



(51) International Patent Classification:
H04N 7/26 (2006.01) *H04N 7/50* (2006.01)
H04N 7/30 (2006.01)

(21) International Application Number:
PCT/US2012/028097

(22) International Filing Date:
7 March 2012 (07.03.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/450,555 8 March 2011 (08.03.2011) US
61/451,485 10 March 2011 (10.03.2011) US
61/451,496 10 March 2011 (10.03.2011) US
61/452,384 14 March 2011 (14.03.2011) US
61/494,855 8 June 2011 (08.06.2011) US
61/497,345 15 June 2011 (15.06.2011) US
13/413,514 6 March 2012 (06.03.2012) US

(71) Applicant (for all designated States except US): **QUALCOMM INCORPORATED** [US/US]; ATTN: Interna-

tional IP Administration, 5775 Morehouse Drive, San Diego, CA 92121-1714 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SOLE ROJALS, Joel** [ES/US]; 5775 Morehouse Drive, San Diego, CA 92121-1714 (US). **JOSHI, Rajan L.** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121-1714 (US). **KARCZEWICZ, Marta** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121-1714 (US).

(74) Agent: **DAWLEY, Brian R.**; Shumaker & Sieffert, P.A., 1625 Radio Drive, Suite 300, Woodbury, MN 55125 (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, 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,

[Continued on next page]

(54) Title: CODING OF TRANSFORM COEFFICIENTS FOR VIDEO CODING

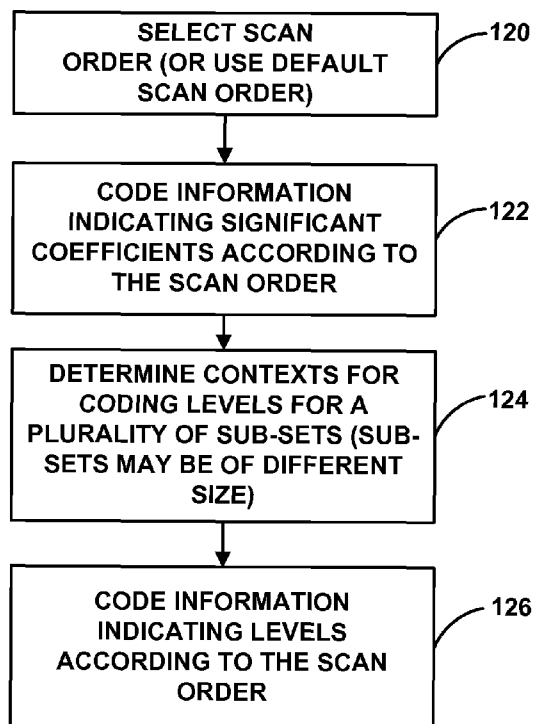


FIG. 22

(57) Abstract: This disclosure describes techniques for coding transform coefficients associated with a block of residual video data in a video coding process. Aspects of this disclosure include the selection of a scan order for both significance map coding and level coding, as well as the selection of contexts for entropy coding consistent with the selected scan order. This disclosure proposes a harmonization of the scan order to code both the significance map of the transform coefficients as well as to code the levels of the transform coefficient. It is proposed that the scan order for the significance map should be in the inverse direction (i.e., from the higher frequencies to the lower frequencies). This disclosure also proposes that transform coefficients be scanned in subsets as opposed to fixed subblocks. In particular, transform coefficients are scanned in a subset consisting of a number of consecutive coefficients according to the scan order.





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, MD, 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).

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 (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))