



(43) International Publication Date
24 January 2013 (24.01.2013)

(51) International Patent Classification:

H04N 7/26 (2006.01) H04N 7/36 (2006.01)
H04N 7/34 (2006.01)

(21) International Application Number:

PCT/US2012/047073

(22) International Filing Date:

17 July 2012 (17.07.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/509,933 20 July 2011 (20.07.2011) US
61/522,136 10 August 2011 (10.08.2011) US
13/550,377 16 July 2012 (16.07.2012) US

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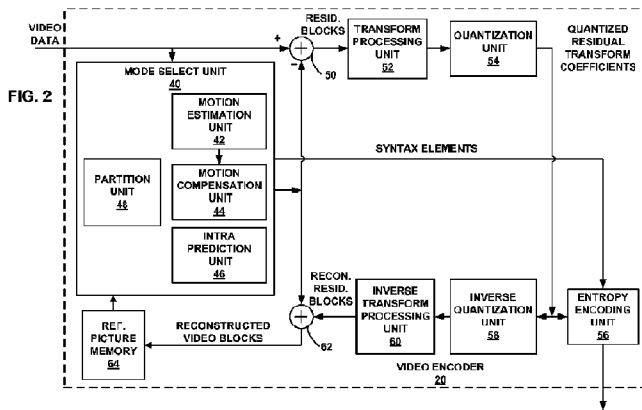
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, 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.

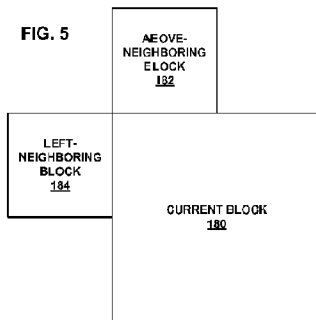
[Continued on next page]

(54) Title: BUFFERING PREDICTION DATA IN VIDEO CODING



(57) Abstract: In an example, aspects of this disclosure relate to a method of coding video data that generally includes determining prediction information for a block of video data, where the block is included in a coded unit of video data and positioned below a top row of above-neighboring blocks in the coded unit, and where the prediction information for the block is based on prediction information from one or more other blocks in the coded unit but not based on prediction information from any of the top row of blocks in the coded unit. The method also generally includes coding the block based on the determined prediction information.

FIG. 5



- (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).
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- Published:**
- *with international search report (Art. 21(3))*
- (88) Date of publication of the international search report:**
16 May 2013

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/047073

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04N7/26 H04N7/34 H04N7/36
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)
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, 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	ZHONG XUE ET AL: "An Automatic Mode Decision Method for Intra Frame Coding and Decoding", 58. MPEG MEETING; 03-12-2001 - 07-12-2001; PATTAYA; (MOTION PICTUREEXPERT GROUP OR ISO/IEC JTC1/SC29/WG11),, no. M7719, 26 November 2001 (2001-11-26), XP030036810, ISSN: 0000-0279 Case 3; page 2 - page 3; figures; table 1 ----- -/--	1-52

Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search

31 January 2013

Date of mailing of the international search report

07/02/2013

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/047073

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KARCZEWICZ: "Analysis and Simplification of Intra Prediction", 4. JVT MEETING; 61. MPEG MEETING; 22-07-2002 - 26-07-2002; KLAGENFURT,AT; (JOINT VIDEO TEAM OF ISO/IEC JTC1/SC29/WG11 AND ITU-T SG.16),, no. JVT-D025, 26 July 2002 (2002-07-26), XP030005299, ISSN: 0000-0441 page 1	1-52
A	----- T-D CHUANG ET AL: "Luma Intra Prediction Mode Coding", 6. JCT-VC MEETING; 97. MPEG MEETING; 14-7-2011 - 22-7-2011; TORINO; (JOINT COLLABORATIVE TEAM ON VIDEO CODING OF ISO/IEC JTC1/SC29/WG11 AND ITU-T SG.16); URL: HTTP://WFTP3.ITU.INT/AV-ARCH/JCTVC-SITE/, no. JCTVC-F062, 15 July 2011 (2011-07-15), XP030009085, the whole document	1-52
A	----- GUO M ET AL: "CE14 Subtest 1: Intra Most Probable Mode Coding for Luma", 20110309, no. JCTVC-E088, 9 March 2011 (2011-03-09), XP030008594, ISSN: 0000-0007 the whole document	1-52
A	----- WENPENG DING ET AL: "Improved Intra Mode Coding by Multiple Mode Candidates", 4. JCT-VC MEETING; 95. MPEG MEETING; 20-1-2011 - 28-1-2011; DAEGU;(JOINT COLLABORATIVE TEAM ON VIDEO CODING OF ISO/IEC JTC1/SC29/WG11AND ITU-T SG.16); URL: HTTP://WFTP3.ITU.INT/AV-ARCH/JCTVC-SITE/, no. JCTVC-D253, 17 January 2011 (2011-01-17), XP030008293, ISSN: 0000-0013 the whole document	1-52
A	----- GLENN VAN WALLENDael ET AL: "Improved intra mode signaling for HEVC", MULTIMEDIA AND EXPO (ICME), 2011 IEEE INTERNATIONAL CONFERENCE ON, IEEE, 11 July 2011 (2011-07-11), pages 1-6, XP031964819, DOI: 10.1109/ICME.2011.6012143 ISBN: 978-1-61284-348-3 the whole document	1-52