

(51) International Patent Classification:
G06F 15/177 (2006.01)(21) International Application Number:
PCT/US20 12/065461(22) International Filing Date:
16 November 2012 (16.11.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/337,858 27 December 2011 (27.12.2011) US(71) Applicant (for all designated States except US): **PITNEY BOWES INC.** [US/US]; One Elmcroft Road, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT 06926, Stamford, Connecticut 06926 (US).

(72) Inventors; and

(71) Applicants (for US only): **ZHANG, Jun** [CN/US]; 3324 Town Walk Drive, 3324 Town Walk Drive, Hamden, CT 06518, Hamden, Connecticut 06518 (US). **HONG, Zhen-an** [CN/US]; 29 Sylvan Drive, 29 Sylvan Drive, Shelton, CT 06484, Shelton, Connecticut 06484 (US). **ANDREWS, David L** [US/US]; 117 East Street, 117 East Street, South Salem, NY 10590, South Salem, New York 10590 (US). **WU, Yuling** [US/US]; 3 Dickel Road, 3 Dickel Road, Scarsdale, NY 10583, Scarsdale, New York 10583 (US). **CORDERY, Robert A** [US/US]; 246 Barn Hill Road, 246 Barn Hill Road, Monroe, CT 06468, Monroe, Connecticut 06468 (US).(74) Agent: **CUMMINGS, Michael**; 37 Executive Drive, Michael Cummings, c/o Pitney Bowes Inc., 37 Executive Drive, Danbury, CT 06810 Danbury, Connecticut 06810 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, 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, 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.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: METHOD AND SYSTEM FOR ENHANCED HELP INSTRUCTIONS

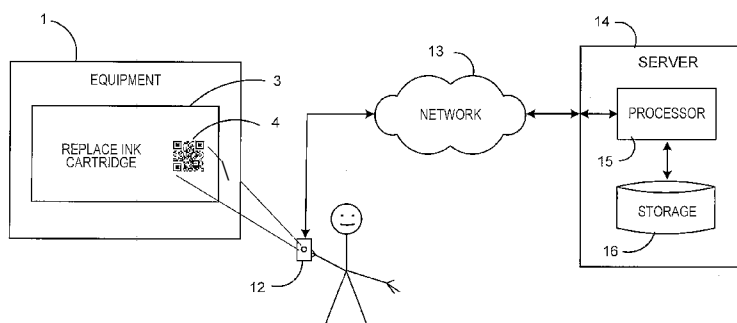


FIG. 6

(57) **Abstract:** A computerized method and system for providing enhanced help messages for equipment operation is described herein. A device having a processor automatically detects an error condition in the device, and determines that the error condition requires operator action. An appropriate message is selected that indicates a required operator action corresponding to the error condition. The message is configured to include a scannable barcode. The scannable barcode includes a website link to a website having more detailed information to assist an operator in performing the operator action. The message is displayed on a screen so that the operator can scan the barcode with his mobile device, and see the more detailed information on how to perform the required operator action. Alternatively, the message is configured as radio frequency data to be transmitted by the equipment using near field communication (NFC) technology to a mobile device having an NFC receiver.

METHOD AND SYSTEM FOR ENHANCED HELP INSTRUCTIONS**Field of the Invention**

[0001] The present invention relates generally to using a mobile device to provide enhanced help instructions to the operator of a piece of equipment.

Background of the Invention

[0002] Machines such as postage meters, printers, copiers usually have small displays to show status or error information pertinent to the equipment. The information that can be displayed is very limited due to the small space. Accordingly, it can be difficult for a user to determine what corrective action needs to be taken in order to correct an error.

Summary of the Invention

[0003] A computerized method and system for providing enhanced help messages for equipment operation is described herein. A device having a processor automatically detects an error condition in the device, and determines that the error condition requires operator action. The device selects a message that indicates a required operator action corresponding to the error condition. The message is configured to include a scannable barcode. The scannable barcode includes a website link to a website having more detailed information to assist an operator in performing the needed operator action. The message is displayed on a screen so that the operator can scan the barcode with his mobile device, and see the more detailed information on how to perform the required operator action. In a preferred embodiment, the scannable barcode is in QR Code format. In an alternative embodiment, the message is configured as a radio frequency message to be

transmitted by the equipment using near field communication (NFC) technology to a mobile device having an NFC receiver.

[0004] The detailed information on the website can include a set of written instructions, graphical diagrams, or a video including instruction pertinent to the operator action. Further, in preferred embodiments, the scannable barcode includes a product code or an error code so that the relevant information for the product or the error can be provided by website.

Brief Description of the Drawings

[0005] Figure 1 depicts an exemplary postage meter device having small display screens.

[0006] Figure 2 shows exemplary error messages that might be displayed on a small display screen of a device.

[0007] Figure 3 depicts an exemplary error message with a corresponding 2D barcode.

[0008] Figure 4 depicts components of a device utilizing the enhanced help instructions.

[0010] Figure 5 shows steps for using a mobile device to get enhanced instructions.

[0011] Figure 6 shows components of a system using the invention.

Detailed Description of the Invention

[0012] Figure 1 shows a typical device 1 that has small display screens 2. This particular device 1 is a postage meter that feeds envelopes across a printing module for printing postage indicia. Exemplary error messages for a device 1 might

include "REPLACE INK CARTRIDGE," "CLEAR FEEDER JAM," or "CHECK ENVELOPE SENSOR," as shown in Figure 2 (reference numbers 2a, 2b, and 2c). For an operator who is not familiar with how the machine works, the operator actions required to correct these errors may not be easy. An operator could consult a manual for the device, but manuals can be misplaced or lost. Also, some manuals are cumbersome to use and finding the relevant information can be difficult.

[0013] An improvement to the existing art is represented in Figure 3. The improvement is the 2D barcode 4 that is displayed on the screen 3 alongside the error message. That 2D barcode 4 includes an encoded website address for a website that includes more detailed instruction on how to carry out the required operator action. Using known software on a smart phone, the operator can scan the barcode 4 to automatically access the website for enhanced instructions. The barcode 4 may also include a product code and/or an error code so that information provided on the website may be further refined to address the particular needs in connection with the error message.

[0014] For purposes of this invention, an "error message" and the corresponding remedial actions should be understood to cover a wide range of activities. For example, the error message could be a low level of consumable supplies, such as paper or ink, and the corresponding operator action could be ordering supplies through a link supplied in the barcode. In another example, scanning the barcode could give the operator access to a complete on-line version of a manual for the equipment. In the instance of a postage meter, the barcode could include a link to account information relating to postal funds and meter usage, and possibly include an interface to request replenishment of postal funds on the equipment.

[0015] Exemplary components for the device 1 are shown in Figure 4. A microprocessor 5 is in operative connection to a screen 3, a memory 6, and a sensor 7. In this embodiment, sensor 7 detects when an error has occurred in the device and communicates with processor 5. The processor 5 accesses memory 6 and determines the nature of the error, and an appropriate error message to display on screen 3. For purposes of this invention, an error should not be limited to a failure of the device, and may also include required maintenance actions. Error messages can be generated without the use of a sensor 7, for example when a maintenance action is triggered based on a certain amount of time passing, or by a certain number of operations being performed by the device.

[0016] Figures 5 and 6 shows the flow of steps for using a smart phone in connection with the enhanced instruction system. As shown in step 8, a user with a mobile device 12 scans the barcode 4 from screen 3 of equipment 1. The smart phone 12 decodes the barcode 4 to derive the website address URL (step 9). The smart phone 12 goes to the URL (step 10) by accessing the website server 14 via the network 13. Preferably the network is the Internet which is accessed through the smart phone's service provider. A processor 15 at the server 14 receives the URL access request from the smart phone 12 and accesses storage 16 to provide the appropriate website information. If barcode includes further information from the barcode, including a product code, or an error code, the server processor 15 can determine further detailed information and instructions from storage 16 to provide in response to the information request.

[0017] In an alternative embodiment, instead of encoding the relevant data in a barcode, the relevant data can be transmitted via a radio frequency (RF) transmitter in conjunction with, or in lieu of, the barcode 4 on screen 3. An

exemplary RF transmitter would use known near field communication (NFC) format, compatible with NFC RF receivers included in existing smart phones. Thus, a mobile device 12 can scan the equipment 1 screen 2, and/or corresponding RF transmitter, and the same process is followed as described above in connection with Figures 5 and 6.

[0018] Although the invention has been described with respect to preferred embodiments thereof, it will be understood by those skilled in the art that the foregoing and various other changes, omissions and deviations in the form and detail thereof may be made without departing from the scope of this invention.

Claims:

1. A computerized method for providing enhanced help messages for equipment operation, the method comprising:

automatically detecting an error condition in a device having a processor;

determining, with the processor, that the error condition requires operator action;

selecting, with the processor, a message indicating operator action corresponding to the error condition;

configuring the message to include a scannable barcode, the scannable barcode being generated to include a website link to a website having more detailed information to assist an operator in performing the operator action; and

displaying the message on a screen.

2. The method of claim 1 further including the step of maintaining a website corresponding to the website link in the scannable barcode, the website having more detailed information relating to the operator action.

3. The method of claim 2 wherein step of providing the scannable barcode further includes providing a product code in the barcode, the product code being utilized by the website to provide information relevant to the product.

4. The method of claim 2 wherein step of providing the scannable barcode further includes providing an error code in the barcode, the error code being utilized by the website to provide information relevant to the error condition.

5. The method of claim 1 further including a step of configuring the message to include an encoded RF message, the encoded RF message to include the website link to the website having more detailed information to assist the operator in performing the operator action; and

transmitting the message with an RF transmitter on the equipment.

6. A computerized system for providing enhanced help messages for equipment operation, the system comprising:

a device having a processor, the processor configured to operate to:

automatically detect an error condition in the device;

determine that the error condition requires operator action;

select an error message to provide to an operator;

configure the message to include a scannable barcode, the scannable barcode being generated to include a website link to a website having more detailed information to assist an operator in performing the operator action; and

a screen coupled to the processor and configured for displaying the message provided by the processor.

7. The system of claim 6 further including a website server including a website corresponding to the website link in the scannable barcode, the website having more detailed information relating to the operator action.

8. The system of claim 7 wherein the more detailed information includes a set of written instructions relating to the operator action.

9. The system of claim 7 wherein the more detailed information includes graphical diagrams pertinent to the operator action.

10. The system of claim 7 wherein the more detailed information includes a video including instruction pertinent to the operator action.

11. The system of claim 7 wherein the processor is further configured to include a product code in the barcode, the website server configured to utilize the product code to provide website information relevant to the product.

12. The system of claim 7 wherein the processor is further configured to include an error code in the barcode, the website server configured to utilize the error code to provide website information relevant to the error condition.

13. The system of claim 6 wherein the processor is further configured to configure the message to include an encoded RF message, the encoded RF message including the website link to the website having more detailed information to assist the operator in performing the operator action; and

a transmitter coupled to the processor and configured for transmitting the message.

14. A computerized method for providing enhanced help messages for equipment operation, the method comprising:

automatically detecting an error condition in a device having a processor;

determining, with the processor, that the error condition requires operator action;

selecting, with the processor, a message indicating operator action corresponding to the error condition;

configuring the message to include an encoded RF message, the encoded RF message being generated to include a website link to a website having more detailed information to assist an operator in performing the operator action; and

transmitting the message with an RF transmitter on the equipment.

15. A computerized system for providing enhanced help messages for equipment operation, the system comprising:

a device having a processor, the processor configured to operate to:

automatically detect an error condition in the device;

determine that the error condition requires operator action;

select an error message to provide to an operator;

configure the message to include an encoded RF message, the encoded RF message being generated to include a website link to a website having more detailed information to assist an operator in performing the operator action; and

a transmitter coupled to the processor and configured for transmitting the message.

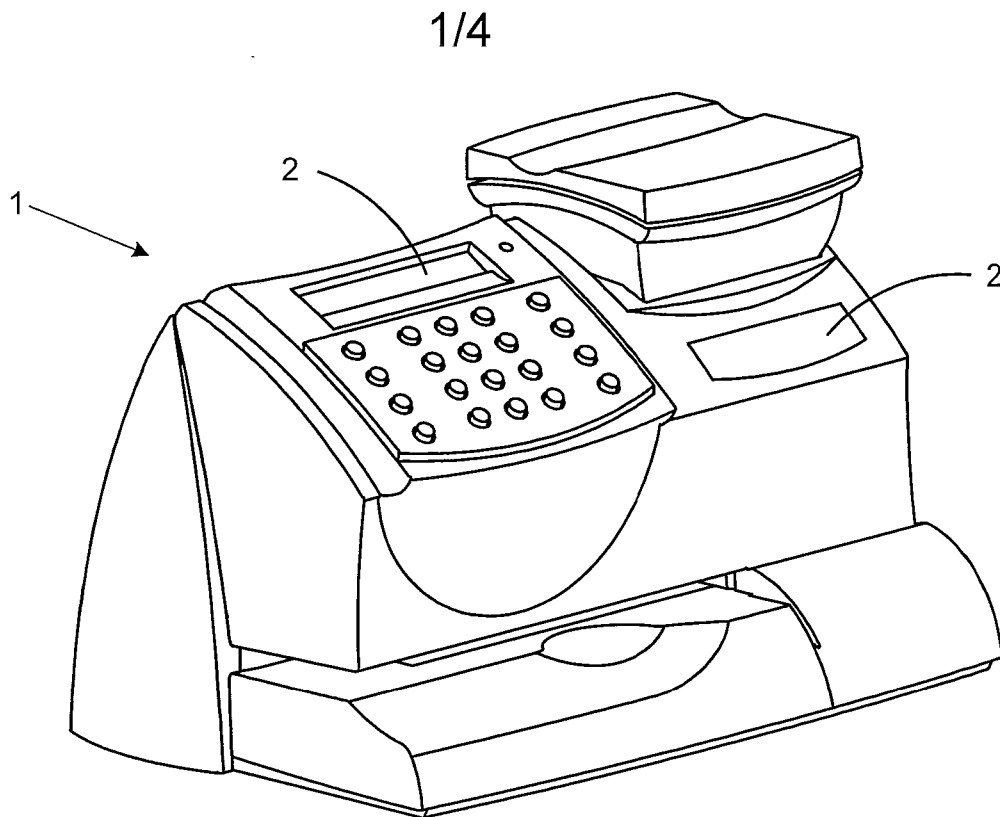


FIG. 1
(PRIOR ART)

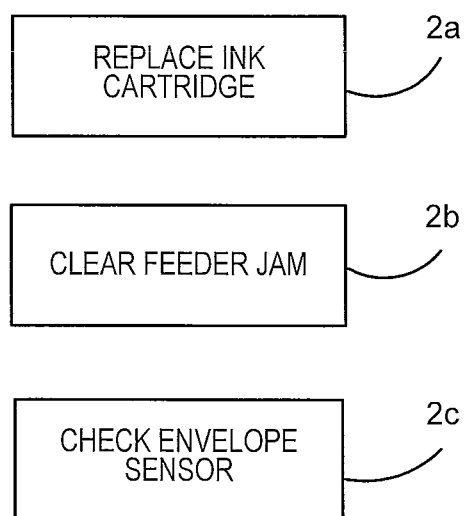
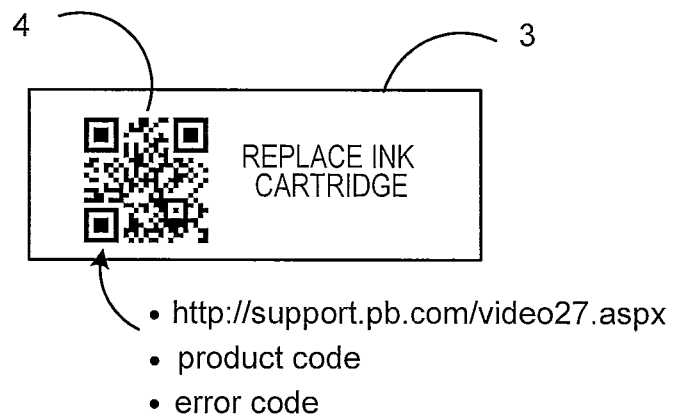
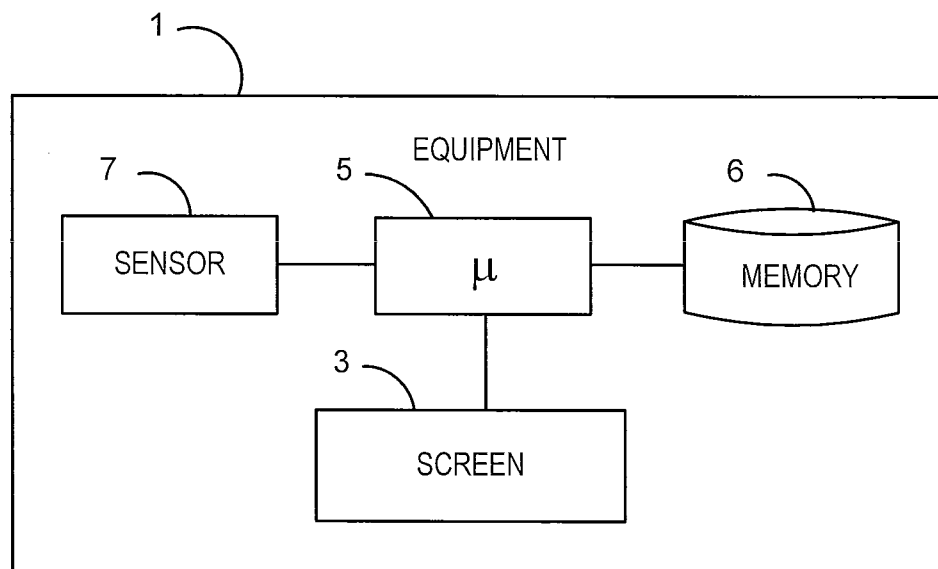
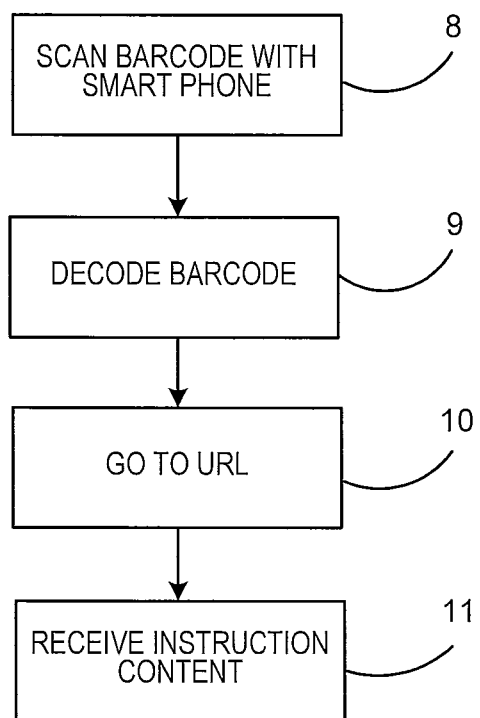


FIG. 2
(PRIOR ART)

2/4

**FIG. 3****FIG. 4**

3/4

**FIG. 5**

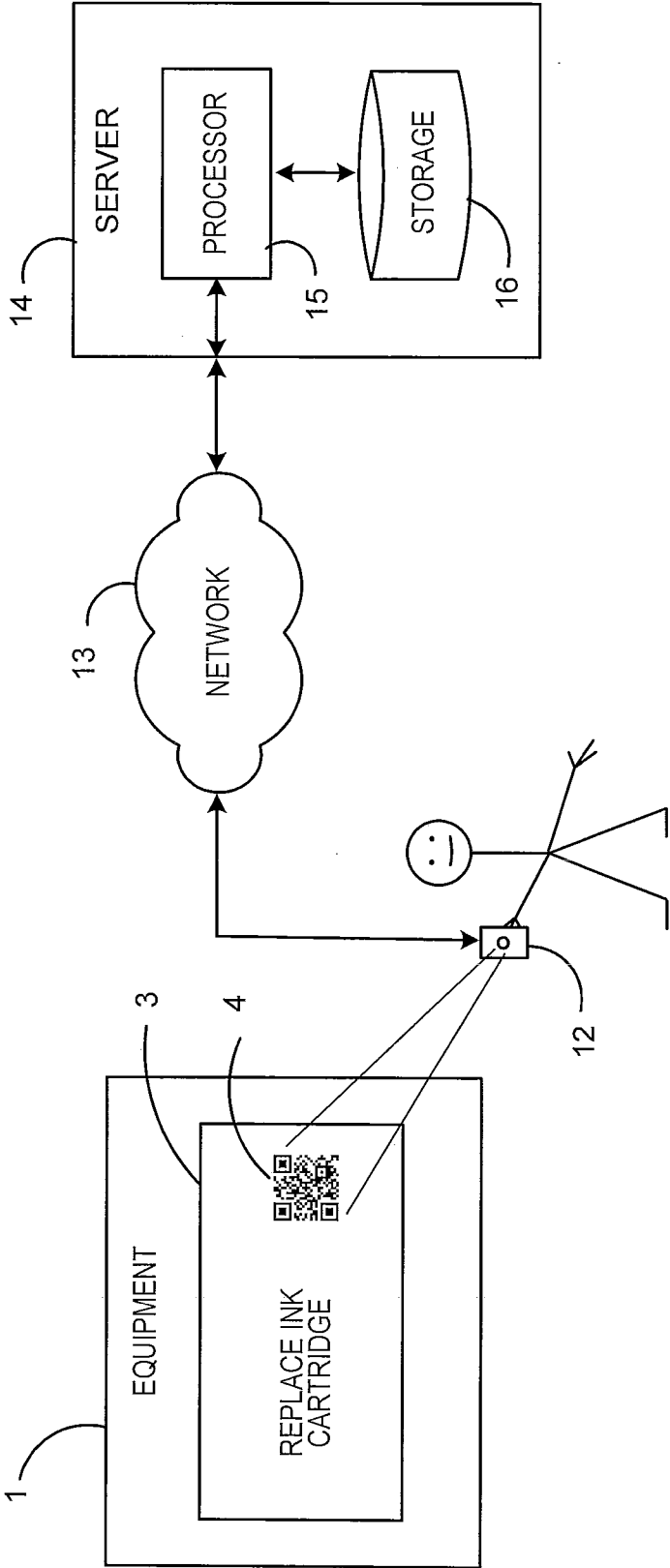


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2012/065461

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 15/177 (2013.01)**USPC - 709/220**

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)

IPC(8) - G06F 15/173; G06F 15/177; H04B 1/38 (2013.01)

USPC - 709/220, 223, 224; 714/004; 358/406,441; 455/574

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

CPC - G06F 15/17306, G06F 15/177, H04B 1/3805, G06Q-010/20 (2013.01)

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

Orbit.com, Google Patents, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0198223 A1 (FUJINAWA et al) 08 September 2005 (08.09.2005) entire document	1-15
Y	LEXMARK, QR Code Generator, Administrator's Guide. October 2011 [retrieved on 2013-01-09], Retrieved from the internet: <URL: http://www.lexmark.com/publications/lexmark_solutions/Lexmark_QRCGenerator_AdminGuide_en.pdf > pages 1-15	1-13
Y	US 2004/0228639 A1 (BADOVINAC et al) 18 November 2004 (18.11.2004) entire document	5, 13-15
A	US 2010/0325490 A1 (ANVIN et al) 23 December 2010 (23.12.2010) entire document	1-15
A	US 2010/0082784 A1 (ROSENBLATT et al) 01 April 2010 (01.04.2010) entire document	1-15
A	US 2005/0078968 A1 (OHTA) 14 April 2005 (14.04.2005) entire document	1-15
A	US 2007/0070398 A1 (OSHIMA) 29 March 2007 (29.03.2007) entire document	1-15



Further documents are listed in the continuation of Box C.



* 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

09 January 2013

Date of mailing of the international search report

05 FEB 2013

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774