

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 May 2008 (02.05.2008)

PCT

(10) International Publication Number
WO 2008/052007 A3

- (51) International Patent Classification:
H04N 7/30 (2006.01)
- (21) International Application Number:
PCT/US2007/082291
- (22) International Filing Date: 23 October 2007 (23.10.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/862,591 23 October 2006 (23.10.2006) US
11/865,915 2 October 2007 (02.10.2007) US
- (71) Applicant (for all designated States except US): **QUALCOMM Incorporated** [US/US]; Attn: International Ip Administration, 5775 Morehouse Drive, San Diego, California 92121 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **REZNIK, Yuriy** [UA/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).
- (74) Agent: **BACHAND, Richard A.**; 5775 Morehouse Drive, San Diego, California 92121 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report

(88) Date of publication of the international search report:
7 August 2008

(54) Title: **SIGNALLING OF MAXIMUM DYNAMIC RANGE OF INVERSE DISCRETE COSINE TRANSFORM**

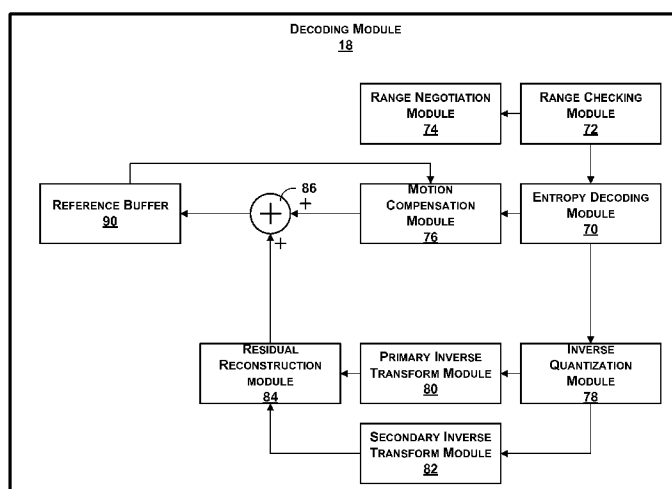


FIG. 3

(57) Abstract: Techniques are described to signal a maximum dynamic range of inverse discrete cosine transform (IDCT) output values that may be produced when a set of encoded media data is decoded. In accordance with these techniques, an encoding device may generate a media file that includes encoded media data associated with a set of one or more video frames. The media file may also include a range indication element that indicates the maximum dynamic range of IDCT output values produced when the encoded media data is decoded. A decoding device that receives the media file may, prior to decoding the encoded media data, use the range indication element to determine whether to decode the encoded media data. For instance, the decoding device may not decode the encoded media data when the decoding device is not capable of producing IDCT output values in the indicated range of IDCT output values.

WO 2008/052007 A3

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/082291

A. CLASSIFICATION OF SUBJECT MATTER INV. H04N7/30		
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 practical, search terms used) EPO-Internal, INSPEC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	YURIY REZNIK: "On clipping and dynamic range of variables in IDCT designs" INTERNATIONAL ORGANISATION FOR STANDARDISATION ISO/IEC JTC1 SC29/WG11 CODING OF MOVING PICTURES AND AUDIO, no. M14004, 24 October 2006 (2006-10-24), XP030042672 the whole document	1-25
A	ZHOU M ET AL: "IDCT output range before clipping in MPEG video coding" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 11, no. 2, December 1997 (1997-12), pages 137-145, XP004100330 ISSN: 0923-5965 the whole document	1-25
-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.		<input checked="" type="checkbox"/> See patent family annex.
* Special categories of cited documents:		
<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>		<p>*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</p> <p>*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</p> <p>*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.</p> <p>*Z* document member of the same patent family</p>
Date of the actual completion of the international search 22 April 2008		Date of mailing of the international search report 02/05/2008
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Wahrenberg, Annika

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/082291

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/196055 A1 (ZHONG SHENG [US] ET AL) 8 September 2005 (2005-09-08) abstract paragraph [0036]	1-25
A	ARIANNE T HINDS: "On IDCT Exactness, Precision, and Drift Problem" INTERNATIONAL ORGANISATION FOR STANDARDISATION ISO/IEC JTC1 SC29/WG11 CODING OF MOVING PICTURES AND AUDIO, no. M13657, 17 July 2006 (2006-07-17), XP030042326 the whole document	1-25
A	"Text of ISO/IEC FDIS 23002-1 Accuracy Requirements for Implementation of Integer-Output 8x8 Inverse Discrete Cosine Transform" INTERNATIONAL ORGANISATION FOR STANDARDISATION ISO/IEC JTC1 SC29/WG11 CODING OF MOVING PICTURES AND AUDIO, no. N7815, 20 January 2006 (2006-01-20), XP030014307 the whole document	1-25
A	US 2002/154693 A1 (DEMOS GARY A [US] ET AL) 24 October 2002 (2002-10-24) abstract	
A	"IEEE STANDARD SPECIFICATIONS FOR THE IMPLEMENTATIONS OF 8X8 INVERSE DISCRETE COSINE TRANSFORM" IEEE STANDARD 1180 - 1990, IEEE, NEW YORK, NY, US, 18 March 1991 (1991-03-18), pages 7-13, XP000563262 the whole document	1-25

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/082291

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005196055	A1	08-09-2005	NONE
US 2002154693	A1	24-10-2002	AU 2002306609 A1 19-09-2002
		CA 2439727 A1	12-09-2002
		CN 1550108 A	24-11-2004
		EP 1380169 A2	14-01-2004
		JP 2004519920 T	02-07-2004
		WO 02071735 A2	12-09-2002