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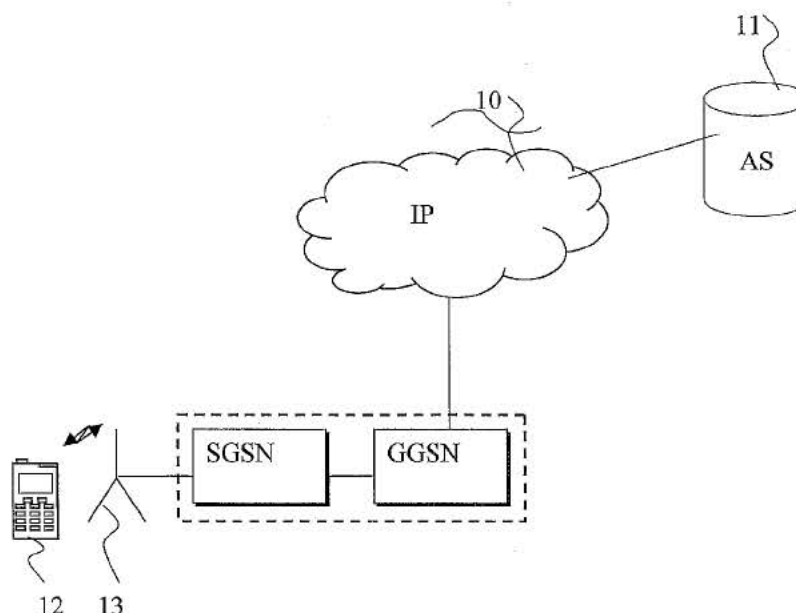
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(54) Title: CHARGING IN A COMMUNICATION SYSTEM



(57) Abstract: A method for charging in a communication system, the method comprising: initiating a data communication session between a user equipment and a network entity offering a digital content item; during the data communication session, generating by means of the user equipment a message for ordering the digital content item, sending the message to the network entity and, in response to the message received in the network entity, downloading the content item to the user equipment; and charging the digital content item using a predefined price of the message.

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## Charging in a communication system

### Field of invention

The invention relates to communication systems, and more particularly to charging in a communication system.

### 5 Background of invention

A communication system can be seen as a facility that enables communications between two or more entities such as user equipment and/or other nodes associated with the communication system. The communication session may comprise, for example, communication of voice, data, multimedia and so on. A user equipment may, for example, be provided with a two-way  
10 telephone call, multi-way conference call, electronic mail service or a data communication session. A user equipment may also be provided with a connection to an application server (AS), for example a service provider server, thus enabling use of services provided by the application server.

15 Examples of communication systems may include fixed communication systems, such as a public switched telephone network (PSTN), wireless communication systems, such as a public land mobile network (PLMN), and/or other communication networks such as an IP (Internet Protocol) and/or other packet switched data networks. Various communication systems may  
20 simultaneously be concerned in a connection.

The PLMNs are typically based on cellular technology. In cellular systems, a base transceiver station (BTS) or similar access entity serves wireless user equipment (UE), such as mobile stations (MS), via a wireless interface between these entities. Examples of mobile communication systems are the  
25 Global System for Mobile Communications (GSM), General Packet Radio Service (GPRS) and Universal Mobile Telecommunications System (UMTS). In addition to call functions, the mobile communication systems may support, for example, short message service (SMS), multimedia message service (MMS) and wireless applications protocol (WAP). For example, a user may access the  
30 mobile network by means of a personal computer (PC), personal digital assistant (PDA), mobile station (MS) and other user equipment (UE). The user equipment may be adapted for Internet Protocol (IP) communication to connect the network.

In communication systems, including mobile communication systems, selling various types of downloadable digital content directly to user equipment may be provided. Examples of such content items may include, but are not limited to logos, ring tones or wallpapers for the user equipment, games and applications and so on. The content may comprise data that can be interpreted and executed by the UE or presented (e.g. in an audio or visual manner) by the UE to a user thereof. The present scheme for providing selling of the content items is to use SMS pull codes for ordering. For example, an SMS order code "GET WPDEMO" may be sent to a particular number, such as an operator specific service number, e.g. 173222. This number could be a normal telephone number, but for convenience it is more normally a short-form number excluding an area code which has been set up by an operator of the network in which the UE is operating. The operator specific service number may belong to any service provider who has made an agreement with an operator. For instance in Finland, a service provider typically reserves exactly the same number from all the major operators. Therefore, it is easy for the end-user to order content, as the same number may always be used. Communications to that number are relayed to a server which may be run by the operator or by another service provider. The server may scan the received message including the order code and the identity of the ordering UE, and deliver the content item indicated by the order code to the ordering user equipment, for example, using SMS or WAP push methods. Such push methods may include, but are not limited to content object descriptor (COD), Java application descriptor (JAD) or the Open Mobile Alliance (OMA) download. The known SMS content item ordering uses a premium rate number. Thus, the ordering SMS may have a different price depending on the ordered content item. The charge for the content item may be included in the telephone bill issued by the operator of the home network of the ordering user or subscriber associated with the ordering UE. The content items and the order codes may be discovered in advertisements in web sites of service providers proposing the content items or in newspapers and magazines. In some applications, the proposed content items might be discovered using a WAP browser in a user equipment.

A WAP browser may be an application in a user equipment resembling for its overall essence any other browser, such as a XHTML (extensible hypertext markup language) browser or a HTTP (hypertext transfer protocol) browser. However, small size and data transfer technology in the mobile communication

systems may create problems and challenges in retrieving content from a service provider. The WAP protocol is tailored to providing browser content to devices with small displays.

5 It might be desired to be able to search, preview and order content items within a WAP, XHTML, HTTP or other browser session in the user equipment. Some tools for content preview and ordering are provided for example in the OMA digital rights management standards. However, no means exist for ordering and charging the content items in WAP and IP environments. In certain cases  
10 billing may be complicated, for example, if service provider is not an operator and wants to offer a service the clients of several operators. The arrangements for WAP and IP billing need typically to be created and agreed by service/content providers with each operator separately. This is time consuming and expensive, as often the service/content provider is a separate entity offering the content items to customers, who may subscribe to any  
15 operator.

US Patent Application US 2003/0163422 A1, filed on 4 February 2003 in the name of Suutarinen, relates to gaining access rights to previously downloaded digital record in a terminal.

20 There is therefore a need for providing a way of more readily charge for the content items sold through the data communication systems, such as the WAP and IP systems.

#### Summary of invention

Embodiments of the invention aim to address one or several of the above problems or issues.

25 In accordance with an aspect of the invention, there is provided a method for charging in a communication system, the method comprising: initiating a data communication session between a user equipment and a network entity offering a digital content item; during the data communication session, generating by means of the user equipment a message for ordering the digital  
30 content item, sending the message to the network entity and, in response to the message received in the network entity, downloading the content item to the user equipment; and charging the digital content item using a predefined price of the message.

The step of initiating a data communication session may comprise initiating a wireless application protocol session.

The method may further comprise providing a template configured to assist in generating the message.

- 5 The step of providing the template may comprise filling the template automatically with an order indication and a number of the network entity.

Preferably, the sending step comprises sending the message automatically, and the sending step may comprise sending the message in response to an acknowledgment.

- 10 The method may further comprise including the predefined price of the message in an invoice generated for charging the data communication session. The message may be a short message service (SMS) or multimedia message service (MMS) message.

- 15 In accordance with another aspect of the invention, there is provided a communication system comprising: initiating means for initiating a data communication session between a user equipment and a network entity offering a digital content item; generating means in the user equipment for generating a message for ordering the digital content item during the data communication session; sending means for sending the message to the  
20 network entity during the data communication session; downloading means for downloading the digital content item in the user equipment during the data communication session; and charging means for charging the digital content item using a predefined price of the message.

- 25 The data communication session may comprise a wireless application protocol session.

- The communication system may further comprise template providing means for providing a template configured to assist in generating the message, and the template may be configured to be filled automatically with an order  
30 indication and a number of the service provider.

The message is preferably configured to be sent automatically, and may be configured to be sent in response to an acknowledgment.

The predefined price of the message may be included in a bill generated for charging the data communication session.

The message may be a short message service (SMS) or multimedia message service (MMS) message.

5 Brief description of figures

The invention will now be described in further detail, by way of example only, with reference to the following examples and accompanying drawings, in which:

Figure 1 shows an example of a communication system architecture in which  
10 embodiments of the invention may be implemented;

Figure 2 shows a flow chart illustrating an embodiment of the invention;

Detailed description of preferred embodiments

Embodiments of the present invention are described referring to the IP systems, but the same idea may be implemented with other packet switched  
15 communication systems as well.

Figure 1 shows an example of a network architecture in which the  
embodiments of the invention may be implemented. A base station 13 is  
arranged to transmit signals to and receive signals from a user equipment 12  
of a mobile user via a wireless interface between the user equipment and a  
20 radio access network. Correspondingly, the user equipment is able to transmit  
signals to and receive signals from the radio access network via the wireless  
interface. In the arrangement of Figure 1, the user equipment 12 may access  
the IP network 10 via the radio access network associated with the base  
station 13.

25 It shall be appreciated that, although for clarity reasons Figure 1 shows one  
base station of only one radio access network, a typical communication  
network system usually includes a number of radio access networks.

The user equipment 12 may comprise any appropriate user equipment  
adapted for Internet Protocol (IP) communication to connect the network. For  
30 example, the mobile user may access the network by means of a Personal  
computer (PC), a Personal Digital Assistant (PDA), a mobile station (MS), or in

general, a user equipment (UE). The following examples are described in the context of user equipment.

In an embodiment, the communication system may include a wireless local area network (WLAN). In such an embodiment, the browser may be connected  
5 to the server via the WLAN bypassing any mobile operators.

Figure 1 shows an application server (AS) 11, or shortly a server, of a service provider. The user equipment 12 may connect, for example via a GPRS network, to the application server that is connected to one or more data networks such as, but not limited to, the exemplifying Internet Protocol (IP)  
10 network. It shall be appreciated that a great number of application servers may be connected to each data network.

The embodiments of the invention are based on the realization that it might be advantageous to be able to provide an improved capability of discover and purchase content items during a data communication session, such as a WAP  
15 or IP session. It might be desirable to provide a means for charging for the content items such that the content items may be priced separately from the data communication session pricing. Furthermore, it might be advantageous to be able to include the price of the content item in an invoice generated for charging for the data communication session. Furthermore, it might be  
20 advantageous to initiate payment prior to downloading content.

Figure 2 is a flowchart showing steps for an embodiment. In step 200, a data communication session is initiated between a user equipment and a network entity offering a digital content item. During the data communication session, in step 202, a message is generated by means of the user equipment for  
25 ordering the digital content item. Further during the data communication session, in step 204, the message is sent to the network entity. In response to the message received in the network entity and still during the data communication session, the content item is downloaded to the user equipment in step 206. In step 210, the digital content item is charged using a predefined  
30 price of the message. It is to be noted that at least the steps 202, 204 and 206 take place during the data communication session.

In an embodiment, a user may connect to a server of a service provider using a WAP browser, a XHTML browser or a HTTP browser. The user may search for interesting digital content items and preview them. The user may be  
35 presented with an option to buy a content item, for example the content item

the user is previewing. The "Buy" option may be presented for example by means of a highlighted text in browser or another appropriate function. When the user selects the "Buy" option, a message, such as a short message service (SMS) or multimedia service (MMS) message, may be generated for ordering  
5 the content item. Preferably, the message is of a fixed length. The message is generated during the data communication session. The message may be generated using a short message service (SMS) in the user equipment by the user, for example, by typing the short message using the user interface. However, in a preferred embodiment, the message generation is at least  
10 partially assisted. The generated short message is then sent to a server operated by or on behalf of the service provider.

In ordering the content items, the message to be sent may need to be in a predefined form. It may be essential that all the spaces and characters are exactly in the form required by the system. In an embodiment, the message  
15 may be generated during the data communication session by means of a template, which is configured to assist in generating the short message. The template may be displayed and filled automatically by the server with an order or buy indication, such as an order code, e.g. "GET WPDEMO", and an order number, such as an operator specific service number, e.g. "173222". The  
20 template may invoke a SMS sending subsystem in the user equipment. The SMS generating and sending may be automatic so that the user does not necessarily even notice that a short message was generated and sent. In an alternative, the SMS sending may require an acknowledgement from the user, for example so that the template filled by the server is displayed to the user,  
25 who may select from at least one option, such as an accept option or a cancel option or another appropriate option, to initiate the sending of the short message.

The document RFC 2368 "The mailto URL scheme" defines a mailto uniform resource locator (URL) scheme. The mailto URL scheme is used to designate  
30 the Internet mailing address of an individual or service. A mailto URL may be contain simply an Internet mail address or may be extended using mail header fields and message bodies.

In an embodiment of the invention, the template assisting in generating the short message during the data communication session may be a WAP page  
35 provided with a "sms" keyword. The sms sending function may be modified from the mailto URL scheme. The IETF (Internet Engineering Task Force).

Network Working Group Internet-Draft "URI scheme for GSM Short Message Service draft-wilde-sms-uri-04" provides an uniform resource identifier (URI) scheme for the SMS. The sms URI scheme may be formulated as follows:

<a href="sms:  
5     *TheOperatorNumberHere?body=OperatorInfoHere>DisplayedTextHere*</a>

The italics "*TheOperatorNumberHere*", "*OperatorInfoHere*" and "*DisplayedTextHere*" denote that the actual information is added in the indicated locations.

10     The "*TheOperatorNumberHere*" is a number, which may be the same than the number where the user would normally send the short message for ordering the content item chosen from a newspaper advertisement or the like, such as an operator specific service number, e.g. "173222".

15     The "*OperatorInfoHere*" contains the information which needs to be sent to the operator or service provider for ordering the content item. The operator or service provider may define what the information is and may parse the needed information when the short message is received by the operator or the service provider. In the above example, said information may be the order code, e.g. "GET WPDEMO". Other examples may include, but are not limited to, "SEND WAP", "CHECK EMAIL" and so on.

20     The "*DisplayedTextHere*" is the text that will be displayed to the user. The form of this text may be virtually anything, some examples including "Buy", "Britney Spears", "Get WAP now".

When the above example is written in the above sms URI scheme, the following form may be obtained:

25     <a href="sms: 173222?body=GET WPDEMO>Buy</a>.

30     The above embodiment enables an at least partly automated SMS sending to the service provider offering the content item. In this embodiment, the user may click on the "buy" option, thereby launching the SMS editor pre-filled with the body of the text, which in this example is GET WPDEMO 173222. Then the user may click in the SMS editor some appropriate functions, for example "OPTIONS" and "SEND". The SMS editor may then display a number field, which may also be pre-filled. The user may click an "OK" option to acknowledge the sending.

For creating a short message according to a predetermined structure, a menu-controlled user-interface has been proposed in the patent application EP 0 801 512 A1. In EP 0 801 512 A1, the user interface presents questions to which the user gives answers by selecting an option or by entering a string of characters on the keypad. The short message to be sent may contain the user's answers as such or the communication device may formulate the message on the basis of those answers. This method for generating the short message may be used in some embodiments of the invention.

Although the invention has been described in the context of particular embodiments, there are several variations and modifications which may be made to the disclosed solution without departing from the scope of the present invention as defined in the appended claims. For example, the communication system used in the various embodiments may be another communication system. The network entities referred to may be called with different names in various communication systems. These entities may also carry out various additional tasks.

Claims

1. A method for charging in a communication system, the method comprising:
  - initiating a data communication session between a user equipment and
  - 5 a network entity offering a digital content item;
  - during the data communication session, generating by means of the user equipment a message for ordering the digital content item, sending the message to the network entity and, in response to the message received in the network entity, downloading the content item to the user equipment; and
  - 10 charging the digital content item using a predefined price of the message.
2. The method according to claim 1, wherein the step of initiating a data communication session comprises initiating a wireless application protocol session.
- 15 3. The method according to claim 1 or 2, further comprising providing a template configured to assist in generating the message.
4. The method according to claim 3, wherein the step of providing the template comprises filling the template automatically with an order indication and a number of the network entity.
- 20 5. The method according to any preceding claim, wherein the sending step comprises sending the message automatically.
6. The method according to any of claims 1-4, wherein the sending step comprises sending the message in response to an acknowledgment.
7. The method according to any preceding claim, further comprising
- 25 including the predefined price of the message in an invoice generated for charging the data communication session.
8. The method according to any preceding claim, wherein the message is a short message service (SMS) or multimedia message service (MMS) message.
- 30 9. A communication system comprising:
  - initiating means for initiating a data communication session between a user equipment and a network entity offering a digital content item;

generating means in the user equipment for generating a message for ordering the digital content item during the data communication session;

sending means for sending the message to the network entity during the data communication session;

5        downloading means for downloading the digital content item in the user equipment during the data communication session; and

charging means for charging the digital content item using a predefined price of the message.

10       10. The communication system according to claim 9, wherein the data communication session comprises a wireless application protocol session.

11. The communication system according to claim 9 or 10, further comprising template providing means for providing a template configured to assist in generating the message.

15       12. The communication system according to claim 11, wherein the template is configured to be filled automatically with an order indication and a number of the service provider.

13. The communication system according to any of claims 9-12, wherein the message is configured to be sent automatically.

20       14. The communication system according to any of claims 9-12, wherein the message is configured to be sent in response to an acknowledgment.

15. The communication system according to any of claims 9-14, wherein the predefined price of the message is included in a bill generated for charging the data communication session.

25       16. The communication system according to any of claims 9-15, wherein the message is a short message service (SMS) or multimedia message service (MMS) message.

1/2

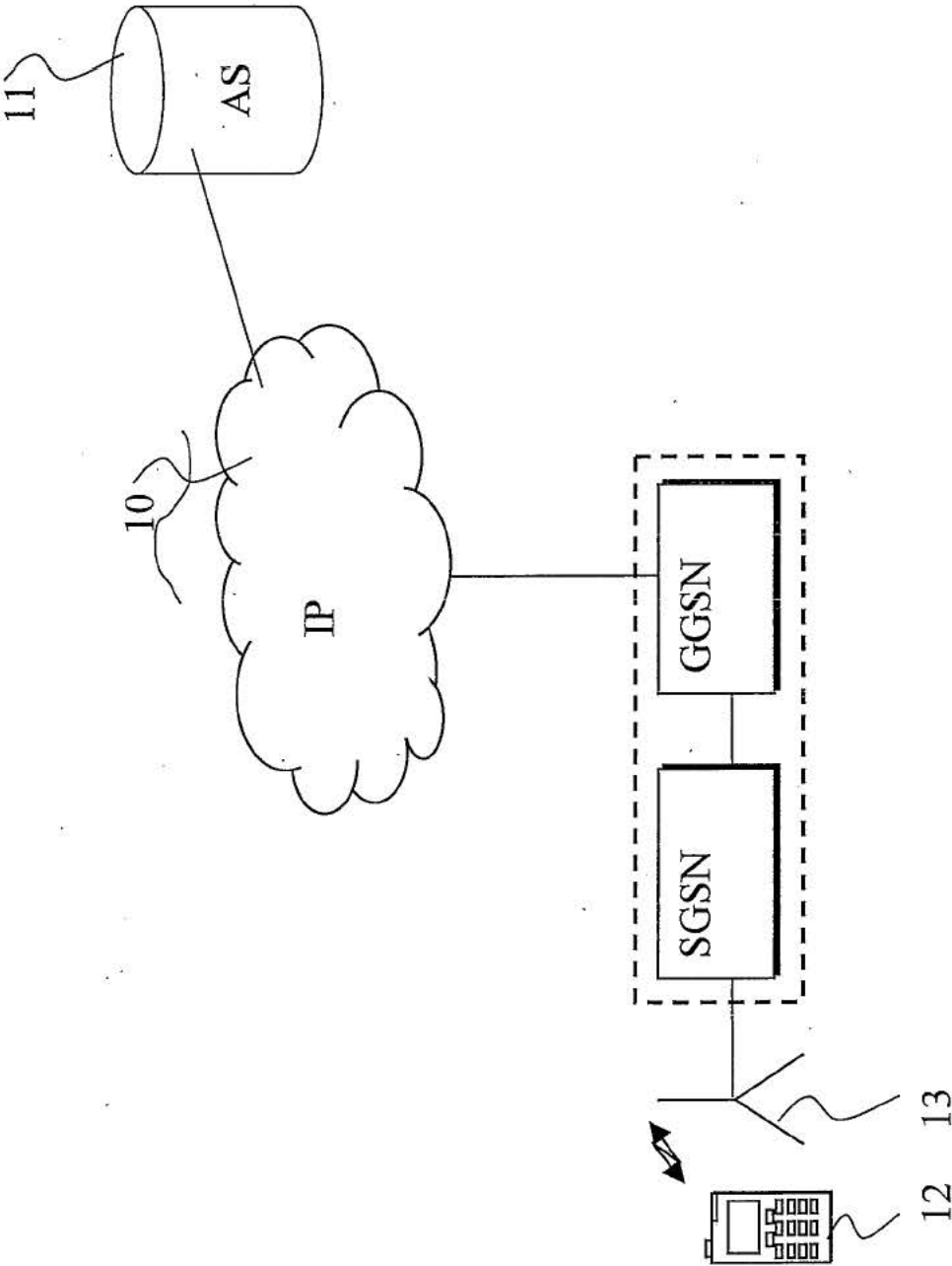


Fig. 1

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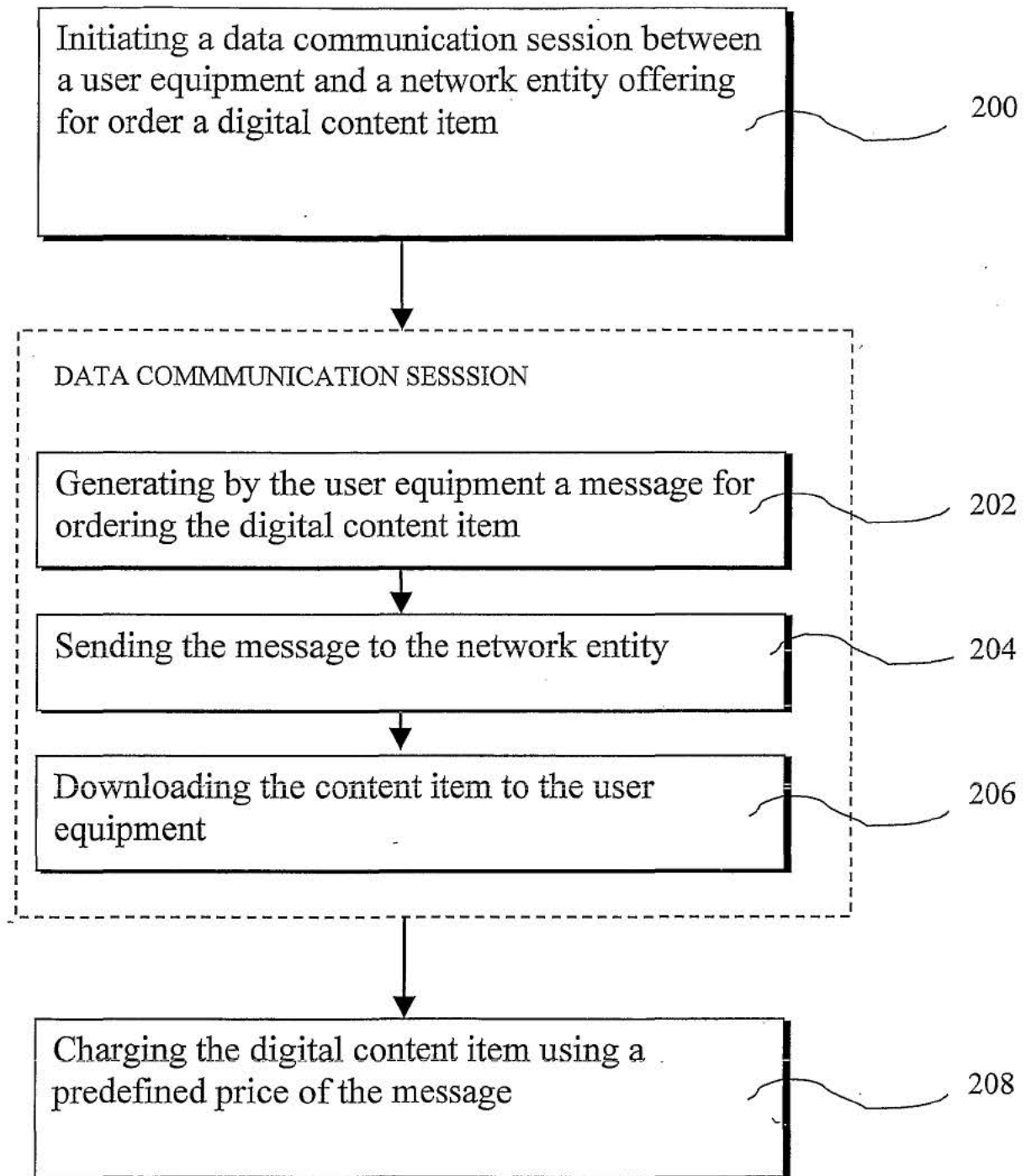


Fig. 2

# INTERNATIONAL SEARCH REPORT

International application No.

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04M 11/00, H04Q 7/22

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)

IPC7: H04Q, H04M

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

SE,DK,FI,NO classes as above

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

EPO-INTERNAL, WPI, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                           | Relevant to claim No. |
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

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"&" document member of the same patent family

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

01/04/2005

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