

## (19) United States

# (12) Patent Application Publication (10) Pub. No.: US 2023/0232025 A1

Jul. 20, 2023 (43) **Pub. Date:** 

#### (54) SIGNALING DECODED PICTURE BUFFER SIZE IN MULTI-LOOP SCALABLE VIDEO CODING

(71) Applicant: Texas Instruments Incorporated, Dallas, TX (US)

(72) Inventors: **Do-Kyoung Kwon**, Allen, TX (US); Madhukar Budagavi, Plano, TX (US)

(21) Appl. No.: 18/123,772

Filed: Mar. 20, 2023 (22)

### Related U.S. Application Data

- (63) Continuation of application No. 17/380,498, filed on Jul. 20, 2021, now Pat. No. 11,611,767, which is a continuation of application No. 16/701,700, filed on Dec. 3, 2019, now Pat. No. 11,102,497, which is a continuation of application No. 15/948,891, filed on Apr. 9, 2018, now Pat. No. 10,531,108, which is a continuation of application No. 14/138,002, filed on Dec. 20, 2013, now Pat. No. 9,942,545.
- Provisional application No. 61/811,373, filed on Apr. 12, 2013, provisional application No. 61/753,172, filed on Jan. 16, 2013, provisional application No. 61/748,581, filed on Jan. 3, 2013.

#### **Publication Classification**

(51) Int. Cl. H04N 19/31 (2006.01)H04N 19/46 (2006.01)H04N 19/423 (2006.01)H04N 19/573 (2006.01)H04N 19/577 (2006.01)

U.S. Cl. (52)CPC ...... H04N 19/31 (2014.11); H04N 19/46 (2014.11); H04N 19/423 (2014.11); H04N 19/573 (2014.11); H04N 19/577 (2014.11); H04N 19/105 (2014.11)

#### (57)ABSTRACT

A method for encoding a video sequence in a scalable video encoder to generate a scalable bitstream is provided that includes encoding the video sequence in a first layer encoder of the scalable video encoder to generate a first sub-bitstream, encoding the video sequence in a second layer encoder of the scalable video encoder to generate a second sub-bitstream, wherein portions of the video sequence being encoded in the second layer encoder are predicted using reference portions of the video sequence encoded in the first layer encoder, combining the first sub-bitstream and the second sub-bitstream to generate the scalable bitstream, and signaling in the scalable bitstream an indication of a maximum decoded picture buffer (DPB) size needed for decoding the second sub-bitstream and the first sub-bitstream when the second sub-bitstream is a target sub-bitstream for decod-

