

**(12) PATENT**  
**(19) AUSTRALIAN PATENT OFFICE**

**(11) Application No. AU 200010259 B2**  
**(10) Patent No. 762164**

(54) Title  
**Method and system for ordering products**

(51)<sup>7</sup> International Patent Classification(s)  
**H04Q 007/22 G06F 017/60**

(21) Application No: **200010259**

(22) Application Date: **1999.11.16**

(87) WIPO No: **WO01/37591**

(43) Publication Date : **2001.05.30**

(43) Publication Journal Date : **2001.08.09**

(44) Accepted Journal Date : **2003.06.19**

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(19) Weltorganisation für geistiges Eigentum  
Internationales Büro



(43) Internationales Veröffentlichungsdatum  
25. Mai 2001 (25.05.2001)

PCT

(10) Internationale Veröffentlichungsnummer  
WO 01/37591 A1

(51) Internationale Patentklassifikation?: H04Q 7/22.  
G06F 17/60

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(21) Internationales Aktenzeichen: PCT/CH99/00541

(22) Internationales Anmeldedatum:  
16. November 1999 (16.11.1999)

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(25) Einreichungssprache: Deutsch

(26) Veröffentlichungssprache: Deutsch

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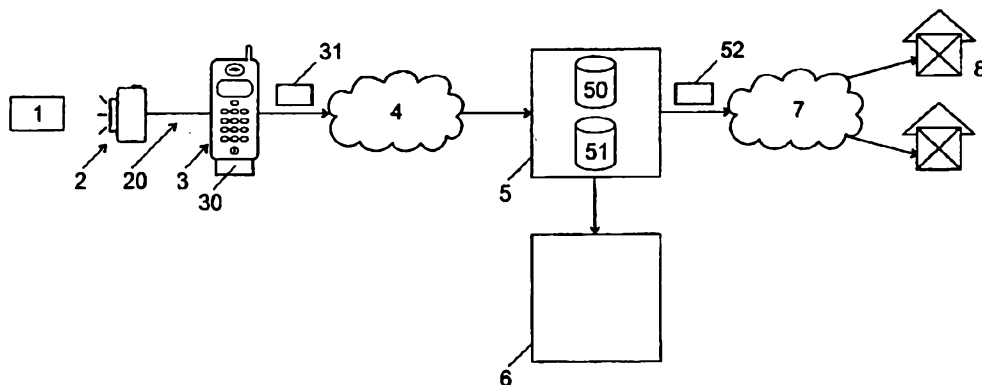
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(81) Bestimmungsstaaten (national): AE, AL, AM, AT, AT  
(Gebrauchsmuster), AU, AZ, BA, BB, BG, BR, BY, CA,  
CH, CN, CR, CU, CZ, CZ (Gebrauchsmuster), DE, DE  
(Gebrauchsmuster), DK, DK (Gebrauchsmuster), DM, EE,  
EE (Gebrauchsmuster), ES, FI, FI (Gebrauchsmuster), GB,  
GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,  
MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
SK, SK (Gebrauchsmuster), SL, TJ, TM, TR, TT, TZ, UA,  
UG, US, UZ, VN, YU, ZA, ZW.

[Fortsetzung auf der nächsten Seite]

(54) Title: METHOD AND SYSTEM FOR ORDERING PRODUCTS

(54) Bezeichnung: PRODUKTEBESTELLUNGSVERFAHREN UND SYSTEM



(57) Abstract: The invention relates to a method which allows a mobile subscriber in a mobile radio network (4) to order products (1), comprising the following steps: acquisition of an image which corresponds to the product to be ordered (1); linking of the image file to a personal identification of the mobile subscriber; transmission of the linked order message (31) to a server (5) in said mobile radio network (4); comparison of the image file with images stored in a product database (50), each of said images in the database (50) being linked to a product supplier (8) identification; sending of a message (52), containing identification of an ordered product (1) and of the ordering mobile subscriber to said product supplier (8).

(57) Zusammenfassung: Verfahren, mit welchem ein Mobilteilnehmer in einem Mobilfunknetz (4) Produkte (1) bestellen kann, mit folgenden Schritten: Aufnehmen eines Bildes, das dem zu bestellenden Produkt (1) entspricht, Verknüpfung der Bilddatei mit einer persönlichen Identifizierung des Mobilteilnehmers, Übertragung der verknüpften Bestellungs meldung (31) an einen Server (5) im benannten Mobilfunknetz (4), Vergleich der benannten Bilddatei mit in einer Produktdatenbank (50) gespeicherten Bildern, wobei jedes benannte Bild in der benannten Datenbank (50) mit einer Identifizierung des Produkteanbieters (8) verbunden ist, Aussendung einer Meldung (52), die eine Identifizierung des bestellten Produktes (1) und des bestellenden Mobilteilnehmers enthält, an den benannten Produkthanbieter (8).



(84) Bestimmungsstaaten (*regional*): ARIPO-Patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), eurasisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI-Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

**Veröffentlicht:**

— Mit internationalem Recherchenbericht.

*Zur Erklärung der Zweibuchstaben-Codes, und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.*

**Abstract**

Method with which a mobile user in a mobile network (4) can order products (1), with the following steps:

5        recording an image corresponding to the product (1) to be ordered,

         linking the image data with a personal identification of the mobile user,

         transmitting the linked order message (31) to a server (5) in said mobile radio network (4),

10        comparing said image data with images stored in a product database (50), each of said image in said database (50) being linked with an identification of the product provider (8),

         sending a message (52) containing an identification of the ordered product (1) and of the ordering mobile user to said product

15        provider (8).

(Fig. 1)

1	Product
2	Camera or scanner
20	Interface (Bluetooth, HomeRF, IrdA, etc.)
3	Mobile radio telephone
30	Identification card (SIM, WIM)
31	Order message
4	Mobile radio network
5	Flexmart-Server
50	Mobile user database
51	Product database
52	Linked data
6	Billing-Center
7	Telecommunication network (PSTN, Internet, GSM, ..)
8	Product provider

## Product Order Method and System

The present invention concerns a method for ordering products and information about products.

Patent EP689368 describes a method for packing and sending  
5 data in SMS (Short Message Services) messages through a mobile radio network. With this method, it is possible for example to transmit between various mobile radio devices not only short text messages such as for example "Please call home", but also more complex messages and programs that are automatically recognized by the receiving terminal and  
10 can trigger a certain action.

The WAP (Wireless Application Protocol) architecture describes another protocol with which the users of WAP-capable mobile devices can access Internet, Intranet and Internet similar services over various bearers such as SMS, USSD, etc.

15 It thus becomes possible to use mobile devices as clients in a client-server architecture in a mobile radio network. The advantage of such systems is the possibility of identifying customers, with a high degree of reliability, by means of an identification module, for example by means of a SIM (Subscriber Identification Module) card. It has for example been  
20 proposed in patent application WO92/28900 to enter order codes in a mobile device, in order for example to order products or services from a supplier. These order codes are standardized and contain at least a first field with which a supplier is clearly identified, as well as a second field with which a certain product from that supplier is indicated. Additional  
25 fields can furthermore be defined, in order for example to indicate the type of transaction and the mode of payment. The customer is reliably identified by the infrastructure in the network. The order codes entered by the users are transmitted to a clearing station in the mobile radio network and automatically assigned by it to the supplier indicated. The chosen supplier  
30 receives an order from the customer with a clear identification of this customer and of the ordered product or of the desired service.

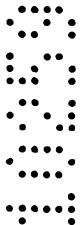
The typing of the order codes, which may contain many characters, with an often miniaturized and incomplete keyboard is laborious and susceptible to errors. Furthermore, it can be difficult for a provider to make product codes known quickly.

5

Another method requiring the typing of order codes on the keyboard of a mobile telephone is described in EP-A1-0951191.

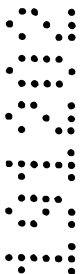
DE-U1-29613393 describes a mobile telephone with a barcode reader.

10 The signals of the barcode reader are converted in the corresponding order number within the telephone through an encoding device and stored. The order number is then transmitted to a remote server. This method is suited only for images that can be converted within the mobile telephone.



15 The discussion of the background to the invention herein is included to explain the context of the invention. This is not to be taken as an admission that any of the material referred to was published, known or part of the common general knowledge in Australia as at the priority date of any of the claims.

20 It is therefore an aim of the invention to propose a new and improved or alternative order method.



In one aspect of the present invention, there is provided a method with which a mobile user in a mobile network can order products, including  
25 transmitting an order message to a server in said mobile radio network,

sending a message containing an identification of the ordered product and of the ordering mobile user to a product provider,

30 recording an image corresponding to the product to be ordered, linking the image data with a personal identification of the mobile user in said order message; and

comparing in said server said image data with images stored in a product database, each of said image in said database being linked with an identification of the product provider to which said message is sent.

This has an advantage that the mobile user does not have to enter any product codes and only sends an image of the desired product. The image can be recorded with a camera that is integrated in the mobile radio telephone or connected with the mobile radio telephone.

5

In a second aspect of the present invention, there is provided a server capable of being connected in a mobile radio network so that mobile users can send messages to it, having the following characteristics:

- 10 a product database in which product images are stored,
- a user database in which mobile user specific attributes are stored, and
- a module for comparing image data in the order messages received from mobile users with said product images.

- 15 In a third aspect of the present invention, there is provided a system with a mobile radio telephone and an image recording device, designed so that images taken with said image recording device can be packaged in messages that can be sent by the mobile telephone in a mobile radio network, wherein the mobile radio telephone links the recorded image data with a user identification procured from the personal identification module in said mobile radio telephone
- 20 before sending it in said mobile radio network.

The mobile radio telephone 3 can register into a mobile radio network 4 having a server 5. The server 5 comprises a user database 50, in which attributes of a plurality of mobile users in the mobile radio network 4 are stored, as well as a product database 51. The user attributes 50  
5 comprise preferably the address, for example the mobile user's billing address and/or the delivery address for the delivery of the ordered item, as well as his order preferences, as will be explained further below.

The server 5 can for example be administered by the mobile radio network's operator, who usually has a reliable mobile user database from  
10 which the mobile user attributes in the user database 50 can be procured.

The reference number 6 shows a billing center with which ordered products are billed. Depending on the embodiment, the billing center is also integrated in the server 5 or connected with it. The billing center 6 can for example also be used to bill to the mobile radio users the  
15 telephone connections over the network.

The server 6 is connected with the providers 8 over a telecommunication network 7, for example over the public telephone network, over the ISDN, over a mobile radio network, over a private network, over the Internet or also over the normal post. Over the network  
20 7, the server 5 can send messages to product providers, for example as e-mail, fax, by normal post, through a delivery firm etc. The product provider can then deliver the ordered product over a reverse channel (not represented) to the indicated address, for example and depending on the product as e-mail, as WAP, USSD or SMS message, by normal post, through  
25 a delivery firm etc. The data transmission between the server 5 and the providers 8 is preferably secured with TTP (Trusted Third Party).

The method according to the invention will now be described in closer detail.

A mobile radio user wishing to order a product 1 with the  
30 method according to the invention first has to record an image of this

product with the image recording device 2 and transmit it into the mobile radio telephone over the interface 20. Depending on the kind of product and on the provider, the image can represent the entire product or only in identifying component of the product, for example a serial number or an information sticker on the product. The image can also be recorded from a catalog or an advertisement or be downloaded directly in the Internet or as DAB respectively DVB accompanying data.

The digitally recorded image is then preferably compressed, for example according to the JPEG, GIF, TIF or PDF format, and transmitted over said interface 20 to the mobile radio telephone 20. In a variant embodiment, the image data can also be compressed in the mobile radio telephone 3.

The image data is then stored in a storage area of the mobile radio telephone and can preferably be reproduced with its image reproduction means, for example with a LCD (Liquid Crystal Display) or VRD (Virtual Retina Display) image reproduction device, so that the mobile user can check the picture taken, possibly edit it and possibly designate a part with a pointer.

The order message 31 is prepared with the data processing means in the mobile radio telephone. The order message comprises the preferably compressed image data as well as a user identification, procured preferably from the identification module 30, for example the mobile user's IMSI (International Mobile Subscriber Identity). In addition, the mobile user can preferably enter his preferences with the order program, for example the desired billing method, the delivery mode, the delivery address, the ordered quantity etc. These preference indications are linked with the order message. At least certain preferences of the mobile user are preferably stored in a storage area of the identification module 30, so that they need not be entered again with each new order.

If the mobile user confirms with the order program that he wishes to order the recorded product, the order message 31 is sent through

the mobile radio network 4 to the server 5. The order message can for example consist of a plurality of SMS messages, as described in patent EP689368. In a preferred embodiment, the order message, however, consists of a plurality of packages transmitted for example according to WAP, GPRS, EDGE, UMTS or TCP-IP. The order message can however also be transmitted as data over the voice channel, for example with a modem or in a UMTS network. The order message is preferably encrypted with the public key of the server 5 and signed with a certificate stored in the identification module 30, so that the server 5 can verify the message's origin and authenticity. The denial of the order can also be prevented through a clock stamp service.

The server 5 receives the order message and first verifies the mobile user's signature. If the message's authenticity and origin can be determined with this signature, the order message is decrypted with the server's private key and the image data decompressed.

A module in the server 5 then compares the decompressed image data with product images in the product database 51. This comparison is performed for example with a specially trained neuronal network or with other known image comparing algorithms, such as are used for example by image search engines in the Internet.

The product database 51 can preferably comprise several images of each offered product, so that the product comparison is also possible if very different pictures are sent. The product images are preferably provided by the providers 8 themselves and stored in the database 51, the used storage area being rented to the providers by the operator of the server 5.

If said module in the server finds a product image in the product database that could correspond with the received image data, it preferably sends a message, for example an SMS, USSD, e-mail, WAP or voice message to the mobile user, in which the found product identification, for example the name or a description of the found product, is indicated. The mobile

user is then invited to confirm the result of this comparison. In the absence of any confirmation, the server tries to find another appropriate product in the product database, until the mobile user confirms a found product.

5 If the server does not find in the product database 51 any image that could correspond to the received image data and that is confirmed by the mobile user, an error message is preferably sent to the mobile user. The mobile user then has the possibility of entering further indications, for example a product code, a product name, the provider identification etc. in order to facilitate the comparison process.

10 In a preferred embodiment, the product database 51 can additionally contain indications about the available quantities of the offered product. This quantity is then automatically decremented with every order.

15 If a product is found in the product database 51 that corresponds to the received image data and that is confirmed by the mobile user, the server 5 tries to obtain additional mobile user attributes from the user database 50. The database 50 preferably contains for each mobile user identified with his mobile user identification, for example his IMSI or MSISDN, all attributes that allow the provider to identify completely the  
20 mobile user and to fully carry out the order. For example, the recorded mobile user attributes can comprise the mobile user's billing and delivery address as well as his user preferences, for example his preferred correspondence language, the desired delivery mode and billing method etc., insofar as these attributes are not indicated in the message 31.

25 These additional mobile user specific attributes are then linked with the product identification desired by the provider, for example with a product serial number, and a message 52 is sent over the telecommunication network 7 to the providers indicated in the product database 51.

The message 52 is preferably signed electronically and encrypted by the server 5, so that the recipient provider 8 can verify its authenticity and origin. In addition, a copy of the relevant elements is preferably sent to the billing center 6 so that the order can be billed to the mobile user.

- 5 Depending on the mobile user preferences, the ordered product can preferably be billed like connections in said mobile radio network, for example by debiting a prepaid account in the mobile user's identification module 30 or with the telephone bill.

The provider who receives an order message in this manner can  
 10 then deliver the ordered product or the desired information over a suitable delivery channel. If the ordered item can be digitized, it can be transmitted over an electronic channel, for example as e-mail or over FTP services through the Internet or as SMS or USSD over the mobile radio network 4. In this manner, user software, musical data, for example encoded in MP3  
 15 format, video data, for example encoded in an MPEG format, etc., a picture of whose cover has been transmitted, can for example be delivered. In addition, the provider 1 can preferably verify whether the terminal can receive the format of the electronic data and whether he still has sufficient storage capacity. For this test, JINI functions can for example be used.

20 With the method according to the invention, it is ,however, also possible to order products that can only be delivered by post or by a delivery firm.

Apart from the earning opportunities through the offering of services from the described method, it is also possible to commercialize a  
 25 server 5, in particular the software programs for such a server, as well as systems with an image recording device 2 and a specially programmed mobile radio telephone 3. The method according to the invention can however also be used with normal terminals, for example with a conventional camera 2 and a conventional mobile radio telephone 3 having  
 30 a suitable interface at close range, for example a Bluetooth interface 20 over which they can communicate image data. In this case, the mobile radio telephone only needs a program with which image data can be

compressed, encrypted, signed and linked with mobile user attributes. This program can for example be commercialized as an applet and downloaded over the mobile radio network 4.

**The claims defining the invention are as follows:**

1. Method with which a mobile user in a mobile network can order products, including:

5 transmitting an order message to a server in said mobile radio network;

sending a message containing an identification of the ordered product and of the ordering mobile user to a product provider;

recording an image corresponding to the product to be ordered;

10 linking the image data with a personal identification of the mobile user in said order message; and

comparing in said server said image data with images stored in a product database, each of said image in said database being linked with an identification of the product provider to which said message is sent.

15 2. Method according to the preceding claim, wherein said image is recorded with a camera connected with a mobile radio telephone.

20 3. Method according to claim 1, wherein said image is recorded with a scanner connected with a mobile radio telephone .

4. Method according to the preceding claim, wherein said image is an image of a two-dimensional identified part of said product.

25 5. Method according to claim 1, wherein said image is received by a radio receiver.

30 6. Method according to any one of the preceding claims, wherein said image is recorded with an image recording device connected with a mobile radio telephone over a contactless interface at close range.

7. Method according to any one of the preceding claims, wherein said identification of the mobile user is the IMSI.

8. Method according to any one of the preceding claims, wherein said order message is a WAP message.

9. Method according to any one of the preceding claims, wherein  
5 said mobile radio network is a UMTS network and in that said order message is transmitted by establishing a connection in the data channel.

10. Method according to any one of the preceding claims, wherein  
10 said order message is signed electronically by said mobile radio user.

11. Method according to any one of the preceding claims, wherein  
said identification of the product provider contains his address in a  
telecommunication network.

12. Method according to the preceding claim, wherein said  
15 telecommunication network is a TCP-IP network.

13. Method according to claim 11, wherein said telecommunication  
network is the public telecommunication network.  
20

14. Method according to any one of the preceding claims, wherein  
said server comprises a user database in which additional mobile user  
attributes are stored and in that at least certain of these additional attributes are  
forwarded to said product provider.

25 15. Method according to the preceding claim, wherein said user  
attributes include the delivery address of the ordering mobile user.

16. Method according to any one of the claims 14 or 15, wherein said  
30 additional attributes include the billing address of the ordering mobile user.

17. Method according to any one of the preceding claims, wherein the  
ordered product is billed by the operator of said server.

18. Method according to the preceding claim, wherein said operator of said server is also the operator of said mobile radio network and in that the ordered product is billed like connections in said mobile radio network.

5 19. Method according to the preceding claim, wherein the ordered product is billed by debiting a prepaid account in the identification module of the mobile user.

10 20. Method according to claim 18, the ordered product is billed with the telephone bill.

21. Server capable of being connected in a mobile radio network so that mobile users can send messages to it, having the following characteristics:  
 15 a product database in which product images are stored,  
 a user database in which mobile user specific attributes are stored, and  
 a module for comparing image data in the order messages received from mobile users with said product images.

20 22. Server according to the preceding claim, wherein said module is a software module.

23. Server according to claim 21 or 22, wherein said module uses a neuronal network.

25 24. Server according to claim 21 or 22, wherein it is designed so as to be able to decompress compressed image data in received messages.

25. Server according to claim 21 or 22, wherein it is designed so as to be able to decrypt image data in received order messages.

30

26. System with a mobile radio telephone and an image recording device, designed so that images taken with said image recording device can be packaged in messages that can be sent by the mobile telephone in a mobile radio network, wherein the mobile radio telephone links the recorded image data with a user identification procured from the personal identification module in said mobile radio telephone before sending it in said mobile radio network.

27. System according to the preceding claim, wherein said image recording device and said mobile radio telephone are connected over a contactless interface at close range.

28. Method with which a mobile user in a mobile network can order products substantially as herein described with reference to the accompanying drawings.

29. Server capable of being connected in a mobile radio network so that mobile users can send messages to it substantially as herein described with reference to the accompanying drawings.

30. System with a mobile radio telephone and an image recording device designed so that images taken with said image recording device can be packaged in messages that can be sent by the mobile telephone in a mobile radio network substantially as herein described with reference to the accompanying drawings.

DATED: 19 December, 2002

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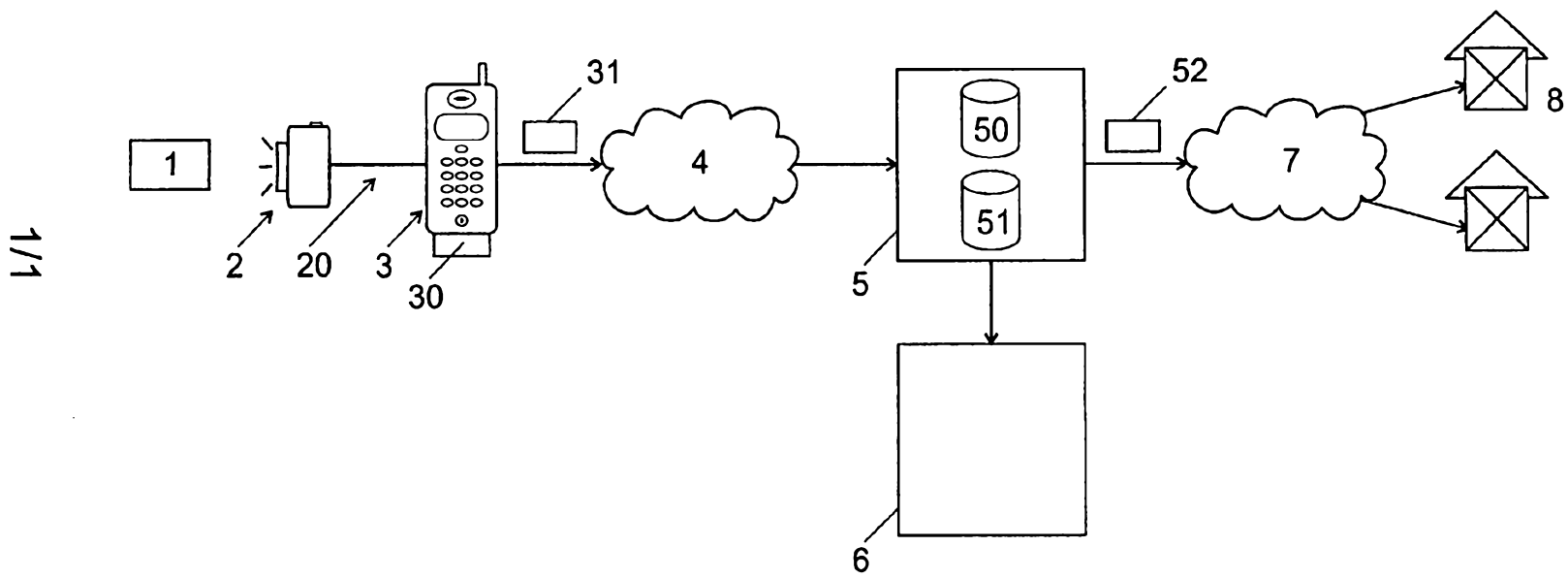


Fig. 1