

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
05 April 2018 (05.04.2018)



(10) International Publication Number
WO 2018/064214 A1

(51) International Patent Classification:
G06K 9/00 (2006.01)

(21) International Application Number:
PCT/US2017/053806

(22) International Filing Date:
27 September 2017 (27.09.2017)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
201610873804.1 30 September 2016 (30.09.2016) CN
15/716,056 26 September 2017 (26.09.2017) US

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(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, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, 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.

(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, ST, 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,
KM, ML, MR, NE, SN, TD, TG).

Published:

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

(54) Title: **FACIAL RECOGNITION-BASED AUTHENTICATION**

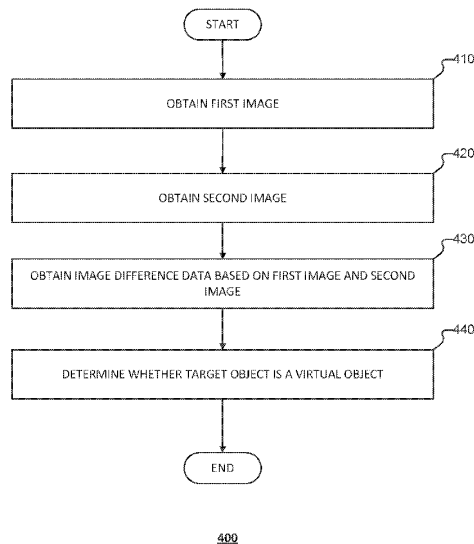


FIG. 4

(57) Abstract: Facial recognition-based authentication comprises ob-
taining a first image of a target object, updating projection informa-
tion associated with a display by a display device, obtaining a second
image of the target object, the second image being an image of the
target object after the projection information is updated, obtaining an
image difference data based at least in part on the first image and the
second image, and determining whether the target object is a virtual
object based at least in part on the image difference data.

WO 2018/064214 A1