that user. This is not always possible. For example, in many circumstances, the user 2 is not identified. For example, when a user 2 accesses a web server via the Internet, the web server may have no information regarding the identity of the user 2 and therefore has no information available in order to obtain attributes for that user.

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Another problem with the system 2 is that the user 2 may be reluctant to share user attributes with the service provider 6 or the advertisement provider 8 in order to enable advertising targeted to the user 2 to be provided. Indeed, the user 2 may be unwilling to use a particular service provider unless the privacy of the user can be assured.

It is known in the art for Internet search engines to present advertisements to users, with those advertisements being selected on the basis of the search terms entered by the user. This provides a certain degree of selectivity, but it is extremely limited, since the selectivity is only based on the search terms entered at that particular time. Furthermore, the advertising is only selected and presented to the user when the user is using that particular search engine. Thus, the algorithm is not available for general use.

Furthermore, it is known for advertisements to be based on the content of the resource being used. For example, in the system 1 described above, the user 2 may be presented with advertisements relevant to the service provider 6. For example, if the service provider 6 provides sports news, advertisements relating to sports equipment may be presented to the user 2. However, such advertising is only presented when the user is using that service and the range of advertisements that are likely to be presented is small. The interest of advertisers of different product types in such advertising space is likely to be extremely limited.

The present invention seeks to address at least some of the problems outlined above.

In accordance with an aspect of the invention, there is provided a method (for example, a method for providing advertising) comprising: receiving (for example at an identity management system or an identity provider) a request for attribute data relating to a first entity, the request being received from a second entity (for example from a user or from a service provider); obtaining the attribute data for the first entity; and obtaining an advertisement, which advertisement is selected on the basis of said attribute data for the first entity. The first

entity may be a first user. The second entity is different to the first entity and may, for example, be a second user.

In accordance with an aspect of the invention, there is provided
5 an apparatus (such as an identity management system or an identity provider) comprising: a first input for receiving a request from a requesting party for attribute data relating to a first entity (the first entity being different to the requesting party); processing means adapted to obtain the attribute data for the
10 first entity; a first output for sending a request for an advertisement to an advertisement provider, the request including data derived from the attribute data; and a second input for receiving an advertisement from the advertisement provider.

15 Thus, the invention may provide a second user with targeted advertising whenever that user requests the user attributes of a first user. The advertising is targeted based on the user attributes of the first user (not the second user). This can be advantageous if the second user has similar interests to the first
20 user.

The present invention provides an extremely simple mechanism for attempting to provide targeted advertisements to a user, without requiring any information regarding that user. The mechanism will
25 not always provide advertisements of direct interest to that user, for example, the user may have different interests to the entity about which attributes are requested, but the mechanism will, in many circumstances, be significantly better than sending random advertisements, or advertisements selected based on existing
30 methods.

The invention may further comprise returning the attribute data and the obtained advertisement to the requesting party (e.g. the second user). In alternative forms of the invention, the
35 attribute data and the obtained advertisement may be returned elsewhere; for example, the request for data may be received from a service provider, with the data and the advertisement actually being returned to a user. Furthermore, the attribute data and the obtained advertisement might be returned to different locations;
40 for example, the request for data may be received from a service provider, with the data being returned to the service provider and the advertisement being returned to a user.

In some forms of the invention, obtaining the advertisement may comprise generating keywords (or retrieving previously generated keywords) based on the obtained attribute data, sending the
5 keywords to an advertisement provider, and receiving the advertisement from the advertisement provider.

In some forms of the invention, obtaining the advertisement may comprise sending at least some of said attribute data to an
10 advertisement provider and receiving the advertisement from the advertisement provider.

The attribute data may, for example, be stored at an identity management system or an identity provider. The attribute data may
15 be under the control of an internet attribute service.

The attribute data may be cross-site attribute data (such as cross-site internet attribute data). For example, a user can have many accounts at many different service providers. These accounts
20 may not even have the same user names (pseudonyms may be used, for example). An identity provider may be aware of these different accounts and may be enabled to provide attribute data for a single user across a range of different service providers.

In a particular use of the invention, the second user may request a subset of the stored user attributes regarding the first user. In such a scenario, the advertisement targeted on the basis of the first user's user attributes may be targeted solely on the basis of the user attributes requested by the second user.

Alternatively, the advertisement may be targeted on the basis of all of the stored user attributes stored for the first user. In a further alternative, the advertisement may be targeted on the basis of a different subset of the stored user attributes to the subset requested by the second user.

The apparatus of the invention may include a second output for providing the requested attribute data and/or the obtained advertisement to the requesting party.

The apparatus of the invention may include a keyword generator, wherein the data derived from the attribute data comprises one or more keywords generated by said keyword generator.

The apparatus of the invention may include a memory for storing said attribute data.

- 5 The apparatus of the invention may include the advertisement provider. Accordingly, the invention may provide an apparatus comprising: a first input for receiving a request from a requesting party for attribute data relating to a first entity; a processing means adapted to obtain the attribute data for the first entity; and an advertisement provider for providing an advertisement targeted on the basis of the attribute data. The apparatus may include a first output for providing the requested attribute data and the said advertisement.
- 10
- 15 In accordance with an aspect of the invention, there is provided a system comprising: a first input (for example at a service provider) for receiving a service request from a user; means for retrieving attribute data relating to a first entity (for example by sending a request to an identity provider) for populating the requested service with data relating to the first entity; a first output for sending a request for an advertisement to an advertisement provider, the request including data derived from the attribute data; a second input for receiving an advertisement from the advertisement provider; and a third output for providing the data relating to the first entity and the advertisement to the user. The third output may provide the requested service populated with the attribute data, or may send the requested service and the attribute data separately.
- 20
- 25
- 30 In accordance with another aspect of the invention, there is provided a method comprising: receiving (for example at a service provider) a service request from a user; retrieving attribute data (such as cross site internet attribute data) relating to a first entity (for example from an identity provider) for populating the requested service with data relating to the first entity; using said attribute data relating to the first entity to obtain an advertisement; and providing the data relating to the first entity and the advertisement to the user. The user and the first entity are not the same, accordingly, advertising is obtained that is targeted to the interests of the first entity and the advertising is provided to the user. The requested service may be populated with the said data before sending the requested service to the
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user. Alternatively, the requested service and the attribute data may be provided separately.

In accordance with a further aspect of the invention, there is provided a system comprising: a first input for receiving a request from a second entity for attribute data relating to a first entity; means for retrieving said attribute data; a first output for sending a request for an advertisement to an advertisement provider, the request include data derived from the attribute data; a second input for receiving an advertisement from the advertisement provider; and a third output for providing the data relating to the first entity and the advertisement to the user.

According to an aspect of the invention, there is provided a computer program product comprising: means for receiving a request for attribute data relating to a first entity, the request being received from a second entity; means for obtaining the attribute data for the first entity; and means for obtaining an advertisement, which advertisement is selected on the basis of said attribute data for the first entity.

According to an aspect of the invention, there is provided a computer program product comprising: means for receiving a service request from a user; means for retrieving attribute data relating to a first entity for populating the requested service with data relating to the first entity; and means for using the attribute data relating to the first entity to obtain an advertisement.

According to an aspect of the invention, there is provided a computer program comprising: code for receiving a request for attribute data relating to a first entity, the request being received from a second entity; code for obtaining the attribute data for the first entity; and code for obtaining an advertisement, which advertisement is selected on the basis of said attribute data for the first entity. The computer program may be a computer program product comprising a computer-readable medium bearing computer program code embodied therein for use with a computer.

According to an aspect of the invention, there is provided a computer program comprising: code for receiving a service request

from a user; code for retrieving attribute data relating to a first entity for populating the requested service with data relating to the first entity; and code for using the attribute data relating to the first entity to obtain an advertisement. The
5 computer program may be a computer program product comprising a computer-readable medium bearing computer program code embodied therein for use with a computer.

Exemplary embodiments of the invention are described below, by way
10 of example only, with reference to the following numbered drawings.

Figure 1 shows an exemplary advertising delivery system;
Figure 2 shows an advertising delivery system in accordance
15 with an aspect of the present invention;

Figure 3 is a message sequence in accordance with an aspect of the present invention;

Figure 4 is a message sequence in accordance with an aspect of the present invention; and

20 Figure 5 is a message sequence in accordance with an aspect of the present invention.

The invention provides a second user with targeted advertising whenever that user requests the user attributes of a first user.
25 The advertising is targeted based on the user attributes of the first user (not the second user) on the assumption that the second user has similar interests to the first user (therefore explaining the interest that the second user has in the first user).

30 The invention works as follows. The second user requests user attributes for a first user that are stored at an identity management system (IDM). On receipt of the request, the IDM retrieves the first user's user attributes, generates keywords on the basis of those user attributes, uses the keywords to obtain a
35 targeted advertisement from an advertisement provider, and returns both the first user's user attributes and the advertisement to the second user.

For example, the first user may be a specialist in cars
40 manufactured by company A and may have the user attributes "CAR" and "COMPANY A" stored in the IDM. When the second user requests IDM for attributes of the first user, IDM looks for attributes of

the first user and "COMPANY A" or "CAR" can be used as keywords by the IDM to retrieve targeted advertisement like car sales, sales of cars manufactured by company A, servicing of cars manufactured by company A and so on. These advertisements can be returned back together with attributes of the first user, thus a targeted advertisement is provided to the second user.

Figure 2 shows a system, indicated generally by the reference numeral 10, in accordance with an aspect of the present invention. The system 10 comprises a first user 11, a second user 12, a network 13 (such as the Internet), a first service provider 14, a second service provider 15, a third service provider 16, an identity manager (IDM) 17 and an advertisement provider 18. The first 11 and second 12 users, the first 14, second 15 and third 16 service providers and the IDM 17 are each in two-way communication with the network 13. The IDM 17 is in two-way communication with the advertisement provider 18.

The IDM 17 collects cross-site user attributes (such as Internet attributes) for the first user 11. The first user 11 may have many identities or pseudonyms across many different web sites and services (such as services provided by the first 14, second 15 and/or third 16 service providers). The different user identities may have different interests and requirements associated with them. The user interests and requirements at the different services can be gathered by the IDM 17 and merged into cross site user attributes for the first user 11. The first user's cross site user attributes may be of interest to the second user 12 when the second user is interested in content provided by that user or mentioning that user and wants to know more about that user.

In a similar manner to the system 1 described above, the service provider 16 may deliver content to the second user 12 via the network 13. The advertisement provider 18 provides one or more advertisements for delivery to the second user 12, but, in contrast to the system 1, the advertisements are delivered by the advertisement provider 18 to the IDM 17 on request by the IDM.

The advertisements are selected on the basis of keywords. The keywords are generated on the basis of the cross-site user attributes of the user about which information is requested. These keywords may, for example, be generated by the IDM 17.

In this way, when a user is using the Internet and wants, for example, to know more about an author who has provided content to a particular website, that user can send a querying request to the relevant IDM 17. The IDM 17 provides the user with the requested information (provided that the author concerned has given consent for this information to be shared) and the user also receives an advertisement that is targeted on the basis of the interests of the author.

Consider the following example. The second user 12 is surfing the internet and wants to find out information regarding the first user 11, who is an author by the name of Mr Michael. Mr Michael is a well-known author of books about cars. The present invention enables the second user 12 to use internet attributes concerning the author that are known to the IDM 17 to find out information about the author and to be presented with an advertisement that is relevant to the author's interests (which may well be similar to the interests of the user). The approach of the present invention differs from simply entering the first user's name into a search engine (which search engine may also present a targeted advertisement to the user), since a search engine will typically try to match the keyword terms (which here might simply be the author's name) with suitable advertisements. The interests of the first user 11 (which are not apparent simply from the author's name) will not be used in selecting an appropriate advertisement.

Another exemplary usage of the present invention is the internet log (blog). A general blog site contains rich information and may be very popular among a group of people. The present invention can be used to show advertising on the writer or the blog owner's main page or articles, which means selected advertising can be based on the writer's interests. The assumption here (as in the previous example) is that the reader has similar interests to the writer. Furthermore, a reader of the blog may be interested in the author and may request information about the author, such as, for example, whether the author is currently online and may therefore be available to discuss issues raised in the blog. The present invention enables the relevant user attributes (in this case the online status of the author) to be obtained and an advertisement to be presented to the requesting party at the same time.

Consider the following further example. The first service provider 14 provides a directory service. The first service provider 14 enables the second user 12 to query information (such as telephone number, reputation etc.) of an entity (such as the first user 11) listed in the directory. The requested information is stored at the IDM 17 in the form of user attributes. The relevant user attributes are obtained by the first service provider 14 from the IDM 17. At the same time, the IDM 17 uses the user attributes it holds concerning the entity concerned to obtain an advertisement from the advertisement server 18. The advertisement is targeted based on the attributes of the entity about which information is being requested (and not the second user 12 who is requesting the information, which user may be anonymous). The requested information and the targeted advertisement are returned by the IDM 17 to the first service provider 14 and the service provider presents the requested information, together with the advertisement, to the user 12.

Figure 3 shows a message sequence, indicated generally by the reference numeral 20, showing an exemplary use of the system 10. The message sequence 20 shows the transfer of messages between the second user 12, the third service provider 16, IDM 17 and advertisement provider 18 in accordance with an exemplary use of the invention.

The message sequence 20 begins with the second user 12 sending a message 22 to the service provider 16. In one form of the invention, the service provider 16 is a website and the message 22 takes the form of the user browsing the website 16. In response to the message 22, the service provider 16 sends a message 24 (such as a web page) to the second user 12.

In one form of the invention, the web page 24 provides information to the user 12. The user 12 is interested in some of the information provided and seeks more information regarding the author of the information. The web page 24 may, for example, be an article written in a newspaper, and the user 12 may be interested in the background of the author of that article.

The message 24 may, for example, include one or more tags that direct the second user 12 to obtain the information from the IDM 17. For example, the name of the first user 11 may be wrapped in a

html hyperlink format first_user_name

In response to receiving the message 24, the second user 12

5 requests information from the IDM 17, by sending a message 26 to the IDM. In response to the message 26, the IDM obtains (at step 28) attributes for the identified entity, whose attributes are stored at the IDM. In addition, the IDM (also at step 28) generates keywords from the attributes. For example, the user
10 attributes can be a set of < used car dealer, member of a hiking club, frequent visitor of Chinese restaurants>, and then the generated keywords can be the set of <used cars, hiking, Chinese foods>.

15 The keywords generated by the IDM 17 at step 28 are sent to the advertisement provider 18 as message 30 and the advertisement provider responds by providing (as message 32) an advertisement that is deemed to be relevant on the basis of the received keywords. Suitable advertising providers will be known to the
20 skilled person. By way of example, Google® Adwords (see <https://adwords.google.com/>) provides such a function. The attributes obtained at step 28 and the advertisement received from the advertisement provider 18 are returned to the user 12 as message 34.

25 Thus, in this way, the second user 12 receives the requested attribute information and is also presented with an advertisement. For example, the advertisement may be targeted on the basis of the user attributes of an author of a newspaper article. If the user
30 share interests in common with that author, then the advertisement may well be of interest to the user.

The message sequence 20 described above assumes that the relevant user attributes are requested by the second user 12. This is not
35 essential. For example, the user attributes may be requested by the service provider 16. In such an arrangement, the user attributes and the targeted advertisement may be returned to the service provider 16. The targeted advertisement may then be included in the message sent from the service provider 16 to the
40 user 12.

Figure 4 shows a message sequence, indicated generally by the reference numeral 40, showing another exemplary use of the system 10. The message sequence 40 shows the transfer of messages between the second user 12, the third service provider 16, IDM 17 and advertisement provider 18 in accordance with an exemplary use of the invention.

The message sequence 40 begins with the second user 12 sending a message 42 to the service provider 16. In one form of the invention, the service provider 16 is a website and the message 42 takes the form of the user browsing the website 16.

The website 16 generates a web page for delivery to the user 12 in response to the request 42. The web page is intended to include information concerning one or more entities (such as the first user 11), the details of which are stored at the IDM 17. The service provider sends a message 44 requesting the attribute information for the first user 11 so that this data can be included in the web page for delivery to the second user 12. In response to the request 44, the IDM 17 obtains the requested user attributes in step 46.

Once the IDM 17 has obtained the requested user attributes, those attributes (or keywords based on those attributes) are used to send a request 48 for a targeted advertisement to the advertisement provider 18 (with the advertisement being targeted on the basis of the user attributes of the first user 11), as discussed above with reference to the message sequence 20. The advertisement provider 18 returns an advertisement to the IDM 17 as message 50. The user attributes retrieved by the IDM 17 at step 46 and the advertisement provided to the IDM in message 50 are returned to the service provider 16 in message 52. The service provider 16 adds content to the webpage requested in the message 42 and presents the webpage, together with the advertisement received from the advertisement provider 18, to the second user 12 in message 54.

Figure 5 shows a message sequence, indicated generally by the reference numeral 60, showing a further exemplary use of the system 10. The message sequence 60 shows the transfer of messages between the second user 12, the third service provider 16, IDM 17

and advertisement provider 18 in accordance with an exemplary use of the invention.

The message sequence 60 begins with the second user 12 sending a message 62 to the service provider 16. In one form of the invention, the service provider 16 is a website and the message 62 takes the form of the user browsing the website 16. In response to the message 62, the service provider 16 sends a message 64 (such as a website) to the second user 12.

In a similar manner to the web page 24 of the message sequence 20 described above, the web page 64 provides information to the user 12. The user 12 may be interested in some of the information provided in the web page and may seek further information regarding, for example, the author of the web page.

In response to the message 64, the second user 12 requests attribute information regarding some aspect of the message 64. The request, in the form of message 66, is sent to the service provider 16. The request 66 may be an explicit request made by the second user 12. Alternatively, the request 66 may be an implicit request made by the second user 12. Holding a cursor or some other pointing device over a first user's identity information on a display screen may be one example of an implicit request that could trigger the sending of the request 66 from the second user 12 to the service provider 16.

On receipt of the request 66, the service provider 16 sends a message 68 requesting the attribute information for the first user 11 so that this data can be included in the web page for delivery to the second user 12. In response to the request 68, the IDM 17 obtains the requested user attributes in step 70.

Once the IDM 17 has obtained the requested user attributes, those attributes (or keywords based on those attributes) are used to send a request 72 for a targeted advertisement to the advertisement provider 18 (with the advertisement being targeted on the basis of the user attributes of the first user 11), as discussed above with reference to the message sequences 20 and 40. The advertisement provider 18 returns an advertisement to the IDM 17 as message 74. The user attributes retrieved by the IDM 17 at step 70 and the advertisement provided to the IDM in message 74

are returned to the service provider 16 in message 76. The service provider 16 then forwards the user attributes and the advertisement to the second user in message 78.

5 In a further variant, the user attributes retrieved by the IDM 17 at step 70 and/or the advertisement provided to the IDM in message 74 are sent from the IDM 17 directly to the second user 12 (in addition to, or instead of, sending those data to the third service provider 16).

10 Figure 2 shows an arrangement in which the first 14, second 15 and third 16 service providers and the IDM 17 are connected to the network 13 and the advertisement provider 18 is directly connected to the IDM 17. The arrangement of the system could, of course,
15 take many different forms. By way of example, the advertisement provider 18 could be connected to the network 13 instead of (or in addition to) being connected to the IDM 17.

The embodiments of the invention described above make use of an
20 identity management system. This is not essential; for example, the IDM of the examples described above may be replaced with an internet attribute service. The internet attribute service is adapted to process a request for user attributes (with or without the assistance of an IDM) and to return both the requested
25 attributes and an advertisement that is targeted on the basis of the requested attributes.

The present invention offers a number of advantages, for example:

30 1. The privacy of the party receiving the advertising can be protected, since the system does not require any attributes concerning that user.

2. The invention is easy to implement. The invention does not require analysis of web pages, which may contain too many key words or no key words.

35 3. The invention has no regard to language. Attributes from websites and other service providers can be collected, regardless of the languages used at those sites.

4. Usually if a service provider belongs to a category, it is difficult for that service provider to attract advertising from
40 advertisers in different categories. For example, a website providing sports news may find it difficult to attract non-sports-related advertising. The present invention enables advertising to

be provided based on the interests of a particular user, and therefore is not restricted to the type of content provided by the service provider concerned. This means the income channel for the service provider can potentially be expanded.

5 5. The invention enables a number of innovative advertising opportunities. For example, if a user B is famous and user A is a fan of user B, user A may be interested in the products and services used by user B. In such a scenario, advertising may be provided to user A on the basis of the
10 interests of user B.

The embodiments of the invention described above are illustrative rather than restrictive. It will be apparent to those skilled in the art that the above devices and methods may incorporate a
15 number of modifications without departing from the general scope of the invention. It is intended to include all such modifications within the scope of the invention insofar as they fall within the scope of the appended claims.

CLAIMS:

1. A method comprising:
 - receiving a request for attribute data relating to a first
 - 5 entity, the request being received from a second entity;
 - obtaining the attribute data for the first entity; and
 - obtaining an advertisement, which advertisement is selected
 - on the basis of said attribute data for the first entity.
- 10 2. A method as claimed in claim 1, further comprising returning the attribute data and the obtained advertisement to the second entity.
3. A method as claimed in claim 1 or claim 2, wherein obtaining
- 15 the advertisement comprises:
 - generating keywords based on the obtained attribute data;
 - sending the keywords to an advertisement provider; and
 - receiving the advertisement from the advertisement provider.
- 20 4. A method as claimed in any preceding claim, wherein the attribute data are cross-site attribute data.
5. A method as claimed in any preceding claim, wherein the
- attribute data are stored at an identity management system.
- 25 6. A method comprising:
 - receiving a service request from a user;
 - retrieving attribute data relating to a first entity for
 - populating the requested service with data relating to the first
 - 30 entity; and
 - using the attribute data relating to the first entity to
 - obtain an advertisement.
7. A method as claimed in claim 6, further comprising providing
- 35 the advertisement to the user.
8. A method as claimed in claim 6 or claim 7, further comprising providing the attribute data to the user.
- 40 9. An apparatus comprising:
 - a first input for receiving a request from a second entity
 - for attribute data relating to a first entity;

processing means adapted to obtain the attribute data for the first entity;

a first output for sending a request for an advertisement to an advertisement provider, the request including data derived from the attribute data; and

a second input for receiving an advertisement from the advertisement provider.

10. An apparatus as claimed in claim 9, further comprising a second output for providing the requested attribute data and the obtained advertisement to the second entity.

11. An apparatus as claimed in claim 9 or claim 10, further comprising a keyword generator, wherein the data derived from the attribute data comprises one or more keywords generated by said keyword generator.

12. An apparatus as claimed in any one of claims 9 to 11, wherein said apparatus is an identity provider.

13. An apparatus as claimed in any one of claims 9 to 12, further comprising the said advertisement provider.

14. A computer program product comprising:

means for receiving a request for attribute data relating to a first entity, the request being received from a second entity;

means for obtaining the attribute data for the first entity; and

means for obtaining an advertisement, which advertisement is selected on the basis of said attribute data for the first entity.

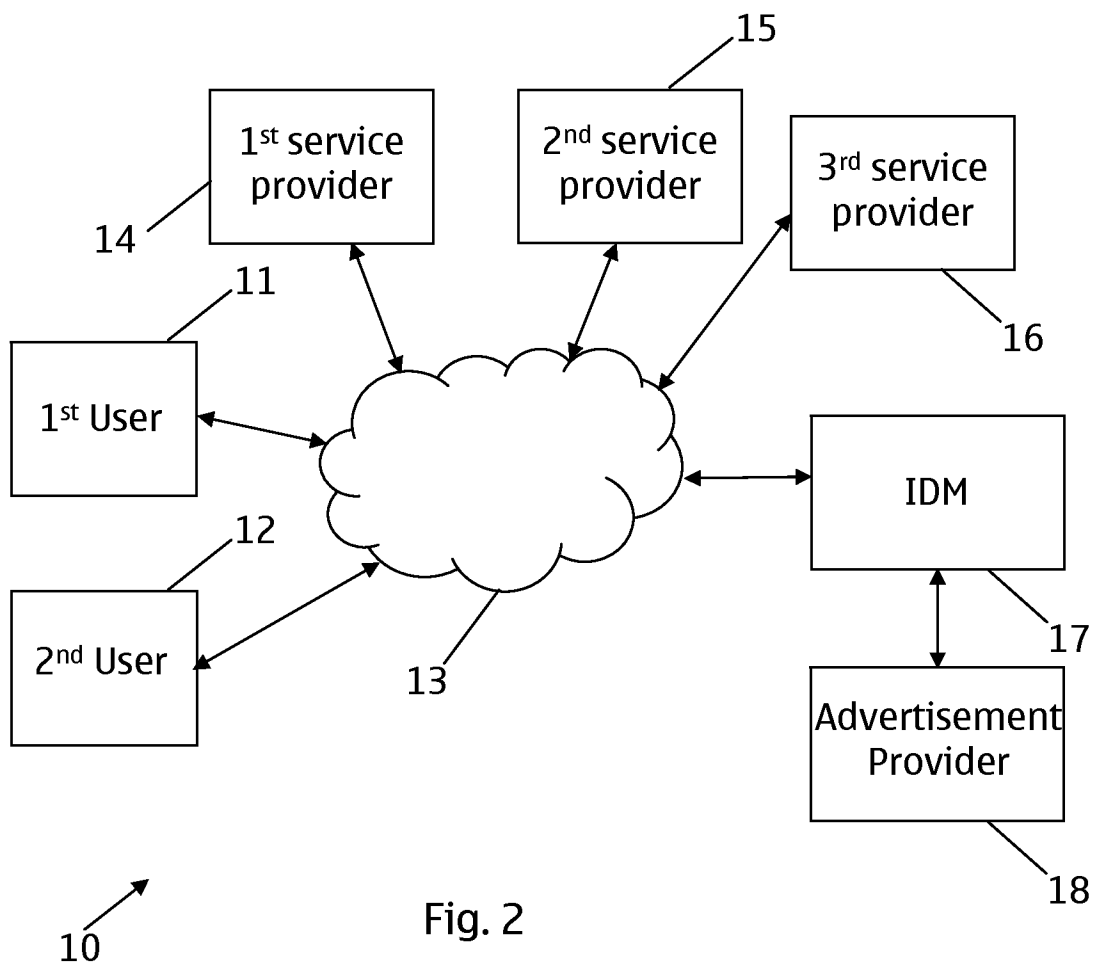
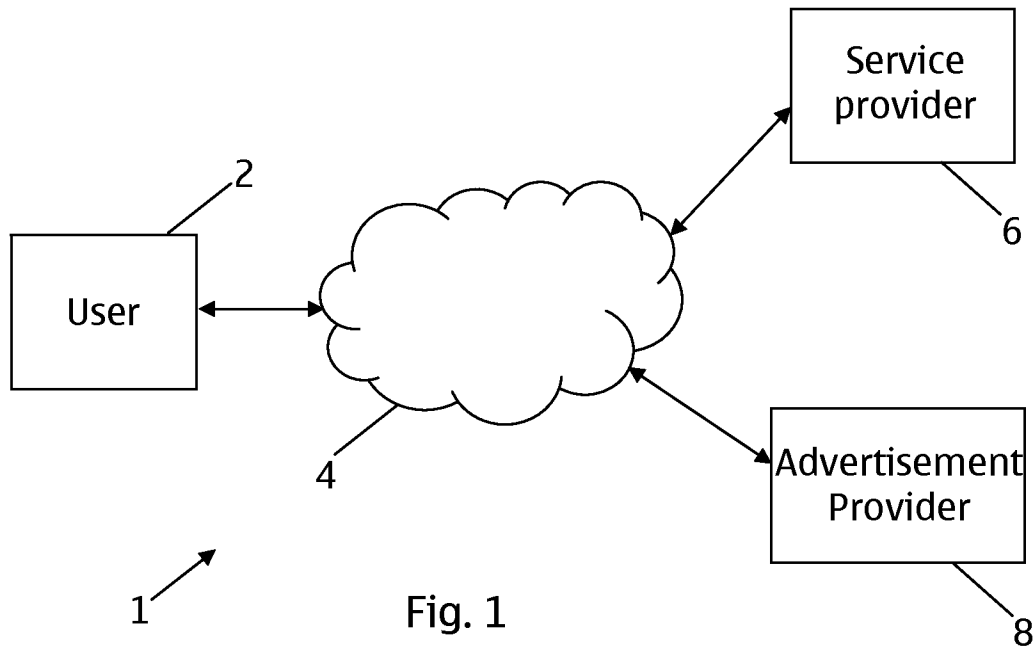
15. A computer program product comprising:

means for receiving a service request from a user;

means for retrieving attribute data relating to a first entity for populating the requested service with data relating to the first entity; and

means for using the attribute data relating to the first entity to obtain an advertisement.

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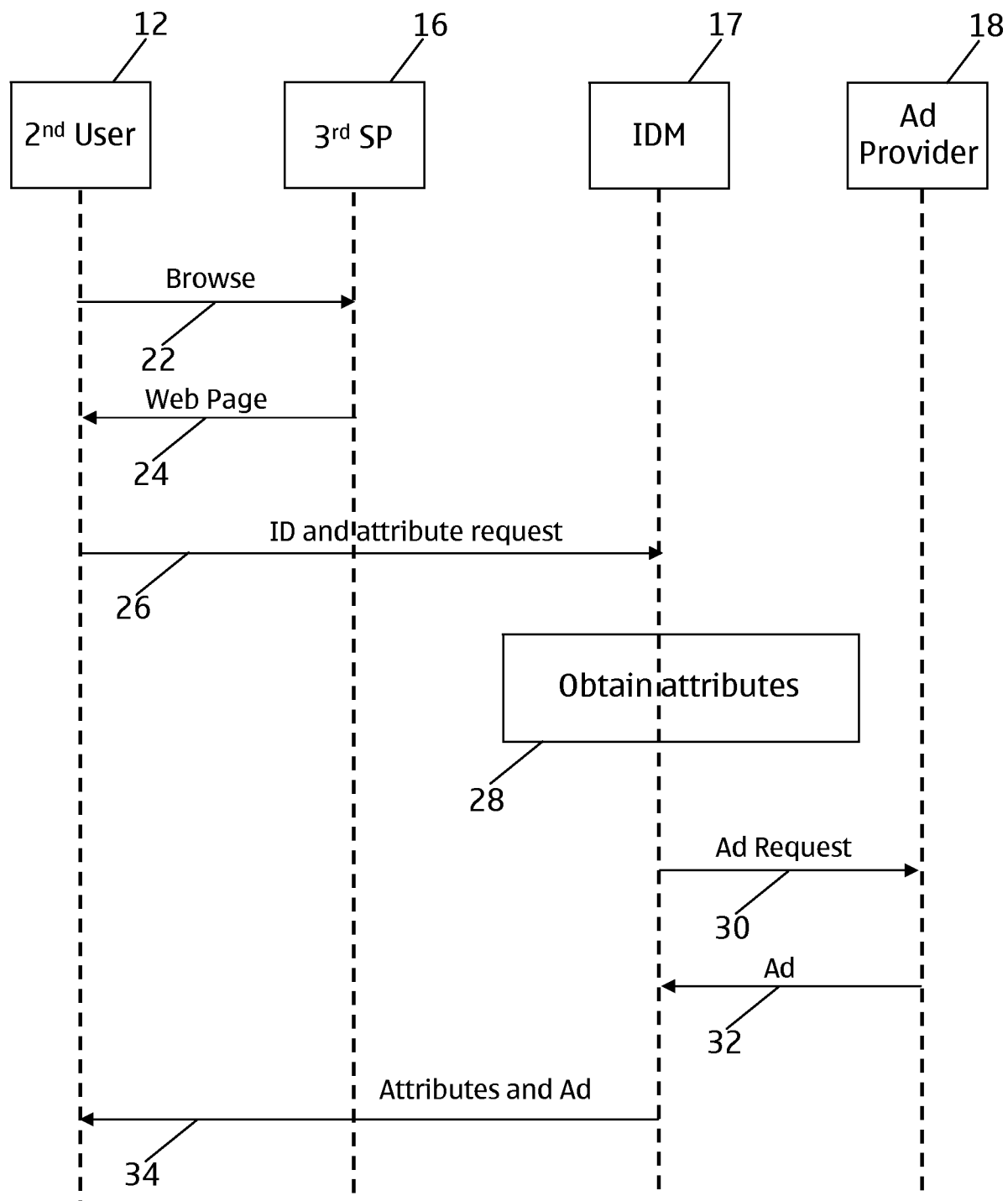


Fig. 3

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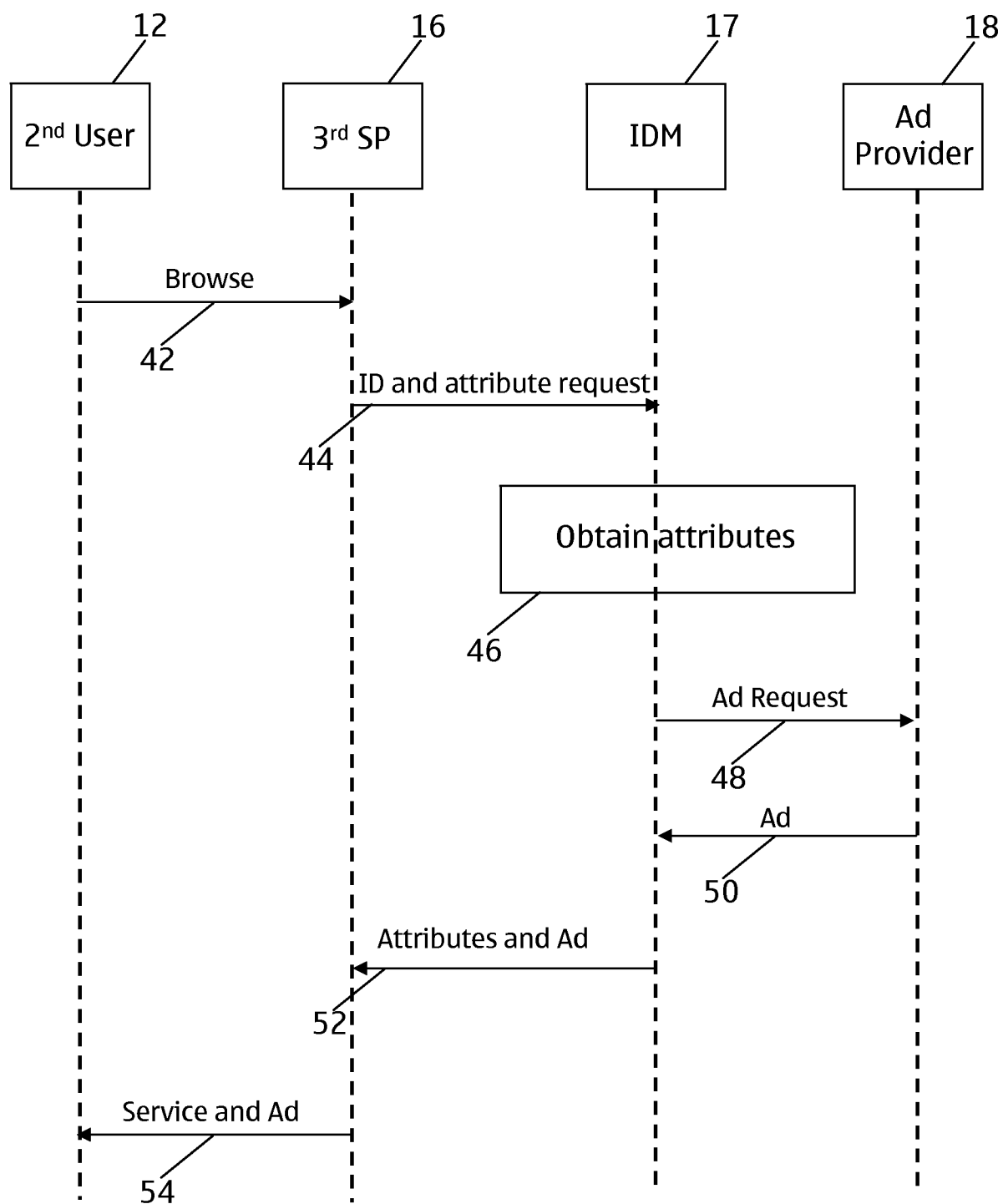


Fig. 4

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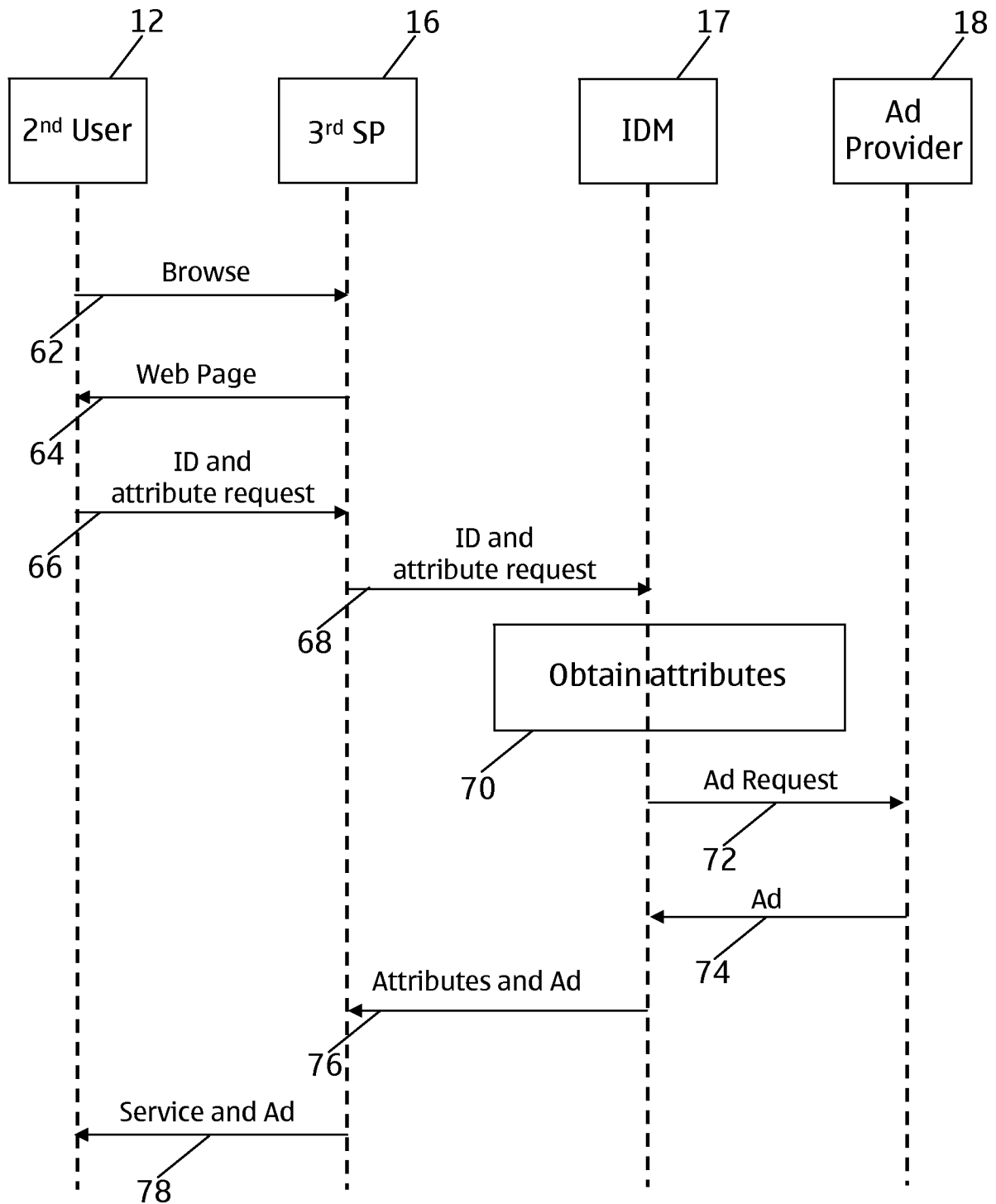


Fig. 5

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/054633

A. CLASSIFICATION OF SUBJECT MATTER

INV. G06Q30/00

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)

G06Q

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.
L	The technical aspects identified in the present application (Art. 15 PCT) are considered part of common general knowledge. Due to their notoriety no documentary evidence is found to be required. For further details see the accompanying Opinion and the reference below. XP002456414 -----	1-15

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

☐ See patent family annex.

* Special categories of cited documents :

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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.

* & * document member of the same patent family

Date of the actual completion of the international search

28 July 2009

Date of mailing of the international search report

04/08/2009

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