



(51) International Patent Classification:

H04M 1/00 (2006.01) H04W 4/00 (2009.01)
H04M 3/00 (2006.01) H04W 24/00 (2009.01)
H04M 11/04 (2006.01)

(21) International Application Number:

PCT/US2012/027890

(22) International Filing Date:

6 March 2012 (06.03.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/450,213 8 March 2011 (08.03.2011) US
61/508,850 18 July 2011 (18.07.2011) US
13/342,064 1 January 2012 (01.01.2012) US

(71) Applicant (for all designated States except US): **BANK OF AMERICA CORPORATION** [US/US]; Mailcode: Nc1-027-20-05, 214 N. Tryon Street, Charlotte, NC 28255 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CALMAN, Matthew, A.** [US/US]; C/o Bank Of America Corporation, Mail Code: Nc1-027-20-05, 214 N. Tryon Street, Char-

lotte, NC 28255 (US). **ROSS, Erik, Stephen** [US/US]; C/o Bank Of America Corporation, Mail Code: Nc1-027-20-05, 214 N. Tryon Street, Charlotte, NC 28255 (US). **HAMILTON, Alfred** [US/US]; C/o Bank Of America Corporation, Mail Code: Nc1-027-20-05, 214 N. Tryon Street, Charlotte, NC 28255 (US).

(74) Agents: **HARRIS, Ryan, P.** et al.; Moore & Van Allen Plc For Bofa, Post Office Box 13706, 430 Davis Drive, Suite 500, Research Triangle Park, NC 27709 (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, 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, 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, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,

[Continued on next page]

(54) Title: ASSESSING ENVIRONMENTAL CHARACTERISTICS IN A VIDEO STREAM CAPTURED BY A MOBILE DEVICE

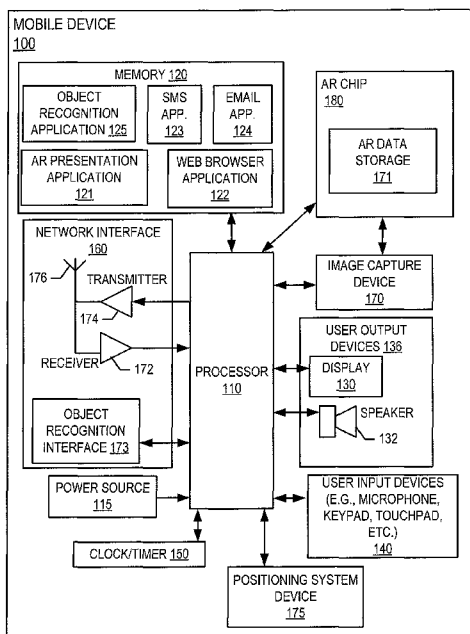


FIG. 1

(57) Abstract: A system for processing a video stream is disclosed. The system includes a processing device configured for analyzing the surrounding environment represented in the video stream for at least one marker that is indicative of an environmental characteristic. At least one marker is identified within the surrounding environment. Once identified, information associated with the environmental characteristic is presented to the user. In one embodiment, the information is presented via AR such that one or more virtual objects are superimposed over the video stream. The virtual objects may be interactive.

WO 2012/122172 A3



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).

— *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))*

Published:

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

(88) Date of publication of the international search report:

28 March 2013

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US12/27890

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H04M 1/00, 3/00, 11/04; H04W 4/00, 24/00 (2012.01) USPC - 455/550.1, 404.1, 414.1, 420, 456.1, 466, 566 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): H04M 1/00, 3/00, 11/04; H04W 4/00, 24/00 (2012.01); USPC: 455/550.1, 404.1, 414.1, 420, 456.1, 466, 566 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched ICP(8): G01W 1/00; H04Q 7/20; H06F 17/30; H06Q 30/00 (2012.01); USPC: 340/540, 601; 455/456.3, 457, 556.1; 705/5, 14.21, 27 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); DialogPRO; IEEE; Google/Google Scholar; video*, picture*, camera*, environment*, surround*, characteristic*, parameter*, condition*		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2008/0268876 A1 (GELFAND, N et al.) October 30, 2008, figure 1, paragraphs [0049], [0062], [0068], [0080], [0081].	1-3, 11-16, 19-21, 29-34, 37-39, 47-52 ----- 4-10, 17, 18, 22-28, 35, 36, 40-46, 53, 54
Y	US 7,155,228 B2 (RAPPAPORT, T et al.) December 26, 2006, column 4, lines 3-48, column 8, lines 45-55.	4-6, 22-24, 40-42
Y	US 2010/0250581 A1 (CHAU, S) September 30, 2010, paragraph [0041].	7, 8-10, 25-28, 43-46
Y	US 7,526,280 B2 (JUNG, J et al.) April 28, 2009, column 6, lines 37-52.	8, 26, 44
Y	US 2009/0204511 A1 (TSANG, J) August 13, 2009, paragraphs [0065], [0066].	17, 18, 35, 36, 53, 54
P, X	US 8,138,930 B1 (HEATH, T) March 20, 2012, abstract, figures 1-6, column 6, line 24 to column 7, line 38.	1-3, 9-16, 19-21, 27-34, 37-39, 45-52
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* 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 04 May 2012 (04.05.2012)		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: Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774