



- (51) **International Patent Classification:**
H04N 19/176 (2014.01)
- (21) **International Application Number:**
PCT/US2021/052051
- (22) **International Filing Date:**
24 September 2021 (24.09.2021)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/187,213 11 May 2021 (11.05.2021) US
17/448,469 22 September 2021 (22.09.2021) US
- (71) **Applicant: TENCENT AMERICA LLC [US/US];** 2747
Park Boulevard, Palo Alto, California 94306 (US).
- (72) **Inventors: DU, Yixin;** c/o TENCENT AMERICA LLC,
2747 Park Boulevard, Palo Alto, California 94306 (US).
- (74) **Agent: MA, Johnny et al.;** ArentFox Schiff LLP, 1717 K
Street, Washington, DC 20006 (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, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN,
KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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,
SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, SZ, TZ,

(54) **Title:** METHOD AND APPARATUS FOR BOUNDARY HANDLING IN VIDEO CODING

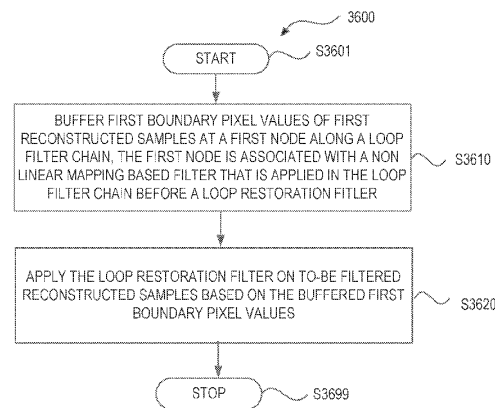


FIG. 36

(57) **Abstract:** Aspects of the disclosure provide methods and apparatuses for filtering in video encoding/decoding. In some examples, an apparatus for video coding includes processing circuitry. The processing circuitry buffers first boundary pixel values of first reconstructed samples at a first node along a loop filter chain. The first node is associated with a non linear mapping based filter that is applied in the loop filter chain before a loop restoration filter. The first boundary pixel values are values of pixels at a frame boundary. The processing circuitry applies the loop restoration filter on to-be filtered reconstructed samples based on the buffered first boundary pixel values.

[Continued on next page]

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, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*