



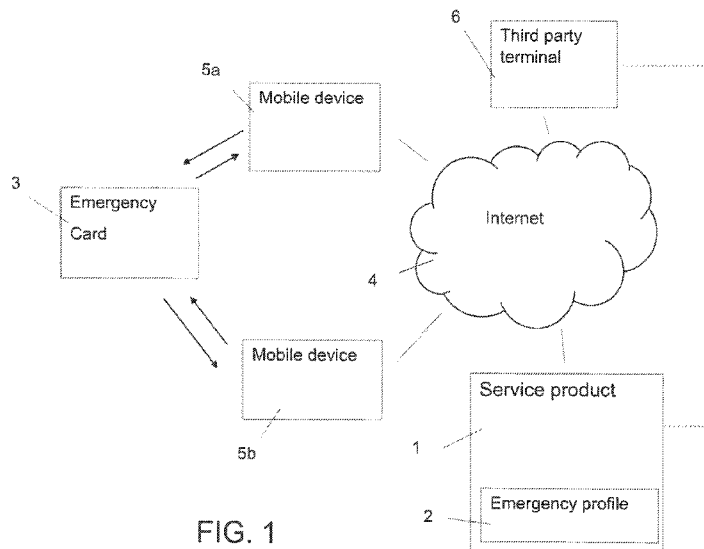
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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) Title: METHOD, SYSTEM AND SERVICE PRODUCT FOR CONTROLLING EMERGENCY SITUATIONS



(57) Abstract: The method of the invention is performed in a telecommunication network and is intended for controlling emergency situations by means of a service product in a server of the telecommunications network. The service product holds emergency profiles for persons. In the method, a mobile device in the telecommunications network connects to an emergency profile of a person held by the service. The connecting automatically causes an indication an emergency situation in the emergency profile of the person and a notification of the emergency situation to a third party terminal. Connecting by scanning a web link or a QR code.



# METHOD, SYSTEM AND SERVICE PRODUCT FOR CONTROLLING EMERGENCY SITUATIONS

## TECHNICAL FIELD

- 5 The invention is concerned with a method, system and service product for controlling emergency situations in a telecommunications network.

## BACKGROUND

Emergency communication and notification systems are needed for supporting  
10 communication of emergency messages between individuals and groups of individuals in case of emergency situations.

Computer-based systems exist to optimize communications during emergencies. Automation of communication and fast message delivery capabilities are desirable in emergency situations. Inadequate emergency communications capabilities can have  
15 serious consequences.

Today, modern communication tools, such as smartphones and Global Positioning Service (GPS), are changing the way in which people are notified about emergencies. Smartphones may have geolocation to be used as part of the solutions.

The following patents are presented as prior art for such solutions.

- 20 EP patent 1 293 947 B1 discloses an emergency notification system which can perform emergency notification by using a normal cellular telephone terminal instead of a dedicated terminal without requiring communication using a voice. In this solution, the notification of an emergency is performed by identifying the kind of emergency notification on the display screen of the cellular telephone terminal that shows a menu for the identification. The cellular  
25 telephone terminal may include position measuring means for demanding transmission of position information upon receipt of the emergency notification from the cellular telephone terminal.

In a computer program product presented by US patent 7,627,092B2, provisioned telephone numbers and e-mail addresses receives a notification of an emergency upon an emergency communication that triggers a service alert that automatically notifies a parent, adult child, neighbor or colleague, when a subscriber places a 9-1-1 call, without needing to make an  
5 additional call.

US patent 7,574,194 B2 discloses an emergency call system and a control method thereof for notifying a third party of an emergency situation using a mobile communication terminal. When recognizing the emergency situation of a registered subscriber, the management  
10 server notifies an emergency reception center of the emergency situation.

A growing number of people have elderly parents or family members with physical restrictions living alone. For these people it is important to be notified when their family members are in need or they have called an emergency call. One service that has attempted to address this desire is the family 911 service offered by Lucent Technologies Inc. After a  
15 911 call has been placed, selected telephone numbers will be notified. This solution, however, requires that a 911 call actually has been made.

A service provided by MedicAlert Foundation has a personalized emergency wallet card which contains quick reference to vital medical information and primary emergency contacts. The card has a number which can be called to get information.  
20 When this number is called, information of how to proceed in an emergency situation is given. MedicAlert Foundation also has a service to call the emergency contacts to notify them about the situation. This solution in turn is slow and requires that people can be reached.

The object of this invention is a quick and automated solution, wherein family members or  
25 the like are quickly and reliably notified in emergency situations.

## SUMMARY OF THE INVENTION

The method of the invention is performed in a telecommunication network and is intended for controlling emergency situations by means of a service product in a server of the  
30 telecommunications network. The service product holds emergency profiles for persons. In

the method, a mobile device in the telecommunications network connects to an emergency profile of a person held by the service. The connecting automatically causes an indication an emergency situation in the emergency profile of the person and a notification of the emergency situation to a third party terminal.

5

The system of the invention comprises a service product in a server of a telecommunications product for controlling emergency situations. The service product holds emergency profiles for persons and comprises information of one or more emergency situations. The service product also has means for noting the opening of an emergency profile as an indication of an emergency situation, and means for automatically notifying a third party defined in advance after an opening of the emergency profile.

10

The invention is also concerned with the service product itself.

The preferable embodiments of the invention have the features of the sub claims.

15

The emergency profile in the service product of the system of the invention preferably contains additional information of the emergency situation. Thus, in a preferable embodiment of the invention, more information of the emergency situation can be added in the emergency profile. Such additional information can consist of the location of the emergency situation as well as a timestamp determined on the basis of the location of the mobile device. Furthermore, medical information of the emergency situation can be added by a user who is authenticated to add such information, usually a medical professional. Still further information might consist of hospital or ambulance information or information of actions performed due to the emergency situation.

20

The notification to a third party is performed by informing an In Case of Emergency, ICE, telephone number, or a telephone number or e-mail address of one or more persons, relatives or family members, who are registered or authenticated in connection with the emergency profile of the actual person to be notified. The telephone number or e-mail address to which the notification is sent is to a mobile device or computer that also belongs to the system of the invention.

30

The service product preferably has a list of persons that are partially or fully authenticated to access defined emergency profiles in the service product and a list of telephone numbers and/or e-mail addresses to be notified in an emergency situation individually for each emergency profile.

- 5 The invention enables a quick and automated solution by means of which family members or the like can quickly and reliably be kept updated and notified in emergency situations of people they care of. The solution does not require the person in need to make any calls, which is a great advantage since such person might have encountered an accident, can not find home or is a victim of an attack of disease, have fainted, is unconscious or otherwise  
10 unable to call anyone, e.g. because of dementia or Alzheimer's disease.

In the following, the invention is described more in detail by referring to some example embodiments by means of figures. The invention is not restricted to the details of these embodiments.

## 15 FIGURES

Figure 1 is an example of an architecture view of a telecommunications network, wherein the invention can be implemented

Figure 2 is an example of an emergency profile wherein information of an emergency situation appear

- 20 Figure 3 is a signal diagram of an embodiment of the method of the invention

## DETAILED DESCRIPTION

- Figure 1 is an example of an architecture view of a telecommunications network, wherein the invention can be implemented. The system of the invention comprises a service product  
25 in a server 1, the service product constituting of a web page holding one or more emergency profiles 2 for persons, which profiles comprise healthy data of the persons and eventually information of emergency situations.

Healthy data might consist of e.g. data of the person's age, blood type, gender, medication, vaccinations, allergies, diseases, etc.

The information of an emergency situation gives according to the invention information of acute and current situations and might consist of a note of that there is an on-going emergency situation. In addition to the indication of an existing emergency situation the emergency profile might contain the location of the emergency situation as well as a timestamp telling when the emergency situation occurred. The current position of the mobile device used for the scanning can be localized via multilateration or by the Global Positioning System, GPS. The location information in the emergency profile is either manually fed or is noted automatically by means of the position of the mobile device used for the scanning.

The device will usually ask if the location can be shared and if agreed the location is posted to the service and logged with a timestamp. In an advantageous embodiment, preferably when the user still has the phone running, the location will continuously be posted to the service so that this data can later be used for visualization or for other tasks. Emergency personnel can e.g. afterwards track and analyze the movement from where they found the patient to the hospital.

Still further, the emergency profile might contain medical information of the emergency situation if the emergency situation is an accident, such as the condition of the person, instructions for treatment, possible measurements done, like temperature, blood pressure, etc.

The telecommunications network 4 is usually the Internet and the emergency profile of the person can be opened through an internet link by using a smart phone, a laptop, a Personal Computer, PC, or other computer belonging to the system of the invention.

The invention is very useful if the person in need of the emergency situation has an emergency card 3 that has a code or link to her or his emergency profile. Then the emergency profile of the person can be opened by scanning the link or code on the emergency card 3 by using a mobile device 5a, such as a laptop or smart phone.

The code can e.g. be a barcode, such as a Quick-Response Code, QR Code. QR code is the trademark for a type of matrix barcode or two-dimensional barcode. A barcode is a machine-readable optical label that contains information about the item to which it is attached.

The internet link can e.g. be a Uniform Resource Locator (URL), also known as an internet or web address, and be written on the address file of a browser interface by using a smart phone or Personal Computer (PC).

5 If the opening of the emergency profile can be performed by a user of a mobile device 5a, who is not authenticated to the service or is authenticated to use only a part of the service, only a part of the information in the emergency profile can be accessed. When the opening of the emergency profile is performed by a user of a mobile device 5b, who is authenticated to the service, all information in the emergency profile can be accessed.

10 The system of the invention has at least one further device or terminal 6 held by a third party for receiving an emergency notification to a telephone number and/or e-mail address.

Figure 2 is an example of an emergency profile wherein information of an emergency situation in the form of e.g. an accident appear.

15 The information of an emergency situation gives according to the invention information of acute and current situations and primarily consists of a note N of that there is an on-going emergency situation. In addition to the indication of an existing emergency situation, the emergency profile might contain the location L of the emergency situation as well as a timestamp T telling when the emergency situation occurred. In some embodiments, the location information is continuously updated in the emergency profile. Still further, the emergency profile might contain medical information M of the emergency situation, such as  
20 the condition of the person, instructions for treatment, possible measurements done, like temperature, blood pressure, etc.

Still further information might consist of hospital or ambulance information or information of actions performed due to the emergency situation (not shown).

25 The notification to a third party is performed by informing an In Case of Emergency, ICE, telephone number, or a telephone number or e-mail address of one or more persons, relatives or family members, who are registered in connection with the emergency profile of the actual person. The emergency profile therefore preferably has a list of persons R that are partially or fully authenticated to access each or selected emergency profile in the  
30 service product and a list E of telephone numbers and/or e-mail addresses to be notified in an emergency situation individually for each emergency profile. Authenticated persons have

further access to healthy information H in the emergency profile. his healthy information can e.g. consist of the physical condition of the person, medication, allergies, diseases, vaccinations, operations, etc.

Figure 3 is a signal diagram of an embodiment of the method of the invention. The invention  
5 enables a quick and automated solution by means of which emergency situations can be controlled and followed up.

In this example, it is assumed that a person has been in an accident and is in the need of help unable to move.

The person carries an emergency card with a link to an emergency profile of the person held  
10 by a service product provided by a service provider through the Internet in the form of a web page. The emergency profile contains information about the person's health e.g. in accordance with the example of figure 2.

Any mobile device providing wireless internet access can be used to scan the emergency card, which is performed by signals 1 and 2 of figure 3.

15 The scanning and opening might be done with a mobile device belonging to an outside user who happens to find the person in need or some other unauthenticated person, whereby the mobile device necessarily is not identified for location follow-up.

If the scanning and opening is additionally or solely performed with a mobile device belonging to an authenticated user, the mobile device is identified for location follow-up if  
20 the authenticated user does not hinder this function in the emergency profile.

The scanned link is used to open said emergency profile held by a service product as a web page in a server connected to the Internet. The web page can after opening be seen on the display of the screen of the mobile device in accordance with signals 3 and 4 of figure 3.

The opening of the emergency profile causes an indication of that an emergency situation  
25 has occurred, which is shown as some type of a note in the emergency profile in accordance with step 5 of figure 3.

An optional step, which is not shown in figure 3, is that the user of the mobile device might add additional information of the emergency situation in the emergency profile.

The opening of the emergency profile also causes sending a notification of the emergency  
30 situation to a third party terminal as indicated by signal 6 of figure 3. In practice, the



notification requires a subscription to both the service and additionally to the notification function.

If the mobile device was identified in connection with signal 3 for location follow-up, such location information will continuously be sent to the web page in the emergency profile as indicated by signal 7 and be updated as indicated by step 8. A map function might be used for this, on which the moves of the mobile device directly can be seen on a screen by an authenticated mobile device, such as the third party terminal, as movement on a map or alternatively by means of other kind of coordinates or address info.

The location of the mobile device can then be followed by the third party terminal by opening the web page with the emergency profile on a display of the screen of the third party terminal as indicated with signals 9 and 10.

The invention is not restricted to the example for figures 1 – 3 and it can successfully be used also for other kind of emergency situations than accidents. In case of emergency situations in connection with fires, the location follow up function becomes extremely important.

20

25

## CLAIMS

1. Method in a telecommunication network for controlling emergency situations by means of a service product in a server (1) of the telecommunications network (4), the service product holding emergency profiles (2) for persons, the method comprising
  - 5 a) a mobile device (5a, 5b) in the telecommunications network connecting to an emergency profile (2) of a person held by the service, and
  - b) the connecting automatically causing an indication of an emergency situation in the emergency profile (2) of the person and a notification of the emergency situation to a third party terminal (6),
- 10 c h a r a c t e r i z e d by the emergency profile (2) of the person being connected by the mobile device (5a, 5b) by scanning a link or code held by said person.
2. Method of claim 1, c h a r a c t e r i z e d in that the connecting to said service takes place by opening, on the display of the mobile device (5a, 5b), an emergency profile (2)
- 15 of a person held by the service.
3. Method of claim 1, c h a r a c t e r i z e d in that the telecommunications network (4) is the Internet and the emergency profile (2) of the person is opened through an internet link by using a smart phone, a laptop, a Personal Computer, PC, or other computer or
- 20 mobile device.
4. Method of claim 1, c h a r a c t e r i z e d in that the link or code scanned in step a) for connecting to the emergency profile (2) is on an emergency card (3) or other item held by said person and the mobile device (5a, 5b) used for the connection is a laptop or
- 25 smart phone.
5. Method of claim 1, c h a r a c t e r i z e d in that the code is a barcode, such as a Quick-Response Code, QR Code.
- 30 6. Method of claim 1, c h a r a c t e r i z e d in that the current position of the mobile device (5a, 5b) used for the scanning is localized via multilateration or by the Global Positioning System, GPS.

7. Method of claim 1, characterized by adding information of the emergency situation in the emergency profile (2).
8. Method of claim 1, further characterized by adding information of the location of the emergency situation as well as a timestamp in the emergency profile (2) on the basis of the location of the mobile device (5a, 5b).
9. Method of claim 1, further characterized in that the information of the location of the mobile device (5a, 5b) is updated continuously in the emergency profile (2) for follow up.
10. Method of claim 1, further characterized in that the information of the location of the mobile device (5a, 5b) is updated continuously and presented as a map function.
11. Method of claim 1, characterized in that the opening of the emergency profile (2) is performed by a user of a mobile device (5a, 5b), who is not authenticated to the service or is authenticated to use only a part of the service, whereby only a part of the information in the emergency profile (2) can be accessed.
12. Method of claim 1, characterized in that the opening of the emergency profile (2) is performed by a user of a mobile device (5a, 5b), who is authenticated to the service, whereby all information in the emergency profile (2) can be accessed.
13. Method of claim 1, further characterized by adding medical information of the emergency situation by a user who is authenticated to add such information.
14. Method of claim 1, characterized in that the notification to a third party is performed by informing an In Case of Emergency, ICE, telephone number, or a telephone number or e-mail address of one or more registered persons, relatives or family members.
15. Method of claim 1, characterized in that the emergency profile (2) is opened by the third party terminal (6) for following up the updated information of the location of the mobile device (5a, 5b).

16. System in a telecommunication network of controlling emergency situations by means of a service product in the telecommunications network (4), the service product in the system
- 5 holding emergency profiles (2) for persons, comprising information of emergency situations, means for noting the opening of an emergency profile (2) as an indication of an emergency situation, and means for automatically notifying a third party (6) defined in advance after an opening
- 10 of the emergency profile (2), c h a r a c t e r i z e d by the system further comprising a link or code to a given emergency profile (2), and a mobile device (5a, 5b) by which the code can be scanned to access a given
- 15 emergency profile (2) of the service product.
17. System of claim 16, c h a r a c t e r i z e d in that that the system further comprises an emergency card (3) or other item with a link or code to a given emergency profile (2).
- 20 18. System of claim 17, c h a r a c t e r i z e d in that that the system further comprises a mobile device (5a, 5b) by which the emergency card or other item can be scanned to access a given emergency profile (2) of the service product.
19. System of claim 16, c h a r a c t e r i z e d in that the information of emergency situations
- 25 comprised in the emergency profile (2) consists of an indication of an emergency situation, the location of the emergency situation and a timestamp.
20. System of claim 16, c h a r a c t e r i z e d in that the information of emergency situations comprised in the emergency profile (2) further consists of medical information of the
- 30 emergency situation.
21. System of claim 16, c h a r a c t e r i z e d in that the service product has a list of persons that are partially or fully authenticated to access one or more given emergency profiles (2) in the service product.

22. System of claim 16, c h a r a c t e r i z e d in that the service product has a list of telephone numbers and/or e-mail addresses to be notified in an emergency situation individually for each emergency profile (2).
- 5 23. System of claim 16, c h a r a c t e r i z e d by comprising at least one further device of a third party (6) for receiving an emergency notification to a telephone numbers and/or e-mail addresses to be notified.
- 10 24. Service product in a telecommunication network (4) for controlling emergency situations, the service product holding emergency profiles (2) for persons, comprising information of emergency situations, having means for noting the opening of an emergency profile (2) as an indication of an emergency situation, and
- 15 having means for automatically notifying a third party (6) defined in advance after an opening of the emergency profile (2), c h a r a c t e r i z e d by the opening being performed via a link or code scanned by a mobile device (5a, 5b) belonging to the telecommunication network (4) and giving access to the emergency
- 20 profile (2).
25. Service product of claim 24, c h a r a c t e r i z e d by the functionality to enable the methods presented in claims 6 - 15.

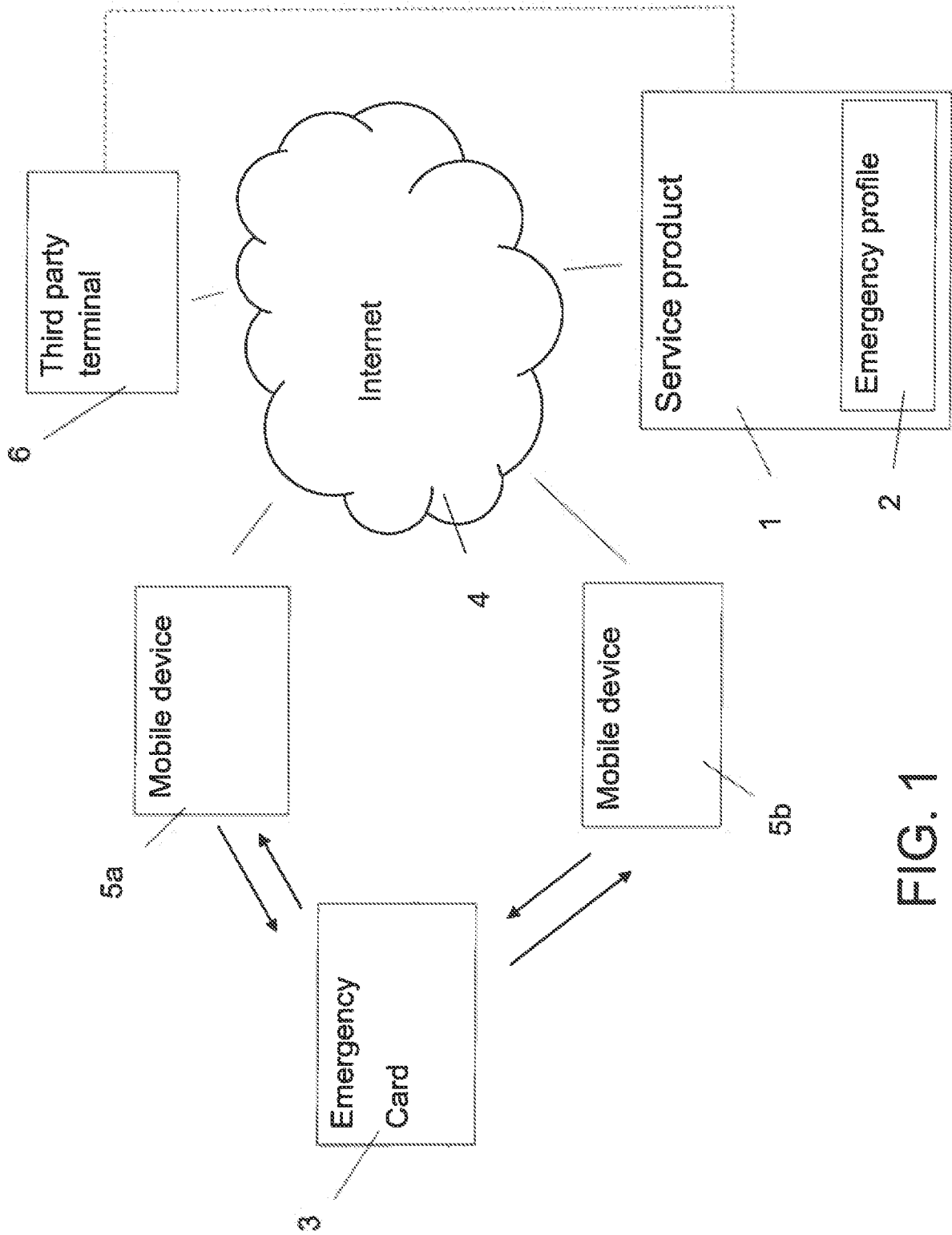


FIG. 1

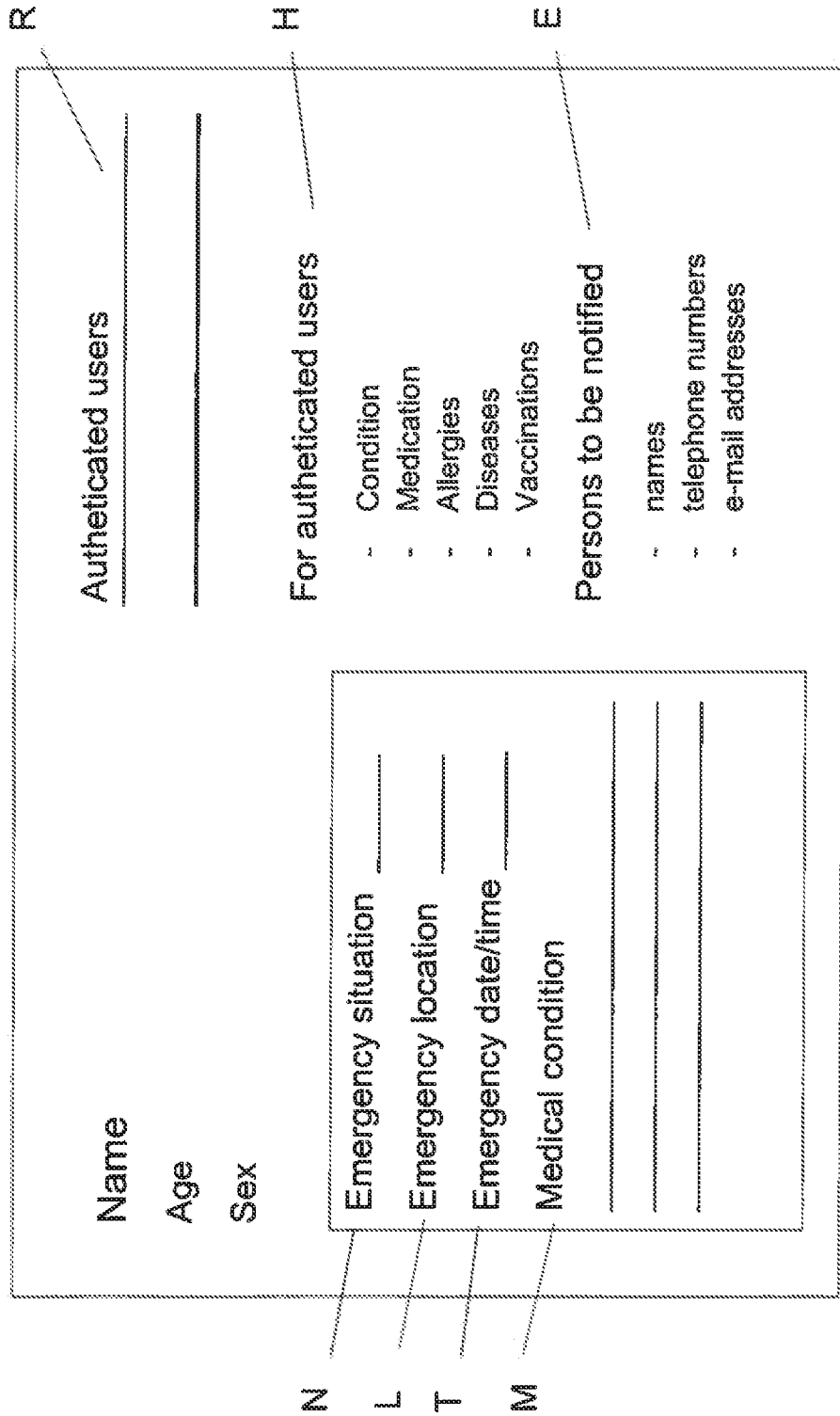


FIG. 2

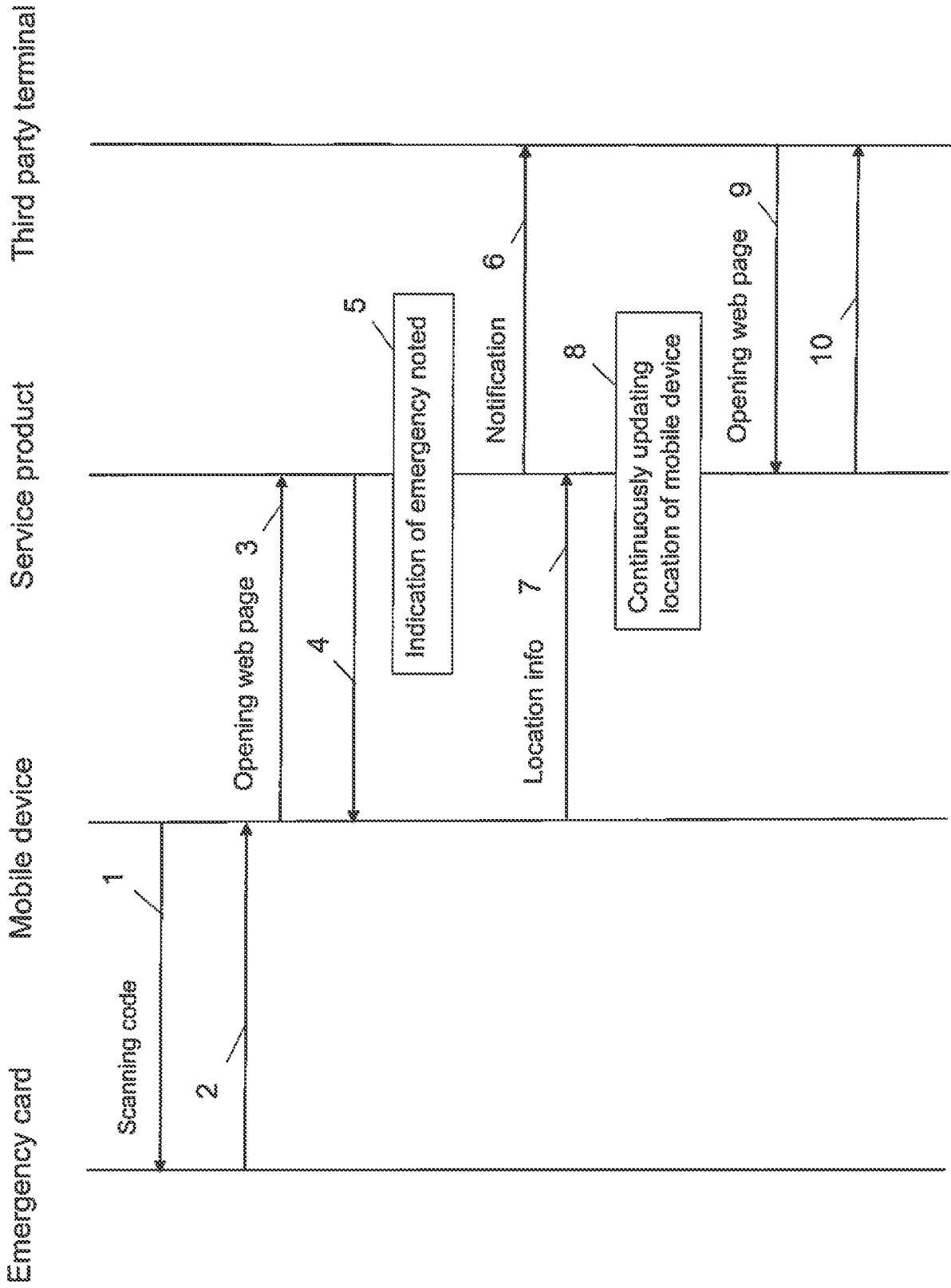


FIG. 3



# INTERNATIONAL SEARCH REPORT

International application No  
PCT/FI2015/050585

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. H04W4/22 ADD. H04M3/51				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) H04W H04M				
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 practicable, search terms used)  EPO-Internal, WPI Data				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 2014/070012 A1 (HUNT BRANDON [US] ET AL) 13 March 2014 (2014-03-13) abstract figures 2-4 paragraph [0002] paragraph [0011] paragraph [0013] - paragraph [0014] paragraph [0024] paragraph [0031] - paragraph [0033] paragraph [0038] - paragraph [0039] ----- -/--	1-25		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.                 </td> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> See patent family annex.                 </td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.			
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">                     * 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                      "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)                      "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                 </td> <td style="width: 50%; border: none;">                     "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                       "&amp;" document member of the same patent family                 </td> </tr> </table>			* 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 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  "&" document member of the same patent family
* 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 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  "&" document member of the same patent family			
Date of the actual completion of the international search  <p style="text-align: center; font-size: 1.2em;">2 December 2015</p>		Date of mailing of the international search report  <p style="text-align: center; font-size: 1.2em;">11/12/2015</p>		
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  <p style="text-align: center; font-size: 1.2em;">Molinari, Fausto</p>		

INTERNATIONAL SEARCH REPORT

International application No  
PCT/FI2015/050585

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>EP 1 265 166 A2 (SYMBOL TECHNOLOGIES INC [US]) 11 December 2002 (2002-12-11)                      abstract                      paragraph [0003] - paragraph [0004]                      paragraph [0016] - paragraph [0017]                      paragraph [0023]                      paragraph [0051]                      paragraph [0136]                      figures 1,3-9</p>	1-25
X	<p>-----                      US 2007/276700 A1 (DAIGLE BRIAN [US] ET AL) 29 November 2007 (2007-11-29)                      abstract                      figures 1,3,5,6,8                      paragraph [0001] - paragraph [0005]                      paragraph [0007]                      paragraph [0019] - paragraph [0022]                      paragraph [0026]; claim 30                      -----</p>	1-25

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Information on patent family members

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