



- (51) International Patent Classification:
G06T 5/00 (2006.01) *G06T 13/80* (2011.01)
- (21) International Application Number:
PCT/US2013/041491
- (22) International Filing Date:
17 May 2013 (17.05.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/688,658 18 May 2012 (18.05.2012) US
- (71) Applicant: THOMSON LICENSING [FR/FR]; 1-5 Rue
Jeanne d'Arc, F-92130 Issy les Moulineaux (FR).
- (72) Inventor; and
- (71) Applicant : ROUTHIER, Pierre Hughes [CA/US]; 8700
Pershing Drive, Unit 4225, Los Angeles, California 90293
(US).
- (74) Agents: SHEDD, Robert, D. et al.; Thomson Licensing
LLC, 2 Independence Way, Suite #200, Princeton, New
Jersey 08540 (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))
- 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))

- (88) Date of publication of the international search report:
3 January 2014



WO 2013/173670 A3

(54) Title: PROCESSING PANORAMIC PICTURES

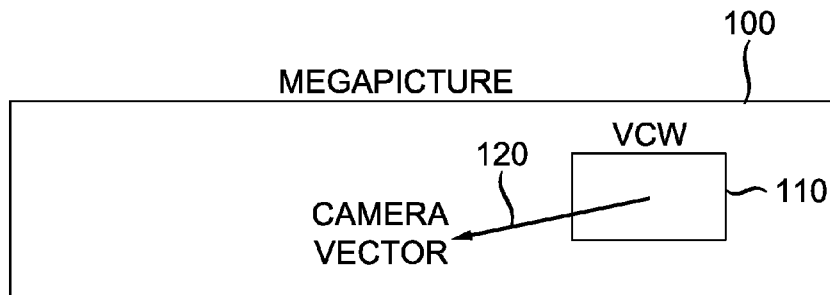


FIG. 1

(57) Abstract: Various implementations relate to processing pictures. In one particular implementation, a cropped picture is accessed. The cropped picture has been cropped, using a virtual camera window, from a picture in a sequence of pictures. Motion blur is generated for a feature in the cropped picture based on a motion of the virtual camera window and a motion of the feature. The generated motion blur is added to the feature in the cropped picture. In another particular implementation, a signal or signal structure includes a picture section for a cropped picture that has been cropped, using a virtual camera window, from a picture in a sequence of pictures. The signal or signal structure also includes a motion section for an indication of a motion of the virtual camera window.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/041491

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06T5/00 G06T13/80
ADD.
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)
G06T H04N

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, BIOSIS, COMPENDEX, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	YASUO ARIKI ET AL: "Automatic Production System of Soccer Sports Video by Digital Camera Work Based on Situation Recognition", PROCEEDINGS / ISM 2006, EIGHTH IEEE INTERNATIONAL SYMPOSIUM ON MULTIMEDIA : 11 - 13 DECEMBER 2006, SAN DIEGO, CA, IEEE COMPUTER SOCIETY, LOS ALAMITOS, CALIF. [U.A.], 1 December 2006 (2006-12-01), pages 851-860, XP031041884, ISBN: 978-0-7695-2746-8 (D1: abstract; section "3.1. Digital shooting"; fig.1-2, 7) ----- -/--	1-16,18, 20-25

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 2 September 2013	Date of mailing of the international search report 18/11/2013
---	--

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 Ellerbrock, Thomas
--	--

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2013/041491

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FOOTE J ET AL: "Region of Interest Extraction and Virtual Camera Control Based on Panoramic Video Capturing", IEEE TRANSACTIONS ON MULTIMEDIA, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 7, no. 5, 1 October 2005 (2005-10-01), pages 981-990, XP011139277, ISSN: 1520-9210, DOI: 10.1109/TMM.2005.854388 abstract	13
A	FENG LIU ET AL: "Video retargeting: automating pan and scan", ACM MULTIMEDIA 2006 & CO-LOCATED WORKSHOPS : OCTOBER 23 - 27, 2006, SANTA BARBARA, CALIFORNIA, USA ; MM '06 ; PROCEEDINGS, ACM PRESS, [NEW YORK, NY], 23 October 2006 (2006-10-23), pages 241-250, XP002605061, DOI: ACM.ORG/10.1145/1180639.1180702 ISBN: 978-1-59593-447-5 the whole document	1-16,18, 20-25
A	PATEL M ET AL: "Combining motion blur and stereo", PROCEEDINGS OF SPIE, SPIE, US, vol. 1669, 1 January 1992 (1992-01-01), pages 71-82, XP008086302, ISSN: 0277-786X, DOI: 10.1117/12.60435 ISBN: 978-0-8194-2198-2 p.71, pgph.1 "1.Introduction"	1-16,18, 20-25
A	US 5 809 219 A (PEARCE ANDREW P [CA] ET AL) 15 September 1998 (1998-09-15) col.1, "2.Related Art"	1-16,18, 20-25
A	US 2010/026827 A1 (KOBAYASHI SEIJI [JP] ET AL) 4 February 2010 (2010-02-04) pgph.4, 18-19, 76-78	1-16,18, 20-25
A	MICHAEL SCHOBERL ET AL: "Modeling of image shutters and motion blur in analog and digital camera systems", IMAGE PROCESSING (ICIP), 2009 16TH IEEE INTERNATIONAL CONFERENCE ON, IEEE, PISCATAWAY, NJ, USA, 7 November 2009 (2009-11-07), pages 3457-3460, XP031628506, ISBN: 978-1-4244-5653-6 p.3458, last pgph of left col. to first pgph. of right col.	1-16,18, 20-25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/041491

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-16, 18, 20-25

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16, 18, 20-25

The first subject matter is related to a method or an apparatus, resp., for accessing a cropped picture with the special technical features are collected as follows

-
the sequence of pictures are from a stationary position ... (from claim 2) and
the motion of the virtual camera window and the motion of the feature are determined as a combined motion... (from claim 4) and
identifying the feature comprises using object recognition or facial recognition (from claim 8) and
scaling the cropped picture before or after adding motion blur (from claims 10, 11)
... the image is a composed/single panoramic image (from claim 13-14,) 18

2. claims: 17, 19

The second subject matter is related to a method or an apparatus, resp., for accessing a cropped picture with the special technical features are collected as follows

-
receiver or a broadcast truck, a cable head-end, a cable hub or at home (from claim 17, 19)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/041491

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 5809219	A	15-09-1998	US 5809219 A	15-09-1998
			US 6211882 B1	03-04-2001

US 2010026827	A1	04-02-2010	CN 101640759 A	03-02-2010
			JP 4674620 B2	20-04-2011
			JP 2010034850 A	12-02-2010
			US 2010026827 A1	04-02-2010
