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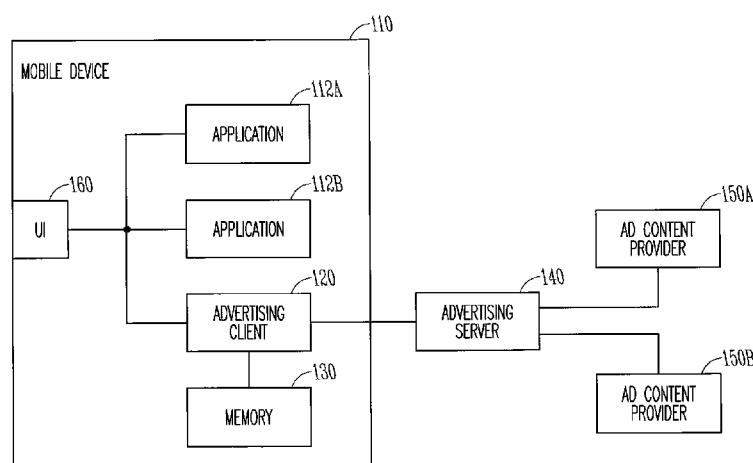


FIG. 1

(57) Abstract: Embodiments of a distributed ad-selection system and method for distributed ad selection are generally described herein.

METHOD AND SYSTEM TO IDENTIFY THE CONTEXTUAL DATA THAT WAS USED TO PERFORM AN ADVERTISEMENT SELECTION

CROSS-REFERENCE TO RELATED APPLICATION

5 This patent application claims priority benefit from U.S. Provisional Patent Application Serial No. 61/186,800, filed June 12, 2009, which is incorporated by reference herein its entirety.

TECHNICAL FIELD

10 Some embodiments pertain to the selection of advertisements (ads) for presentation to users of mobile devices. Some embodiments pertain to systems and devices that operate in accordance or compliance with one or more of the Open Mobile Alliance (OMA) standards or specifications. Some embodiments pertain to wireless networks and wireless communications.

15

BACKGROUND

 Advertisements may be delivered to users of computer systems and mobile wireless devices using mobile advertising systems. One example of a mobile advertising system is described in the Open Mobile Alliance (OMA)
20 Mobile Advertising (MobAd) Architecture Specification.

BRIEF DESCRIPTION OF THE DRAWINGS

 FIG. 1 is a block diagram of an advertising system according to some embodiments.

25 Fig. 2 is a data flow diagram illustrating the use of a Contextual Data Identifier (ID) within an Ad request and a response message according to some embodiments.

 Fig. 3 is an alternative data flow diagram illustrating the use of a Contextual Data Identifier (ID) within an Ad request according to some
30 embodiments.

Fig. 4 is a flow chart of a method of constructing an Ad request message according to some embodiments.

Fig. 5 is a flow chart of a method of selecting an Ad according to some embodiments.

5 Fig. 6 is a flow chart of how the Ad Response message is processed and consumed or used by the Application according to some embodiments.

Fig. 7, which comprises Figs. 7A, 7B, 7C and 7D, illustrates an AdContentData structure according to some embodiments.

10 Figs. 8, 9 and 10, illustrate example deployment models according to some embodiments.

Fig. 11 is a table showing parameters for a ContextualData structure according to some embodiments.

Fig. 12 is a table showing parameters for an AdContentReference structure according to some embodiments.

15 Fig. 13, which comprises Figs. 13A and 13B, shows parameters for an AdContentData structure according to some embodiments.

Fig. 14, which comprises Figs. 14A and 14B, shows parameters for an Ad Response message according to some embodiments.

20 Figs. 15, 16, 17, 18, and 19 illustrate examples of Ad placements according to some embodiments.

DETAILED DESCRIPTION

The following description and the drawings provide various embodiments. Other embodiments may incorporate structural, logical, electrical, 25 process, and other changes. Examples merely typify possible variations. Individual components and functions are optional unless explicitly required, and the sequence of operations may vary. Portions and features of some embodiments may be included in, or substituted for those of other embodiments.

Example Operating Environment. Figure 1 shows a block diagram 30 illustrating logical components within a system for facilitating mobile advertisement. A mobile device 110 is adapted to consume or create content through an application 112 and to perform other related functions. When used

herein, a mobile device is a general term that may include cellular telephones, mobile devices, pagers, laptop computers or other devices.

In the embodiment of Figure 1, a mobile device 110 comprises one or more applications 112A and 112B, and an advertising client 120 which may also
5 be referred to as an advertising “engine” or Ad Engine. The use of applications 112 are merely meant for simplification and in practice multiple applications may be installed on the mobile device 110.

Applications 112A and 112B (referred to throughout the document as 112 for either a single application or multiple applications) represent
10 applications that utilize advertisements. Examples may include an advertisement enabled email application in which advertisements are inserted into/above email messages, a web browser showing web pages into/above which advertisements can be inserted, instant messaging applications into/above which advertisements can be inserted, video or multimedia players which can have advertisements
15 therein, and so on.

In the embodiment of Figure 1, an advertising client 120 communicates with application 112 over an application program interface (API) and can further communicate with an advertising server 140 (also referred to as an Ad server) which is configured on a network device such as server hardware (e.g., a
20 computer with a processing unit, communication portion and storage/memory). Advertising client 120 may further communicate with memory on a mobile device 110. Such memory is shown as memory 130 in Figure 1. Such communication may for example proceed through a processor and a bus.

Advertising server 140 may be responsible for selecting and/or providing
25 advertisements from advertising content providers to appropriate devices. In one embodiment, the advertising server 140 may also be responsible for delivering advertisements to mobile device 110. As will be appreciated this may be done through a pull system in which an advertising client 120 requests ads from advertising server 140. Alternatively, this may be done on a push system in
30 which advertising server 140 decides that mobile device 110 should receive certain ads and pushes these ads to advertising client 120.

Furthermore, advertisements may be pushed on the fly. In other words, the advertisements may be obtained from advertising server 140 as they are

requested by application 112. In alternative configurations the advertising server 140 may provide ads to mobile device 110 which are stored within memory 130 of the mobile device. This may facilitate the transfer of ads when network conditions are suitable for data transfer. Such network conditions may include a low cost period such as in the middle of the night or when the mobile device 110 is connected to a network through means such as a USB connection through a computer or through a wireless local area network (WLAN) such as WiFi or WiMAX.

An ad content provider, as illustrated by ad content providers 150A, 150B in Figure 1, may be an ad content provider with an established business relationship with advertising server 140.

In one embodiment, an application 112 or an advertising client 120 sends a request for an advertisement (also referred to as an Ad request) to an Ad server 140. The Ad request may include parameters for contextual information relevant to the application 112 characteristics. In response to the Ad request, the Ad server 140 may provide an Ad with some metadata corresponding to the advertisement content/data. The structure of the response message (also referred to as an Ad response) maybe composed of the payload of the Ad with some metadata related to characteristics of the Ad.

In one embodiment, an application 112 sends an Ad request with contextual data or multiple contextual data sets and in return receives an Ad with an indication of the level of relevance of the Ad compare to the criteria that was passed in the request. However, in previous systems the application 112 receiving an Ad is not easily able to correlate the Ad response to the relevant contextual data that was sent in the Ad request.

For example, when an Ad request is sent for two advertisements to be displayed on a Web page containing ten news articles, the Ad request may also contain ten contextual data elements. Each one of the ten contextual data elements may be relevant to one of the articles. According to the present disclosure, when the Ad Server selects and returns the two ads, the Ad server may also indicate to which contextual data or contextual data set each of the two Ads corresponds. If this identification is not performed, the Application 112 receiving the two Ads with an indication that the two Ads are relevant may not

be able to determine which of the ten articles the two ads should be placed beside. This may result in a bad user experience if, for example, an Ad about a sporting event is placed near an article about music or vice versa.

In another embodiment, an application may request multiple Ads, all being related to a single context. For instance, three ads could be inserted in a content related to car racing. The response may contain three ads, two of the three being related to the context and one being a default advertisement. In this embodiment the two targeted ads should be used in the most visible places. To avoid having a bad user experience it would be useful to indicate that the default Ad does not relate to the context.

Under a traditional model of mobile advertising, mobile advertising server 140 may provide an ad to advertising client 120. However, Application 112 may not refine or discard the Ad selection performed by the Ad server 140 if the Ad is not appropriately targeted for the Application 112. In the OMA MobAd context, the current Ad message response provides very minimal details on the parameters associated with an Ad or an Ad Reference. An application receiving such Ad or Ad reference may have to perform extra processing in order to understand if the Ad can be used. To more effectively utilize the Ad (*e.g.*, select best position for the Ad within content page), the structure of the Ad response message which describes the Ad (*e.g.*, the type of media embedded and associated attributes such as display size, time, and validity, among others), needs improvement.

The present disclosure therefore provides for assigning a Contextual Data Identifier (ID) to contextual data parameters in an Ad request and an Ad response message. The present disclosure also provides for a standard data structure for an Ad response message in the form of an AdContentData or an AdContentReference. In some embodiments, advertising client 120 and/or advertising server 140 may operate with applications 112 in accordance or compliance with one or more of the standards or specifications of the Open Mobile Alliance (<http://www.openmobilealliance.org>).

Contextual Data Identifier. Fig. 2 is an example data flow diagram illustrating the use of a Contextual Data Identifier (ID) within an Ad request and a response message, and the use of the ID during Ad selection at the AdServer

and the Application. Contextual data are information related to a context.

Example of context can be the topic of a content (e.g. sport), the device capabilities, the user location, the type of application or other service characteristic. As shown in Fig. 2, the application 112 may be responsible for

5 determining or computing the contextual data that is relevant for the content/service/application or user and associates a unique identifier to the ContextualData set. The contextual data may be comprised of one or more (e.g., a plurality of) sets of contextual data where each set corresponds to a different context and includes an identifier such as the aforementioned Contextual Data
10 ID. The contextual data set may be constructed in XML and may be an element with multiple attributes corresponding to multiple contextual data information and there might be a series of contextual data element corresponding to multiple contexts.

For example, the contextual data may be structure in the following manner:

15 <User Profile> - indicating the user profile
<Age>..</Age> - the age of the user
<Interests>...</Interests> - interests or hobbies of the user
</UserProfile>
<Location>..</Location> - the current location of the user
20 <Theme>...</Theme> - the theme or category of the application

The attributes that are used in the above example are not meant to be limited but may contain other attributes as those skilled in art would understand.

25 In an alternate embodiment, the contextual data set can be structured in a format other than XML (e.g., in binary format). The Application 112 making the Ad Request may reside on a computer connected to a wireless network or may reside on a wireless device.

Upon receiving the Ad request from the Application 112, the Ad server
30 140 performs the Ad selection based on the Ad request. In one embodiment, when the Ad selection is performed by the Ad Server 140, an Ad is found that matches one or multiple contextual data sets provided within the request. The Ad Server provides as part of the response, the Ad or Ad reference, and the contextual data identifier(s) that is relevant to (and/or was used to select) that Ad
35 or Ad reference. Inclusion of the contextual data identifier(s) in the response enables the Application receiving the Ad and the contextual data identifier(s) to

make a correlation between the Ad provided in the response with the context provided in the request using the contextual data identifier(s). This way, the application can use the Ad within the appropriate context corresponding to the identifier(s) (e.g. the sport Ad near the sport article).

5 In another embodiment, the Ad selection is performed by the Ad server 140, but no Ad is found that matches the criteria established in the contextual data sets provided within the request. In this case the response may contain the Ad(s) or Ad reference(s) although the response omits the contextual data identifier(s). Alternatively, if a default Ad is return the response may contain an
10 indication (e.g., metadata such as keyword(s), etc. corresponding to the indicated context in the request) that this advertisement was not selected according to the contextual data. This enables the Application receiving the Ad (i.e. with no contextual data identifier) to determine that the Ad is not directly relevant to one of the provided context and will act accordingly (e.g. either place the ad if
15 desired, or discard it if it deems inappropriate). This embodiment is shown in Fig. 3. In the example embodiments shown in Fig. 3, the Application may be an application residing on a wireless network or the Application may reside on a mobile device. It should be noted that the response from the Ad Server could
20 contains multiple Ads or references to Ads, some with identifiers or some without identifiers.

Ad Response Data Structure. In addition, the present disclosure describes an enhancement to the current Ad message response structure by adding specific parameters to the AdContentData structure and introducing a new AdContentReference structure.

25 Fig. 4 is a flow chart of a method of constructing an Ad request message. The method comprises identifying parameters to be associated with an Ad request, associating a unique identifier with each set of contextual data, constructing an Ad Request message and sending the Ad request.

30 Fig. 5 is a flow chart of a method of selecting an Ad according to some embodiments. As shown in the Fig. 5, the Ad Server 140 performs the Ad selection based on one or more Ad request parameters (such as the contextual data) or other information the Ad server may know about the application. The

Ad Server then constructs and sends the Ad response message which may include one of the following:

- 1) An Ad Response containing the AdContentData (i.e. the actual content representing the Ad) and associated parameters
- 5 2) An Ad Response containing the AdContentReference (i.e. a reference or URI to the actual content representing the Ad) and associated parameters
- 3) An Ad Response with no Ad content (e.g. implies that no matching Ad(s) was found)

Fig. 6 is a flow chart of how the Ad Response message is processed and consumed or used (e.g. passing the Ad to another application in certain cases that may consume the Ad) by the Application. As shown in the Fig. 6, the Application retrieves reference to an Ad or the Ad Content itself and associated parameters from the Ad response message prior to consuming/using it. Based on the parameters associated with the Ad Reference or the Ad Content the application may decide to fetch or directly use the Ad embedded in the Ad response message. The reference to an Ad, and the Ad Content data may be organized in a structure. For instance in XML the AdContentData (shown in Fig. 13) and the AdContentReference (shown in Fig. 12) may be defined as two logical structures.

As further described in the next section of this detailed description, the structure for the AdContentData (shown in Fig. 13) provides a set of basic parameters that are generic in nature, i.e. ContentType and MimeType, AlternativeURI, AlternativeContentData and Version; followed by more detailed parameters (or attributes). As detailed in the next section, some of the detail parameters (e.g. language, encoding) are applicable only to a particular content type/MIMEtype (e.g. Text content). The ContentType parameters is used to describe the type of Ads such as image, video, text or the like. The MimeType parameters is used to refers to a particular codec associated with the content type. AlternativeURI and AlternativeContentData are parameters allowing to provide an alternative Ads; for instance in the case there was an error (e.g. the Ad is corrupted, or the device is unable to render for unknown reasons, among others) while retrieving the initial Ad.

In addition to the AdContentData structure, the next section also describes a structure for the AdContentReference (shown in Fig. 12) that contains an AdLocationURI which may be used to for retrieving the Ad. Note

that parameters such as MIMEType and Version are also present in the AdContentReference structure similar to the AdContentData structure. Further, the AdContentReference structure contains an AlternativeURI parameter which may be used to retrieve an alternate or fallback version of the same

- 5 Advertisement. This is typically used in the case wherein the original Ad cannot be rendered or supported by the device. For instance a text based version of the image Ad or Video Ad may be obtained by the AlternateURI.

Alternatively to a structure providing various parameters associated with a URI as in the case of AdContentReference, it may also be possible to
10 address all the parameters in the URI, by utilizing the addressing scheme provided by RESTful web services. For example, the AdLocationURI may be represented as follows:

http://adserver/example.com/video/h263/level1/AdVideo.swf wherein:

- /video is equivalent to the ContentType parameter
- 15 • /H263 is equivalent to the MimeType parameter
- /level1 is equivalent to the Version parameter
- /AdVideo.swf is equivalent to the Payload parameter

And similarly, the AlternativeURI may be represented as follows (which
20 corresponds to an alternate version of the same Ad):

http://adserver/example.com/image/jpeg/2/AdImage.jpeg wherein:

- /image is equivalent to the ContentType parameter
- /jpeg is equivalent to the MIMEType parameter
- /2 is equivalent to the Version parameter
- 25 • /AdImage.jpeg is equivalent to the Payload parameter

In an alternate embodiment, the notion of alternative version of Ads could be authored based on the user/device locales. For example,

- BlackBerry Ad in English for US locale
- 30 • BlackBerry Ad in Japanese for JP locale
- BlackBerry Ad in French for FR locale

In another embodiment, the structure for the AdContentData can be represented as described in the table shown in Figure 7, which is comprised of
FIGS. 7A-7D. This structure does not provide generic parameters but describes
35 all possible payload formats (e.g. PictureData, Text, RichText, VideoData, AudioData, OtherFormat) with their specific attributes. All of the payloads described are mutually exclusive. In the table shown in Figure 7, the Hierarchy

column shows an exemplary hierarchy of the element with their respective attributes (i.e. 'E' refers to element and 'A' refers to attribute).

Example Implementations. Figs. 8, 9 and 10, illustrate example deployment models for embodiments of the present disclosure. In the example shown in Figure 8, the Application preparing the Ad request resides in a network (such as an OMA MobAd SP App). In the examples shown in Figures 9 and 10, the Application preparing the Ad Request resides on the wireless device and may comprise an Application component (OMA MobAd Ad App) and an Ad Engine component (such as an OMA MobAd Ad Engine).

In one embodiment, a MobAd SP App is an Ad enabled network Application that is executing on a server device or hardware within the Service Provider environment (e.g.: MMSC or SP-portal) and interacts with the MobAd Enabler for providing Ads as part of its service (e.g. requesting Ads, providing metrics data).

In one embodiment, a MobAd Ad Engine is an application implementing MobAd Enabler functions and running on the Device. The Ad Engine interacts with Ad App and Ad Server. The Ad Engine may be a device-resident group of functionalities potentially organized in logical modules. The Ad Engine may interact with different Ad Apps and may perform functions such as: obtaining appropriate ads from MobAd Ad Server, selecting ads from a local storage, providing metrics related feedback to MobAd Ad Server, filtering and matching information as well as potentially scanning content.

In one embodiment, a MobAd Ad App may be an application running on the device which interacts with the Ad Engine in order to present Ads to the user.

SP App, Ad Engine, and Ad App are further described in the Open Mobile Alliance Mobile Advertising (MobAd) Architecture Specification and Core Technical Specification available at <http://www.openmobilealliance.org>.

The Figures 8, 9, and 10 illustrate how an application constructs and sends an Ad Request based on a given structure. The structure may include the associated contextual data (and identifier) to be used as the criteria for Ad selection.

As described and shown in Figure 8, the SP App resides on the network and serves Ad/content to mobile devices according to embodiments of the disclosure.

As described and shown in Figure 9, the Ad App and Ad Engine reside on a mobile device and the Ad App prepares an Ad Request according to
5 embodiments of the present disclosure.

As described and shown in Figure 10, the Ad App and Ad Engine reside on a mobile device and the Ad Engine prepares an Ad Request according to embodiments of the disclosure.

10 Figure 11 is a table showing parameters for a ContextualData structure according to some embodiments.

Figure 12 is a table showing parameters for an AdContentReference structure according to some embodiments.

Figure 13, which comprises FIGS. 13A and 13B, is a table showing
15 parameters for an AdContentData structure according to some embodiments.

Figure 14, which comprises FIGS. 14A and 14B, is a table showing parameters for an Ad Response message according to some embodiments. The example message shown in Figure 14 includes parameters identifying the AdContentReference structure of Figure 12, the AdContentData structure of
20 Figure 13, and the ContextualDataID parameter corresponding to the ContextualDataID of the ContextualData Structure (which is included in an ad request) of Figure 11.

Example Ad Placements. Figures 15, 16, 17, 18, and 19 illustrate examples of Ad placements according to some embodiments.

25 In the example shown in Figure 15, an Ad request may be made for three Ads to be placed in Ad Spot #1, Ad Spot #2 and Ad Spot #3. An example Ad request may contain the following parameters:

- Number of Ads = 3
- Context 1: airline, airfares, luxury travel
- 30 • Context 2: Sicily, cuisine, vacation hot spots
- Context 3: Canada, Muskoka, lake resort, Lake Rosseau

In this example, Ad Spot #1 can correspond to all Contexts. Ad Spot #2 can correspond to Context 1 and Context 2. Ad Spot #3 can correspond to Context 2 and Context 3.

5 In the example shown in Figure 16, a response is received for the Ad request described by reference to Figure 15. The response contains three Ads, but does not contain a reference to the context. As a result, the Ads placed in Ad Spot #2 and Ad Spot #3 are inserted in the wrong place.

10 In the example shown in Figure 17, a response is received for the Ad request described by reference to Figure 15. In this example, the response contains a reference to the context so that the Ads can be positioned in the relevant spots. An example response may contain the following three Ads:

- Ad 1 with reference to Context 2
- Ad 2 with reference to Context 1
- Ad 3 with reference to Context 3

15 In the example shown in Figure 18, an application may provide contextual data for nine RSS feed titles and display two Ads. In this example, the Ad placement may be dynamic (grid-based). As shown in Figure 18, Ad 1 is placed in the same row as a relevant RSS title for Context 1 and Ad 2 is placed in the same row as a relevant RSS title for Context 9.

20 In the example shown in Figure 19, an application may provide contextual data for the same nine RSS feed titles as in Figure 18 and display two Ads. As shown in Figure 19, Ad 1 now relates to Context 3 and is placed in the same row as the relevant RSS title for Context 3. Ad 2 again relates to Context 9 and is placed in the same row as the relevant RSS title for Context 9.

25 Unless specifically stated otherwise, terms such as processing, computing, calculating, determining, displaying, or the like, may refer to an action and/or process of one or more processing or computing systems or similar devices that may manipulate and transform data represented as physical (e.g., electronic) quantities within a processing system's registers and memory into
30 other data similarly represented as physical quantities within the processing system's registers or memories, or other such information storage, transmission or display devices. Furthermore, as used herein, a computing device includes one

or more processing elements coupled with computer-readable memory that may be volatile or non-volatile memory or a combination thereof.

Embodiments may be implemented in one or a combination of hardware, firmware and software. Embodiments may also be implemented as instructions
5 stored on a computer-readable medium, which may be read and executed by at least one processor to perform the operations described herein. A computer-readable medium may be tangible or otherwise non-transitory and may include any mechanism for storing or transmitting information in a form readable by a machine (e.g., a computer). For example, a computer-readable medium may
10 include read-only memory (ROM), random-access memory (RAM), magnetic disk storage media, optical storage media, flash-memory devices, and others.

What is claimed is:

1. A method comprising:
 - 5 receiving, at an advertising server, an ad request including contextual data for at least one context;
selecting an ad by using the contextual data in the ad request; and
providing a response to the ad request, the response including the ad and a parameter identifying contextual data which was used to select the ad.
- 10 2. The method of claim 1 wherein the ad is specified by a payload of the response, or a reference in the response, or a combination of the payload and the reference.
- 15 3. The method of claim 1 wherein the contextual data corresponds to a plurality of contexts.
4. The method of claim 3 wherein contexts of the plurality are associated with identifiers.
- 20 5. The method of claim 4 wherein the parameter in the response is one or more of the identifiers.
6. The method of claim 5 wherein providing comprises:
 - 25 omitting one identifier for one ad in the response when the one ad in the response was not selected relative to a context of the contextual data.
7. The method of claim 6 wherein providing further comprises:
 - 30 including, in place of the one omitted identifier, metadata relevant to the one ad.

8. A network device comprising:
an advertising server configured to perform the method of any one of claims 1-7,
the advertising server being an Ad Server that is compliant with the Open
Mobile Alliance (OMA) Mobile Advertising (MobAd) specification.
- 5
9. A method comprising:
providing an ad request to an advertising server, the ad request including
contextual data; and
receiving a response from the advertising server, the response including
10 an ad and a parameter identifying contextual data which was used to select the
ad.
10. The method of claim 9 wherein the ad is specified by a payload of the
response, or a reference in the response, or a combination of the payload and the
15 reference.
11. The method of claim 9 wherein the contextual data contains a plurality of
contexts.
- 20 12. The method of claim 11 wherein contexts of the plurality are associated with
identifiers.
13. The method of claim 12 wherein the parameter in the response is one or
more of the identifiers.
- 25
14. The method of claim 13 wherein one identifier for one ad in the response is
omitted when the one ad in the response was not selected relative to a context of
the contextual data.
- 30 15. The method of claim 14 wherein metadata relevant to the at least one ad is
included in the response in place of the omitted one identifier.

16. A mobile device comprising:
an advertising engine configured to perform the method of any one of
claims 9-15, the advertising engine being an Ad Engine that is compliant with
the Open Mobile Alliance (OMA) Mobile Advertising (MobAd) specification.
- 5
17. A network device comprising:
a service provider application configured to perform the method of any
one of claims 9-15, the service provider application being an SP App that is
compliant with the Open Mobile Alliance (OMA) Mobile Advertising (MobAd)
10 specification.
18. A method comprising:
providing an ad request to an advertising engine, the ad request including
contextual data for at least one context; and
15 receiving a response from the advertising engine, the response including
an ad and a parameter identifying contextual data which was used to select the
ad.
19. The method of claim 18 wherein the ad is specified by a payload of the
20 response, or a reference in the response, or a combination of the payload and the
reference.
20. The method of claim 18 wherein the contextual data contains a plurality of
contexts.
- 25
21. The method of claim 20 wherein contexts of the plurality are associated with
identifiers.
22. The method of claim 21 wherein the parameter in the response is one or
30 more of the identifiers.

23. The method of claim 22 wherein one identifier for one ad in the response is omitted when the one ad in the response was not selected relative to a context of the contextual data.

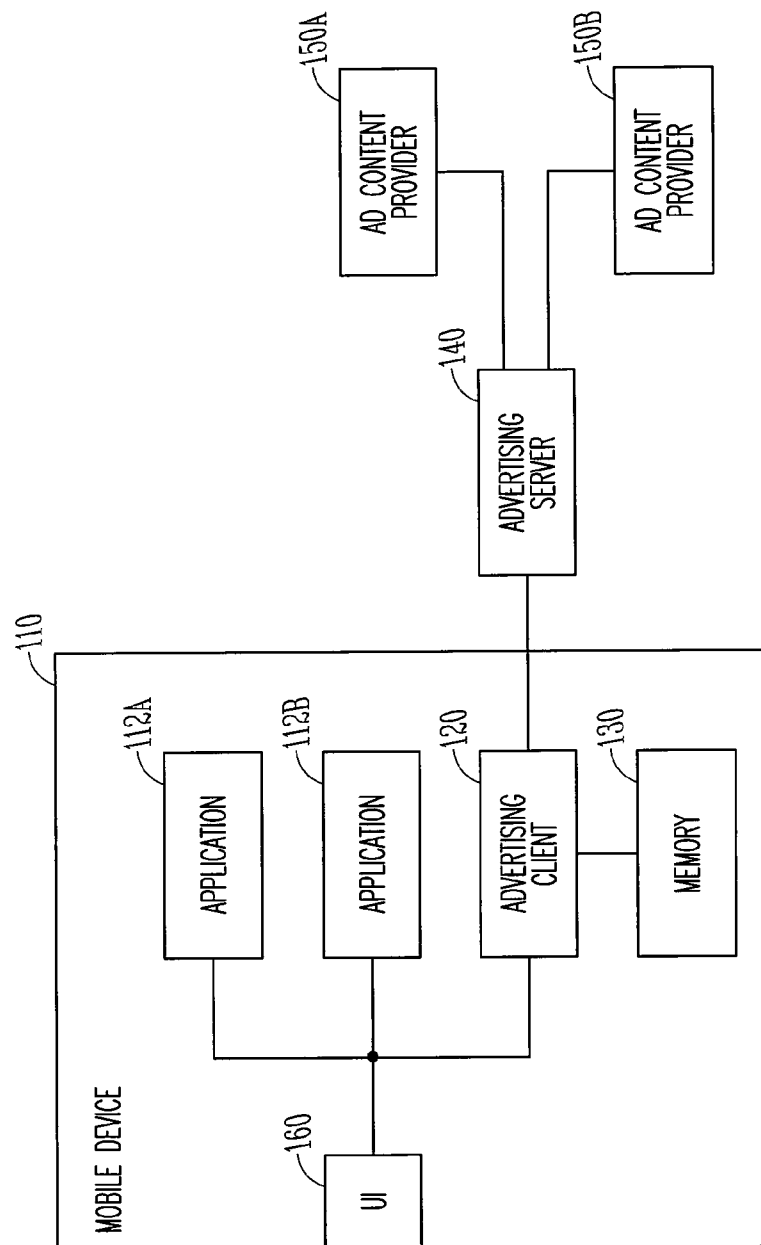
5 24. The method of claim 23 wherein metadata relevant to the at least one ad is included in the response in place of the omitted one identifier.

25. A mobile device comprising:

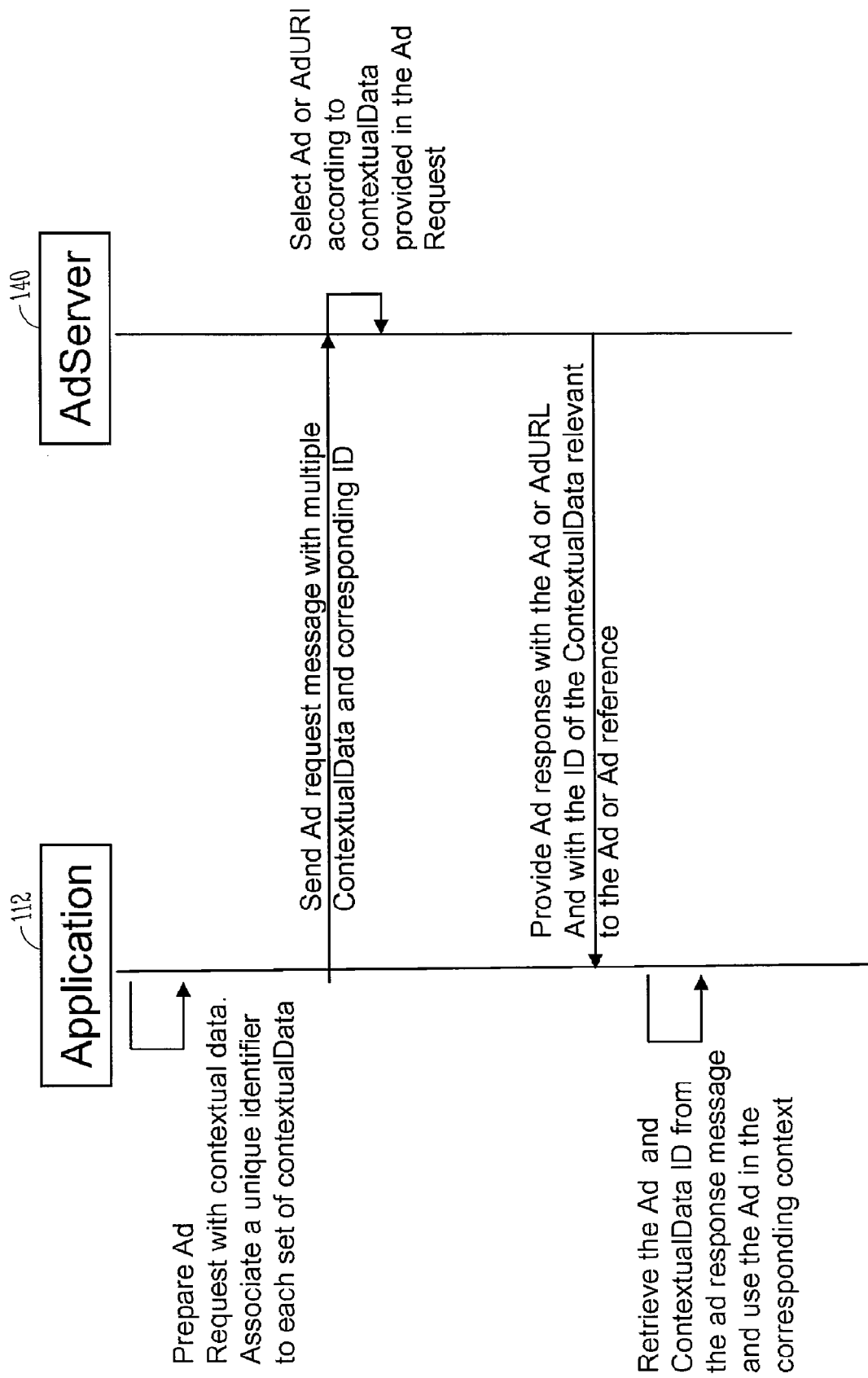
an advertising application configured to perform the method of any one
10 of claims 18-24, the advertising application interacting with the advertising engine which is an Ad Engine compliant with the Open Mobile Alliance (OMA) Mobile Advertising (MobAd) specification.

15

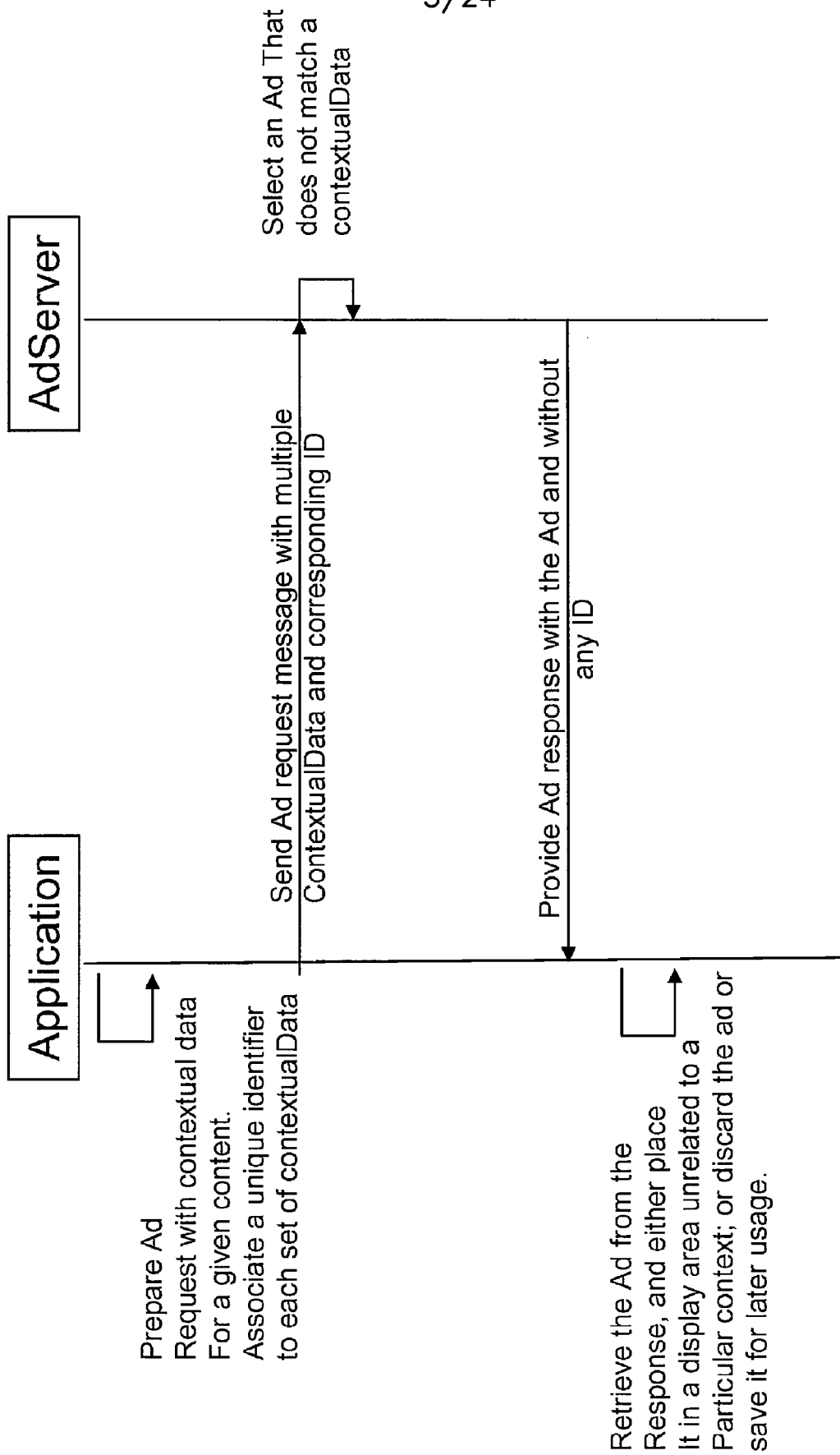
1/24

*FIG. 1*

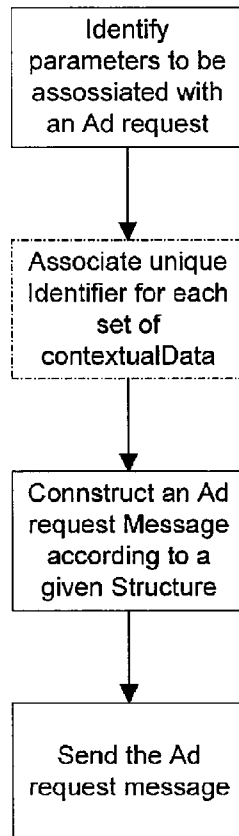
2/24

*FIG. 2*

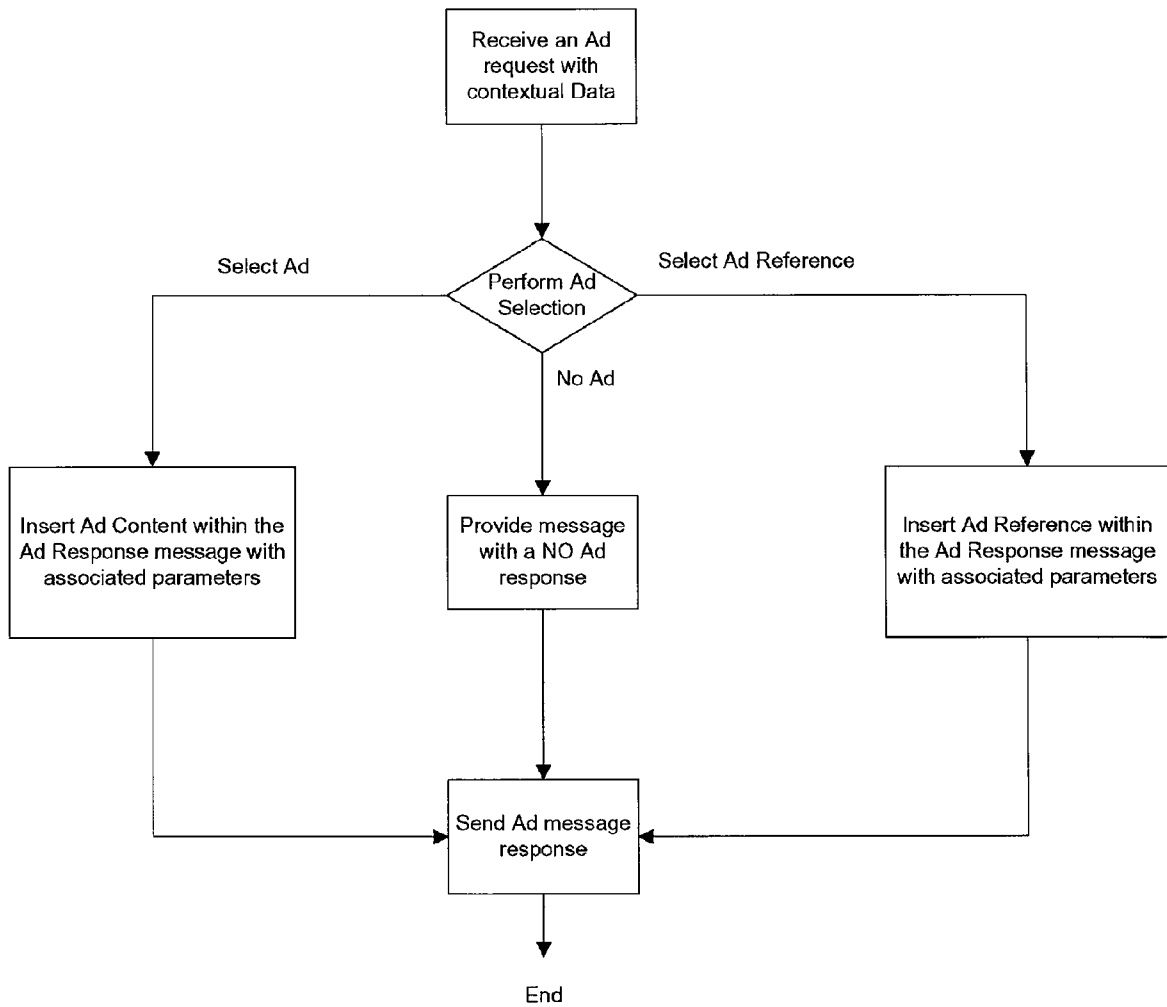
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*FIG. 3*

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*FIG. 4*

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*FIG. 5*

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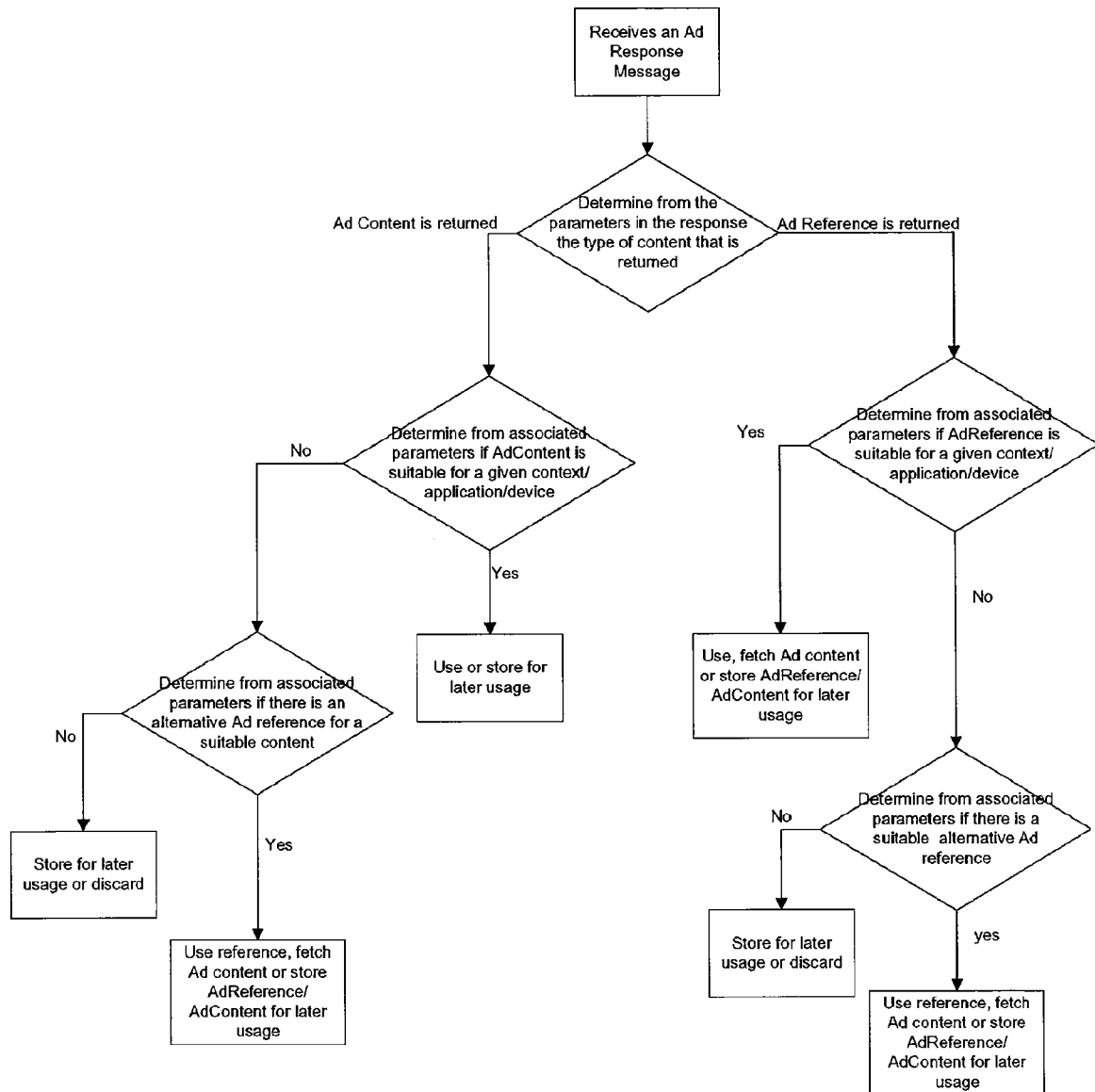


FIG. 6

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Parameter name	Hierarchy	Data type	Parameter cardinality	Description
PictureData	E1	Base64Binary	Optional, up to one	The binary data of the picture, encoded in Base64 to allow embedding into XML. PictureData, Text, VideoData, AudioData and otherFormat are mutually exclusive, only one of them is present per AdContentData.
MIMETYPE	A	String	Conditional to the presence of PictureData, one	The MIME media type of the picture.
ContentSource	A	String	Conditional to the presence of PictureData, one	Indicate the publisher of the picture Ad
Width	A	integer	Conditional to the presence of PictureData, one	Indicate the width of the picture Ad.
Height	A	Integer	Conditional to the presence of PictureData, one	Indicate the height of the picture Ad.
Text	E1	String	Optional, up to one	Text based advertisement.
Hyperlink	A	String	Optional, zero or more	Contains a URI pointing to e.g. additional content or services provided by the advertising party.
Size	A	Integer	Optional, up to one	Indicate the amount of characters contained in the Text element.
Encoding	A	String	Conditional to the presence of ContentType=0	Indicate the encoding scheme used for text, such as ASCII, Unicode, UTF-8
Language	A	String	Optional and conditional to	Indicate the language to be used for text. The following reference should

FIG. 7A

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			the presence of text One or more	be used: http://www.rfc-editor.org/rfc/bcp/bcp47.txt Note: Multiple instance of Language can be present to support multiple languages.
RichText	E1	String	Optional, up to one	Text based advertisement, possibly in multiple languages. The language is expressed using built-in XML attribute 'xml:lang' with this element. Text format attributes (e.g. font, size and colour) are defined by HTML version 4.01. The content of the 'Text' element SHALL either be embedded in a CDATA section or base64-encoded. PictureData, Text, VideoData, AudioData and otherFormat are mutually exclusive, only one of them is present per AdContentData.
Width	A	Integer	Optional	Indicate the width of the rich-text display area
Height	A	Integer	Optional	Indicate the Height of the rich-text display area
Hyperlink	A	String	Optional, zero or more	Contains a URI pointing to e.g. additional content or services provided by the advertising party.
Size	A	Integer	Up to one	Indicate the amount of character
FontSize	A	Integer	Optional	Indicate the size of the font to be used to display the rich-text
Encoding	A	String	Conditional to the presence of Text	This attribute signals the way the HTML data have been embedded: - It SHALL NOT be present when the HTML data are embedded into a CDATA section. - It SHALL be present and set to "base64" in case the HTML data are base64-encoded.
VideoData	E1	Base64Binary	Optional, up to	Video based advertisement.

FIG. 7B

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			one	PictureData, Text, VideoData, AudioData and otherFormat are mutually exclusive, only one of them is present per AdContentData.
Width	A	Integer	one	Indicate the width of the video
Height	A	Integer	one	Indicate the height of the video
Hyperlink	A	String	Zero or more	Contains a URI pointing to e.g. additional content or services provided by the advertising party.
Size	A	Integer	Up to one	Indicate the length of the video.
Duration	A	Integer	Optional	Indicate the duration of the video
VideoMimeType	A	String	Conditional to the presence of videoData	Indicate the MIME media type of the Video
ContentSource	A	String	Conditional to the presence of PictureData, one	Indicate the publisher of the video Ad
AudioData	E1	Base64Binary	Optional, up to one	Audio based advertisement. PictureData, Text, VideoData, AudioData and otherFormat are mutually exclusive, only one of them is present per AdContentData.
Hyperlink	A	String	Zero or more	Contains a URI pointing to e.g. additional content or services provided by the advertising party.
AudioMimeType	A	String	Conditional to the presence of AudioData	Indicate the mime media type of the Audio format

FIG. 7C

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OtherFormat	E1		Optional, up to one	Advertisement in other formats PictureData, Text, VideoData, AudioData and otherFormat are mutually exclusive, only one of them is present per AdContentData. Examples of 'OtherFormat' may be Flash, SVG, and other rich media formats that are ideal for displaying advertisements.
Width	A	Integer	Zero or one	Indicate the width of the "OtherFormat"
Height	A	Integer	Zero or one	Indicate the height of the "otherformat"
Hyperlink	A	String	Zero or more	Contains a URI pointing to e.g. additional content or services provided by the advertising party.
Size	A	Integer	Zero or one	Indicate the length of the otherformat
Duration	A	Integer	Zero or one	Indicate the time duration of the otherformat
MimeType	A	String	Conditional to the presence of OtherFormat	Indicate the Mime media type of the other format

FIG. 7D

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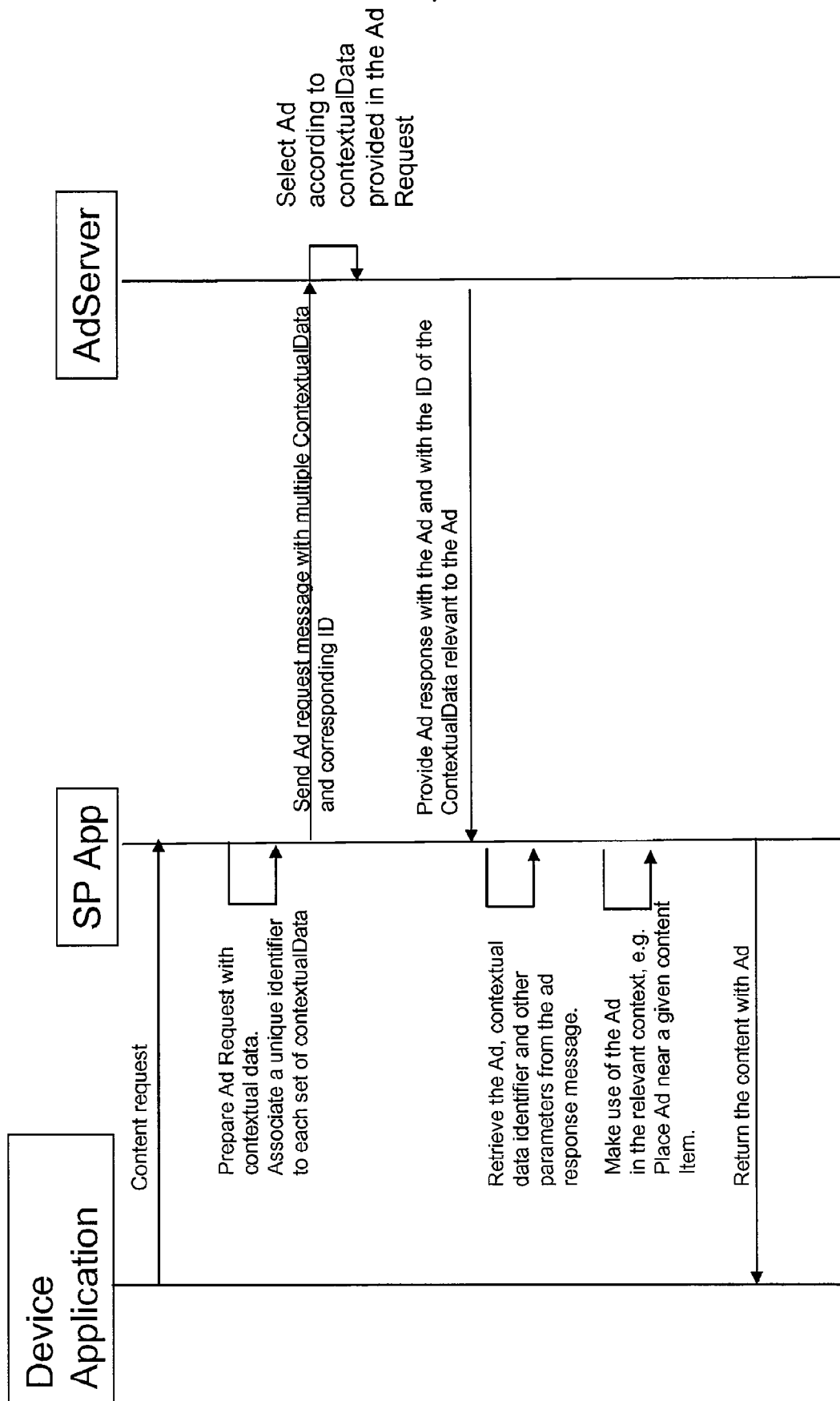


FIG. 8

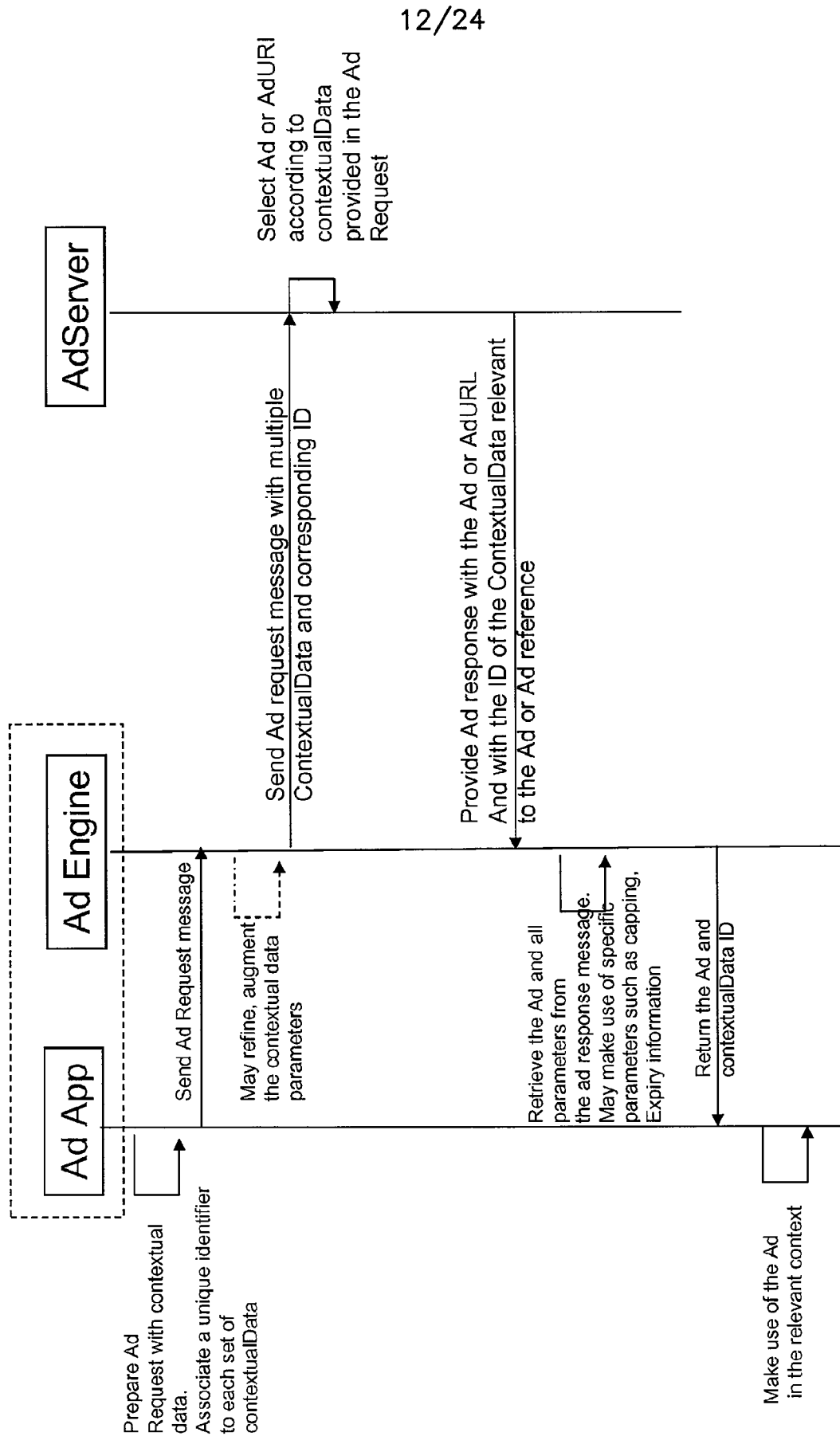


FIG. 9

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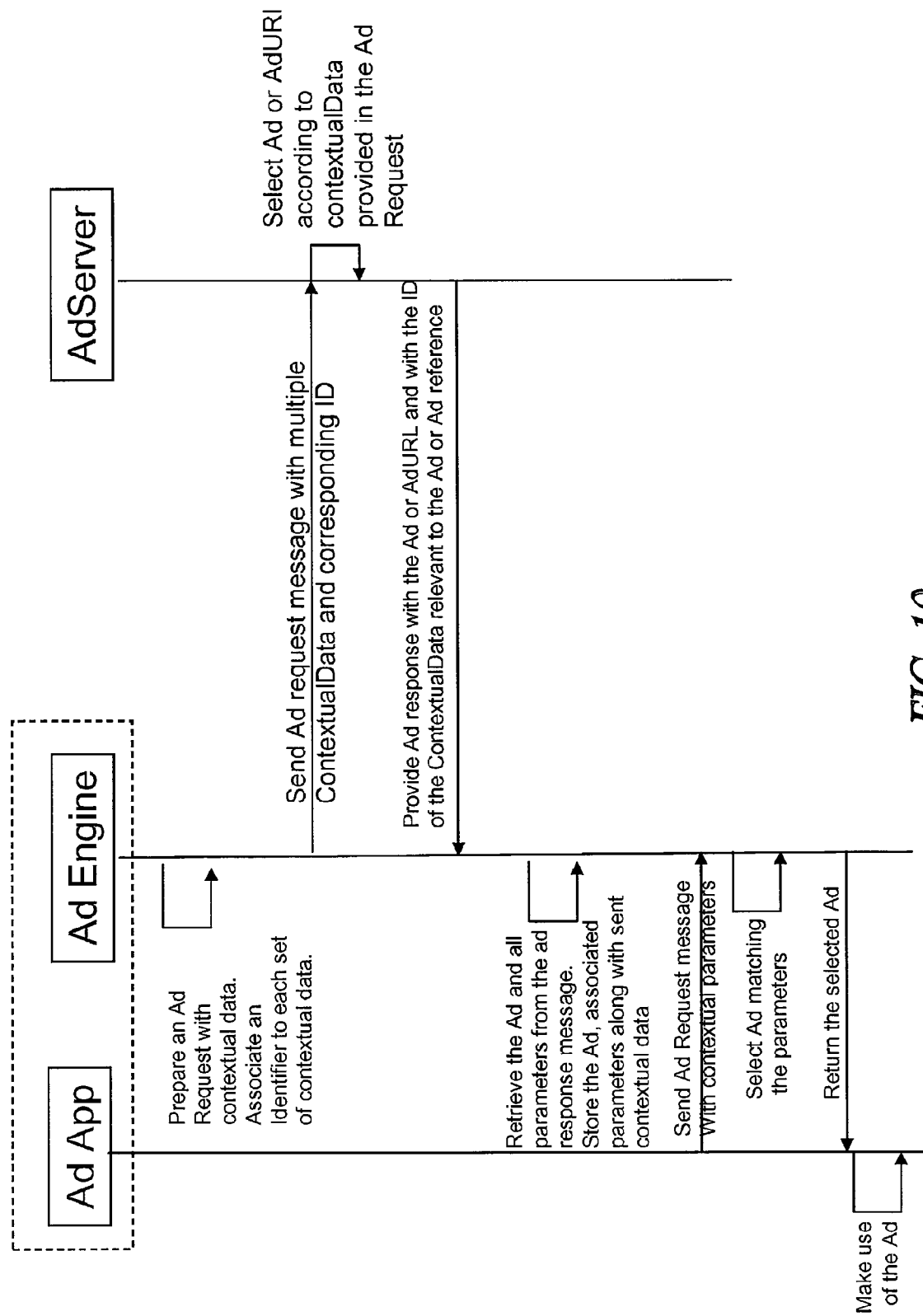


FIG. 10

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CONTEXTUAL DATA STRUCTURE

Parameter name	Hierarchy	Data type	Parameter cardinality	Description
ContextualDataID	A	String	Mandatory, one	Identifier of the contextualData structure. Note: If multiple Contextual data structure are present in the request message, each ContextualDataID should be unique.
ContextKeyword	A	String(s)	Optional, zero or more	Identifies all the keywords are meant to describe the ad opportunity context as to facilitate the ad selection.
AdProvider	A	String	Optional, zero or one	Identifies the Ad provider identifier.

FIG. 11

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AD CONTENT REFERENCE STRUCTURE

Parameter name	Hierarchy	Data type	Parameter cardinality	Description
AdLocation URI	E1	URI	Mandatory, up to only one per ad	Contains a URI to a given, defined ad, e.g. "http://adserver/example.com/12345".
MIMETYPE	A	String	Mandatory, One	Indicate the mime-media type of the content that can be retrieved on the URI.
Version	A	String	Optional	Indicate the version of the mime-media type of the content that can be retrieved on the URI It MUST be present if the MIME-media type has multiple version
AlternativeURI	E1	URI	Optional	Contains a URI to an alternative version of the same Ad. Note: The AlternativeURI should have the same structure/parameters than the AdLocation URI.

FIG. 12

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AD CONTENT DATA STRUCTURE

Parameter name	Hierarchy	Data type	Parameter cardinality	Description
ContentType	E1	Enumeration	Mandatory, One	Indicate which type of Ad Data is contained. Can take the following value: 0- Text 1- Picture 2- Video 3- Audio 4- HTML 5- SVG 6- RME 7- 256 reserved for future use
MIMETYPE	A	String	Mandatory, One	Indicate the mime-media type of the content.
Version	A	String	Conditional, One	The version of the codec specified by the mime-type, if applicable. Condition: This parameter is present if there are multiple versions relevant to the mime-type value (e.g. h263-level1 vs. h263-level2)
Payload	A	TBD (base64Binary or hexBinary)	Mandatory, One	The actual Ad content data
Size	A	Integer	Mandatory, One	Indicates the size of the payload
Hyperlink	A	String	Optional, zero or more	Contains a URI pointing to e.g. additional content or services provided by the advertising party. Note: if the format does not allow a hyperlink to be associated with the Ad content, the hyperlink may be provided in an alternate manner (e.g. by providing a link outside the content display area with a "click to download" text pointing to an

FIG. 13A

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				URI).
TextEncoding	A	String	Conditional, one	Indicate the encoding scheme used for text, such as ASCII, Unicode, UTF-8. Condition: this parameter is present only if ContentType parameter is 0-Text.
Language	A	String	Conditional, zero or more	Indicate the language(s) to be used for text. The following reference should be used: http://www.rfc-editor.org/rfc/bcp/bcp47.txt Note: Multiple instance of Language can be present to support multiple languages. Condition: this parameter is present only if ContentType parameter is 0-Text.
Width	A	Short (integer)	Mandatory (one)	Indicates the desired 'width' of the display area in pixels into which the ad content data should be displayed. Note: This is not applicable in the case of Audio only AdContentData
Height	A	Short (integer)	Mandatory (one)	Indicates the desired 'height' of the display area in pixels into which the ad content data should be displayed. Note: This is not applicable in the case of Audio only AdContentData
AlternativeContentData	E	Structure	Optional	Contains an alternative version of the same Ad. Note; the AlternativeContentData should have the same structure than the AdContentData.
AlternativeURI	E	URI	Optional	Contains an URI to an alternative version of the same Ad. Note: The AlternativeURI should have the same structure/parameters than the AdLocationURI.

FIG. 13B

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AD RESPONSE MESSAGE

Parameter name	Data type	Parameter cardinality	Description
AdId	String (A)	Mandatory, only one per ad	Contains the unique identifier of the concerned instance of the ad, e.g. "acme_co_2133x0001". It may contain the campaign Id, where the formatting would be subject to a specific SP policy.
AdContentReference	Structure (E)	Conditional, up to only one per ad	Indicates the reference to the Ad. The content referenced by this URI SHALL be identical to the data, if obtained via the AdContentData parameter. Condition: This parameter is mutually exclusive with AdContentData. The response MUST include either one of them.
AdContentData	Structure (E)	Conditional, up to only one per Ad	Indicates the actual Ad. Condition: This parameter is mutually exclusive with AdReference. The response MUST include either one of them.
ContextualDataID	String (A)	Conditional, zero or more	Identifies the ContextualData structure that was passed in the request and that is relevant to this Ad. Condition: This parameter is returned if ad matches one of multiple contexts specified in the request. Skipped, if returned default Ad.

FIG. 14A

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AD RESPONSE MESSAGE

ValidStartDate	String (A)	Optional, up to one per ad	Contains the 'start' timestamp describing the time at which the given Ad, is valid e.g. "200904019, 15:00, GMT".
ValidEndDate	String (A)	Optional, up to one per ad	Contains the 'end' timestamp describing the time at which the given Ad is no longer valid, e.g. "200906019, 15:00, GMT".
DisplayTime	String (A)	Optional, up to only one per ad	Contains information on when the given ad is to be used, e.g. "Mon-Fri; 22.00-01.00GMT".
FrequencyCap	Integer (A)	Optional, up to only one per ad	Contains the maximum number of the opportunities where the given ad is to be used.

FIG. 14B

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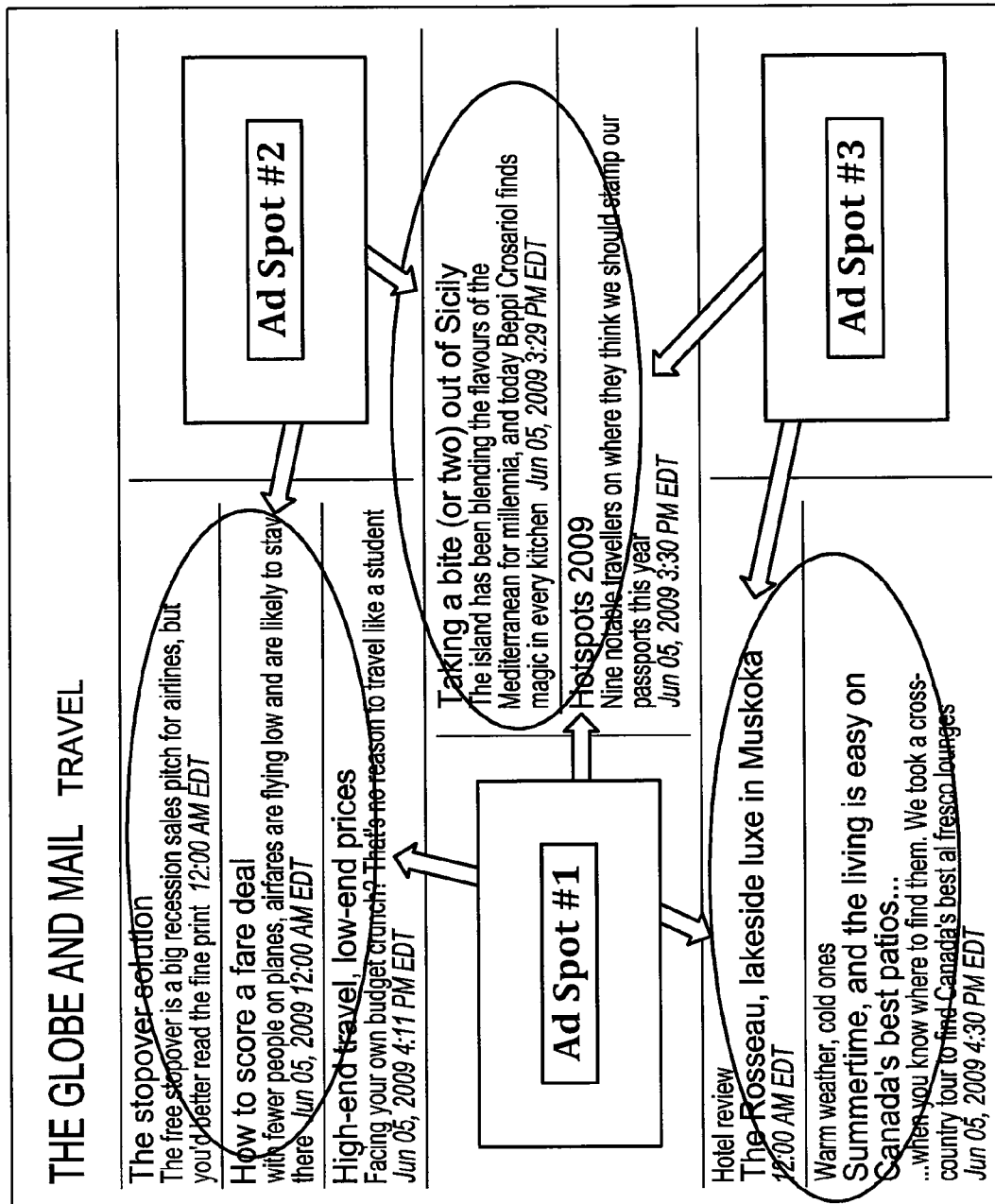


FIG. 15

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THE GLOBE AND MAIL TRAVEL

The stopover solution
The free stopover is a big recession sales pitch for airlines, but you'd better read the fine print 12:00 AM EDT

How to score a fare deal
with fewer people on planes, airfares are flying low and are likely to stay there Jun 05, 2009 12:00 AM EDT

High-end travel, low-end prices
Facing your own budget crunch? That's no reason to travel like a student Jun 05, 2009 4:11 PM EDT

Wrong place!!!

THERE'S NO PLACE LIKE THIS



31 ONTARIO
Years to discover

Wrong place!!!

31 ONTARIO
Years to discover



THERE'S NO PLACE LIKE THIS

Wrong place!!!

THERE'S NO PLACE LIKE THIS



31 ONTARIO
Years to discover

Wrong place!!!

THERE'S NO PLACE LIKE THIS



31 ONTARIO
Years to discover

Wrong place!!!

THERE'S NO PLACE LIKE THIS



31 ONTARIO
Years to discover

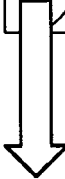
Wrong place!!!

THERE'S NO PLACE LIKE THIS



31 ONTARIO
Years to discover

FIG. 16

THE GLOBE AND MAIL TRAVEL The stopover solution The free stopover is a big recession sales pitch for airlines, but you'd better read the fine print 12:00 AM EDT How to score a fare deal with fewer people on planes, airfares are flying low and are likely to stay there Jun 05, 2009 12:00 AM EDT High-end travel, low-end prices Facing your own budget crunch? That's no reason to travel like a student Jun 05, 2009 4:11 PM EDT	 <i>Best of Sicily</i> <i>A guide to Sicilian travel... and all things Sicilian.</i> simple ☞ minds  Taking a bite (or two) out of Sicily The island has been blending the flavours of the Mediterranean for millennia, and today Beppe Crocarioli finds magic in every kitchen Jun 05, 2009 3:29 PM EDT Hotspots 2009 Nine notable travellers on where they think we should stamp our passports this year Jun 05, 2009 3:30 PM EDT	 THERE'S NO PLACE LIKE THIS  ONTARIO <i>Have to discover</i> 31 (Rollover to Get Away)
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Hotel review
The Rosseau, lakeside luxe in Muskoka
 12:00 AM EDT

Warm weather, cold ones
Summertime, and the living is easy on Canada's best patios...
 ...when you know where to find them. We took a cross-country tour to find Canada's best al fresco lounges
Jun 05, 2009 4:30 PM EDT

FIG. 17

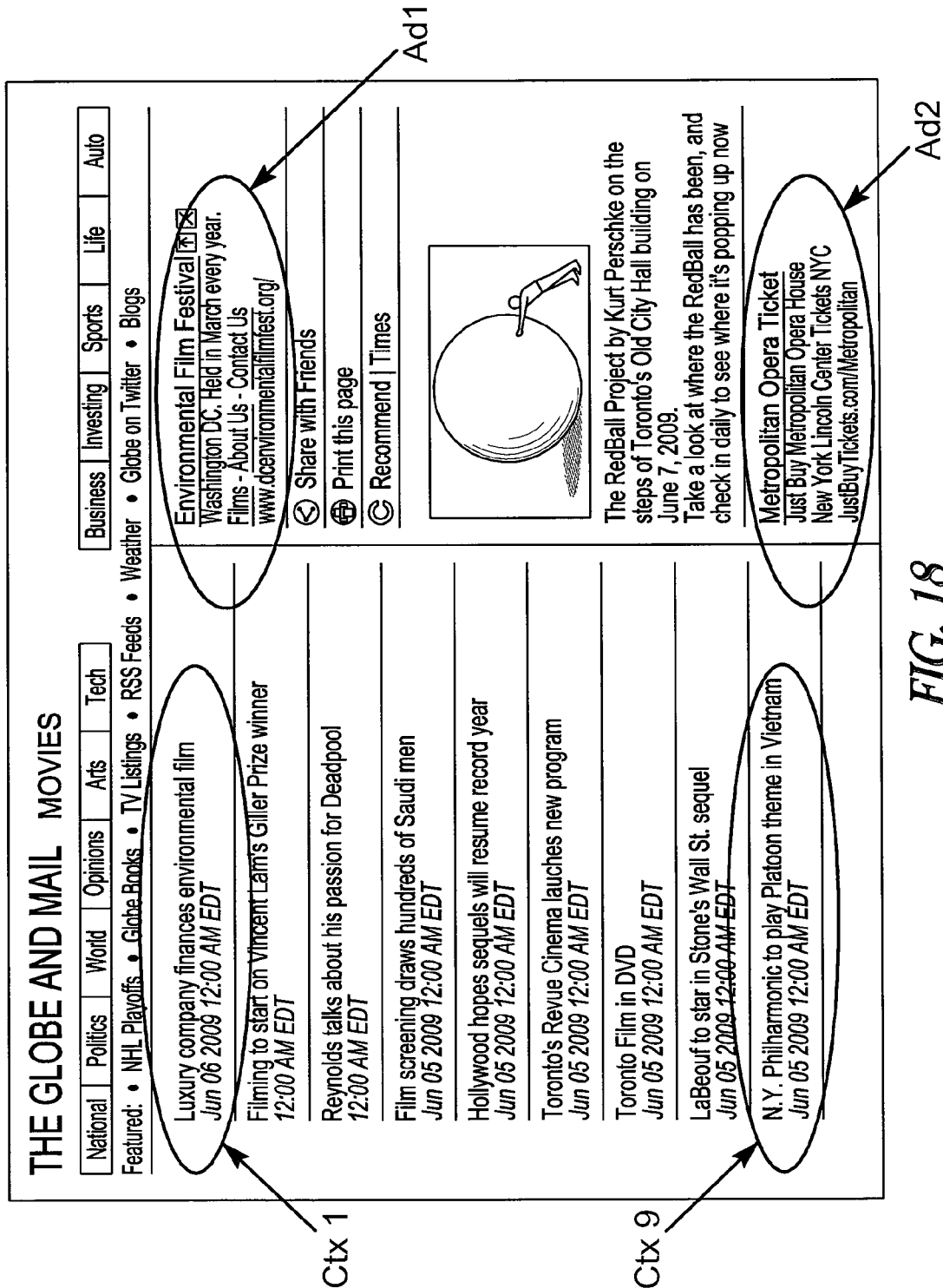


FIG. 18

THE GLOBE AND MAIL

MOVIES

National

Politics

World

Opinions

Arts

Tech

Business

Investing

Sports

Life

Auto

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Luxury company finances environmental film
Jun 06 2009 12:00 AM EDT

Filming to start on Vincent Lam's Giller Prize winner
12:00 AM EDT

Reynolds talks about his passion for Deadpool
12:00 AM EDT

Film screening draws hundreds of Saudi men
Jun 05 2009 12:00 AM EDT

Hollywood hopes sequels will resume record year
Jun 05 2009 12:00 AM EDT

Toronto's Revue Cinema launches new program
Jun 05 2009 12:00 AM EDT

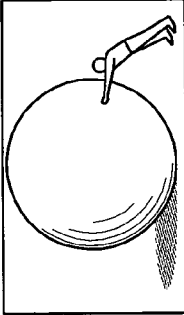
Toronto Film in DVD
Jun 05 2009 12:00 AM EDT

LaBeouf to star in Stone's Wall St. sequel
Jun 05 2009 12:00 AM EDT

N.Y. Philharmonic to play Platoon theme in Vietnam
Jun 05 2009 12:00 AM EDT

Marvel Comics

World's top site for vintage comics
with over 150,000 comics in stock!
www.metropoliscomics.com



The RedBall Project by Kurt Perschke on the
steps of Toronto's Old City Hall building on
June 7, 2009.

Take a look at where the RedBall has been, and
check in daily to see where it's popping up now

Metropolitan Opera Ticket

Just Buy Metropolitan Opera House
New York Lincoln Center Tickets NYC
JustBuyTickets.com/Metropolitan

Ad1

Ad2

Ctx 3

Ctx 9

FIG. 19

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2010/038370

A. CLASSIFICATION OF SUBJECT MATTER

INV. G06Q30/00

ADD.

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 claimed subject matter, with due regard to the description and drawings in accordance with Rule 33.3 PCT, relates to processes comprised in the list of subject matter activities for which no search is required under Rule 39 PCT. The applicant is advised that in accordance with the established practice of the EPO, no search need be performed in respect to those aspects of the claimed invention. The only identifiable technical aspects of the claimed invention relate to the use of conventional, general-purpose data processing technology for processing data of an inherently non-technical nature. The information technology employed is considered to have been generally known as it was widely to available to everyone at the date of filing/priority of the present	1-25



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.

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Date of the actual completion of the international search

27 October 2010

Date of mailing of the international search report

05/11/2010

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040,
 Fax: (+31-70) 340-3016

Authorized officer

Mülthaler, Evelyn

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2010/038370

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	application. The notoriety of such prior art cannot reasonably be contested. No documentary evidence was therefore considered required. -----	