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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number
WO 2004/023821 A1

(51) International Patent Classification[7]: H04N 7/50

(21) International Application Number:
PCT/SG2002/000206

(22) International Filing Date:
5 September 2002 (05.09.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: **LABORATORIES FOR INFORMATION TECHNOLOGY** [SG/SG]; 21 Heng Mui Keng Terrace, Singapore 119613 (SG).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **LI, Zhengguo** [CN/SG]; Block 471, Jurong West Street 41, #08-505, Singapore 640471 (SG). **PAN, Feng** [SG/SG]; Block 362, Clementi Avenue 2, #09-419, Singapore 120362 (SG). **LIM, Keng, Pang** [SG/SG]; Block 226,, Ang Mo Kio Avenue 1, #05-615, Singapore 637722 (SG). **WU, Dajun** [CN/SG]; Block 917, Jurong West Street 91, #02-136, Singapore 640917 (SG). **YU, Rongshan** [CN/SG]; Block 168, Boon Lay Drive, #07-621, Singapore 640168 (SG). **FENG, Genan** [CN/SG]; Block 950, Jurong West Street 91, #04-625, Singapore 640950 (SG). **WANG, Dusheng** [CN/SG]; Block 929, Jurong West Street 92, *06-169, Singapore 640929 (SG).

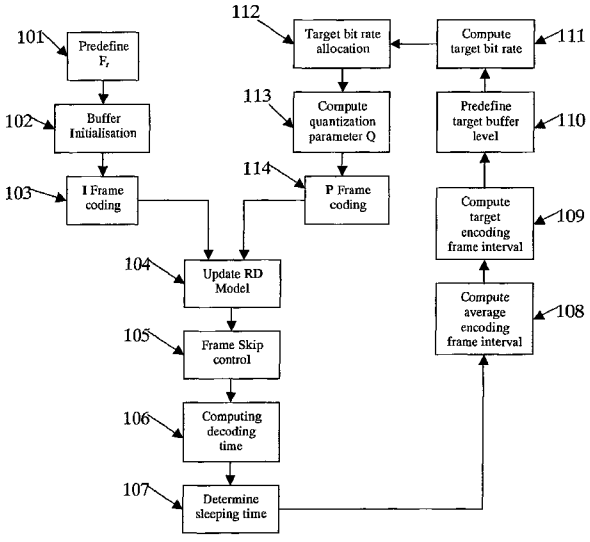
(74) Agent: **BOGSCH, Adam, Attila**; Viering, Jentschura & Partner, 210 Middle Road, #10-01 IOI Plaza, Singapore 188994 (SG).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: A METHOD AND AN APPARATUS FOR CONTROLLING THE RATE OF A VIDEO SEQUENCE; A VIDEO ENCODING DEVICE



(57) Abstract: A method for rate control for encoding video sequence, wherein the video sequence comprises a plurality of Group Of Pictures, wherein each Group of Picture comprises at least and I-frame and an Inter-frame, the rate control method comprising the following steps for the encoding of the. Inter-frame in the Group of Picture: determining a desired frame rate based on an available bandwidth of a channel for transmitting the video sequence and an available computational resources for the encoding process; determining a target buffer level based on the desired frame rate and the position of the Inter-frame with respect to the I-frame; and determining a target bit rate based on the target buffer level and the available channel bandwidth, wherein the target bit rate is used for controlling the rate of encoding the video sequence.

WO 2004/023821 A1

ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*