

~~WHAT IS CLAIMED IS:~~**CLAIMS**

- 1.——A method of decoding video data, the method comprising:
 - receiving, ~~in an encoded video bitstream,~~ residual data corresponding to a ~~block~~prediction unit of video data, ~~wherein the block of video data that is encoded~~ using according to an asymmetric motion partitioning (AMP) mode, is uni-directionally predicted using backward view synthesis prediction (BVSP), and has a size of 16x12, 12x16, 16x4, or 4x16;
 - receiving, in the encoded video bitstream, data indicating that the prediction unit is uni-directionally predicted according to the BVSP; obtaining a single set of motion information for an entirety of the prediction unit; deriving a single disparity vector for the entirety of the prediction unit based on the single set of motion information obtained for the entirety of the prediction unit; partitioning the block of video data into prediction unit according to the AMP mode to form a plurality of sub-blocks, each sub-block having a size of 8x4 or 4x8;
 - ~~deriving a,~~ and each sub-block having a respective set of motion information; deriving a respective disparity motion vector for each sub-block of the plurality of sub-blocks from a corresponding depth block in a depth picture corresponding to a reference picture;
 - , wherein the deriving is based on the prediction unit being uni-directionally predicted according to the BVSP, and wherein the deriving uses the single set of motion information obtained for the entirety of the prediction unit; synthesizing a respective reference block for each sub-block of the plurality of sub-blocks using the respective derived disparity motion vectors; and
 - ~~decoding the block of video data~~prediction unit by performing motion compensation on each of the sub-blocks using the residual data and the synthesized respective reference blocks.
- 2.——The method of claim 1, ~~wherein the block of video data is a prediction unit.~~
- 3.——~~The method of claim 2, further comprising:~~

—receiving one or more syntax ~~element~~elements indicating that the prediction unit is encoded using ~~asymmetric motion partitioning~~, according to the AMP mode; and ~~indicating that the prediction unit is uni-directionally predicted using backward view synthesis prediction~~; and
 —receiving a merge candidate index pointing to a BVSP candidate- included in a merge candidate list.

4. — 3. The method of claim 1, wherein deriving the respective disparity motion vector for each ~~of the sub-blocks~~block comprises:

— ~~deriving a disparity vector for the block of video data~~;
 — ~~locating the corresponding depth block for each sub-block of the plurality of sub-blocks using the derived single disparity vector derived for the prediction unit~~; and
 — ~~converting one selected depth value of the corresponding depth block for each sub-block of the plurality of sub-blocks to the respective disparity motion vector~~.

5. — 4. The method of claim 1, wherein the ~~block of video data~~prediction unit is a first ~~block of video data~~prediction unit, and wherein the ~~plurality of sub-blocks~~ is a first plurality of sub-blocks, the method further comprising:

— ~~receiving residual data corresponding to a second block of video data~~prediction unit, wherein the second ~~block of video data~~prediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size of 16x4 or 4x16;
 — ~~partitioning the second block of video data~~prediction unit into a second plurality of sub-blocks, each respective sub-block of the second plurality of sub-blocks having a size of 8x4 or 4x8;
 — ~~deriving motion information for each sub-block of the second plurality of sub-blocks from one respective reference block~~; and
 — ~~decoding the second block of video data~~prediction unit by performing motion compensation on each sub-block of the second plurality of sub-blocks using the residual data, the derived motion information, and one reference picture list.

6. — 5. The method of claim 54, wherein performing the motion compensation comprises performing uni-directional motion compensation relative to a picture in the one reference picture list.

7. ~~6.~~ The method of claim 1, wherein the ~~block of video data~~ prediction unit is a first ~~block~~ prediction unit, and wherein the plurality of sub-blocks is a first plurality of ~~video data~~ sub-blocks, the method further comprising:

~~receiving residual data corresponding to a second block of video data~~ prediction unit, wherein the second ~~block of video data~~ prediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size 16x12 or 12x16; partitioning the second prediction unit of video data into a second plurality of sub-blocks; and decoding each sub-block of the second plurality of sub-blocks with uni-predictive prediction.

~~partitioning the second block of video data into multiple sub-blocks; and~~

~~decoding each of the multiple sub-blocks with uni-predictive prediction.~~

7. The method of claim 1, wherein obtaining the single set of motion information for the entirety of the prediction unit comprises receiving the single set of motion information in the encoded video bitstream, and wherein decoding the prediction unit comprises decoding the prediction unit according to a merge mode.

8. The method of claim 1, wherein obtaining the single set of motion information for the entirety of the prediction unit comprises deriving the single set of motion information, and wherein decoding the prediction unit comprises decoding the prediction unit according to an advanced motion vector prediction (AMVP) mode.

9. A method of encoding video data, the method comprising:

~~generating a block of video data using~~ prediction unit according to an asymmetric motion partitioning, wherein (AMP) mode, such that the block of video data prediction unit is uni-directionally predicted using backward view synthesis prediction (BVSP), and has a size of 16x12, 12x16, 16x4, or 4x16;

~~partitioning the block~~ prediction unit according to the AMP mode to form a plurality of video data into sub-blocks, each sub-block having a size of 8x4 or 4x8;

~~deriving, and each sub-block having a respective set of motion information; deriving a~~ respective disparity motion vector, based on the respective set of motion information, for each sub-block of the plurality of sub-blocks from a corresponding depth block in a depth picture corresponding to a reference picture;

—synthesizing a respective reference block for each sub-block of the plurality of sub-blocks partitioned from the prediction unit, using the respective derived disparity motion vectors; and

—encoding the ~~block of video data~~prediction unit by performing motion compensation on each sub-block of the plurality of sub-blocks using the synthesized respective reference blocks; and performing one of: signaling, in an encoded video bitstream, a single set of motion information for an entirety of the encoded prediction unit; or inheriting, for the entirety of the encoded prediction unit, the single set of motion information from one or more neighboring blocks of the encoded prediction unit.

9. —~~The method of claim 8, wherein the block of video data is a prediction unit.~~

10. —The method of claim 9, further comprising:

—generating one or more syntax ~~element~~elements indicating that the prediction unit is encoded using ~~asymmetric motion partitioning, and indicating that the prediction unit is unidirectionally predicted using backward view synthesis prediction; and~~

—according to the AMP mode; and generating a merge candidate index pointing to a BVSP candidate, in a candidate list.

11. —The method of claim 89, wherein deriving the respective disparity motion vector for each of the sub-blocks comprises:

—~~deriving a disparity vector for the block of video data;~~

—locating the corresponding depth block for each of the sub-blocks using the single disparity vector ~~derived disparity vector~~for the prediction unit; and

—converting one selected depth value of the corresponding depth block for each of the sub-blocks to the respective disparity motion vector.

12. —The method of claim 89, wherein the ~~block of video data~~prediction unit is a first ~~block of video data~~prediction unit, the method further comprising:

—generating a second ~~block of video data using asymmetric motion partitioning, wherein~~prediction unit according to the AMP mode, such that the second block of video dataprediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size of 16x4 or 4x16; partitioning the second prediction unit to form a second plurality of sub-blocks, each sub-block of the second plurality of sub-blocks having a size

of 8x4 or 4x8; deriving motion information for each sub-block of the second plurality of sub-blocks from one respective reference block; and encoding the second prediction unit by performing motion compensation on each sub-block of the second plurality of sub-blocks using the derived motion information and one reference picture list.

~~—— partitioning the second block of video data into sub-blocks, each sub-block having a size of 8x4 or 4x8;~~

~~—— deriving motion information for each of the sub-blocks from one respective reference block; and~~

~~—— encoding the second block of video data by performing motion compensation on each of the sub-blocks using the derived motion information and one reference picture list.~~

13.— The method of claim 12, wherein performing the motion compensation comprises performing uni-directional motion compensation relative to a picture in the one reference picture list.

14.— The method of claim 89, wherein the ~~block of video data~~prediction unit is a first block of ~~video data~~prediction unit, the method further comprising:

~~—— generating a second block of video data using asymmetric motion partitioning~~prediction unit according to the AMP mode, wherein the second block of video data~~prediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size 16x12 or 12x16; partitioning the second prediction unit to form a second plurality of sub-blocks; and encoding each sub-block of the second plurality of sub-blocks with uni-predictive prediction.~~

~~—— partitioning the second block of video data into multiple sub-blocks; and~~

~~—— encoding each of the multiple sub-blocks with uni-predictive prediction.~~

15.— An apparatus configured to decode video data, the apparatus comprising:

~~—— a video-communications interface configured to receive an encoded video bitstream; a memory coupled to the communications interface and configured to store information corresponding to a block of the encoded video bitstream, the encoded video data; and~~

~~—— one or more processors configured to:~~

~~—— receive bitstream comprising residual data corresponding to the block of a prediction unit; and one or more processors in communication with the memory device, the one or more processors being configured to: retrieve, from the encoded video data~~bitstream memory,

the residual data corresponding to the prediction unit, wherein the ~~block of video data~~ prediction unit is encoded ~~using~~ according to an asymmetric motion partitioning (AMP) coding tool, is uni-directionally predicted using backward view synthesis prediction (BVSP), and has a size of 16x12, 12x16, 16x4 or 4x16;

_____ , or 4x16; retrieve, from the encoded video bitstream stored to the memory, data indicating that the prediction unit is uni-directionally predicted according to the BVSP; obtain a single set of motion information for an entirety of the prediction unit; derive a single disparity vector for the entirety of the prediction unit based on the single set of motion information obtained for the entirety of the prediction unit; partition the ~~block of video data into~~ prediction unit according to the AMP mode to form a plurality of sub-blocks, each sub-block having a size of 8x4 or 4x8;

_____ , and each sub-block having a respective set of motion information; derive a respective disparity motion vector for each sub-block of the plurality of sub-blocks from a corresponding depth block in a depth picture corresponding to a reference picture;

_____ , wherein to derive the respective disparity motion vector, the one or more processors are configured to derive the respective disparity motion vector based on the prediction unit being uni-directionally predicted according to the BVSP, and wherein to derive the respective disparity motion vector, the one or more processors are configured to use the single set of motion information obtained for the entirety of the prediction unit; synthesize a respective reference block for each sub-block of the plurality of sub-blocks using the respective derived disparity motion ~~vectors~~ vector; and

_____ _decode the ~~block of video data~~ prediction unit by performing motion compensation on each of the sub-blocks using the residual data and the synthesized respective reference blocks.

16. — The apparatus of claim 15, wherein the ~~block of video data is a prediction unit.~~

17. — The apparatus of claim 16, wherein the one or more processors are further configured to:

_____ _receive one or more syntax ~~element~~ elements indicating that the prediction unit is encoded using asymmetric motion partitioning, and indicating that the prediction unit is uni-directionally predicted using backward view synthesis prediction; and

———~~according to the AMP mode; and~~ receive a merge candidate index pointing to a BVSP candidate- included in a merge candidate list.

~~18.~~ — 17. The apparatus of claim 15, wherein to derive the respective disparity motion vector for each sub-block, the one or more processors are further configured to:

———~~derive a disparity vector for the block of video data;~~

———locate the corresponding depth block for each sub-block of the plurality of sub-blocks using the single disparity vector derived ~~disparity vector for the prediction unit;~~ and

———convert one selected depth value of the corresponding depth block for each sub-block of the plurality of sub-blocks to the respective disparity motion vector.

~~19.~~ — 18. The apparatus of claim 15, wherein the ~~block of video data~~ prediction unit is a first prediction unit, wherein the plurality of sub-blocks is a first block plurality of video data ~~sub-blocks,~~ and wherein the one or more processors are further configured to:

———receive residual data corresponding to a second block of video data ~~prediction unit,~~ wherein the second ~~block of video data~~ prediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size of 16x4 or 4x16;

———partition the second block of video data into ~~prediction unit to form a second plurality of~~ sub-blocks, each respective sub-block of the second plurality of sub-blocks having a size of 8x4 or 4x8;

———derive motion information for each sub-block of the second plurality of sub-blocks from one respective reference block; and

———decode the second block of video data ~~prediction unit~~ by performing motion compensation on each sub-block of the second plurality of sub-blocks using the residual data, the derived motion information, and one reference picture list.

~~20.~~ — 19. The apparatus of claim ~~19~~ 18, wherein to perform the motion compensation, the one or more processors are further configured to perform uni-directional motion compensation relative to a picture in the one reference picture list.

21.— 20. The apparatus of claim 15, wherein the ~~block of video data~~prediction unit is a first ~~block~~prediction unit, wherein the plurality of sub-blocks is a first plurality of ~~video data~~sub-blocks, and wherein the one or more processors are further configured to:

——— ~~receive residual data corresponding to a second block of video data~~prediction unit, wherein the second ~~block of video data~~prediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size of 16x12 or 12x16; partition the second prediction unit of video data into a second plurality of sub-blocks; and decode each sub-block of the second plurality of sub-blocks with uni-predictive prediction.

——— ~~partition the second block of video data into multiple sub-blocks; and~~

——— ~~decode each of the multiple sub-blocks with uni-predictive prediction.~~

22.— 21. The apparatus of claim 15, further comprising:

——— a display device configured to display decoded video data based on the decoded block of video data~~prediction unit.~~

23.— 22. The apparatus of claim 15, wherein the ~~video~~-memory and the one or more processors ~~comprise~~form a video decoder housed within one of a mobile phone, a tablet computer, a laptop computer, a desktop computer, a set-top box, or a television.

23. The apparatus of claim 15, wherein to obtain the single set of motion information for the entirety of the prediction unit, the one or more processors are configured to receive the single set of motion information in the encoded video bitstream, and wherein to decode the prediction unit, the one or more processors are configured to decode the prediction unit according to a merge mode.

24.— The apparatus of claim 15, wherein to obtain the single set of motion information for the entirety of the prediction unit, the one or more processors are configured to derive the single set of motion information, and wherein to decode the prediction unit, the one or more processors are configured to decode the prediction unit according to an advanced motion vector prediction (AMVP) mode.

25. An apparatus configured to decode video data, the apparatus comprising:

——— means for receiving, in an encoded video bitstream, residual data corresponding to a block~~prediction unit of the video data, wherein the block of video data~~ that is encoded

~~using~~ according to an asymmetric motion partitioning (AMP) mode, is uni-directionally predicted using backward view synthesis prediction (BVSP), and has a size of 16x12, 12x16, 16x4, or 4x16;

~~means for~~ means for receiving, in the encoded video bitstream, data indicating that the prediction unit is uni-directionally predicted according to the BVSP; means for obtaining a single set of motion information for an entirety of the prediction unit; means for deriving a single disparity vector for the prediction unit based on the single set of motion information obtained for the entirety of the prediction unit; means for partitioning the block of video data into sub-blocks, prediction unit according to the AMP mode to form a plurality of sub-blocks, each sub-block having a size of 8x4 or 4x8, and each sub-block having a size of 8x4 or 4x8;

~~means for deriving a~~ respective set of motion information; means for deriving a respective disparity motion vector for each sub-block of the plurality of sub-blocks from a corresponding depth block in a depth picture corresponding to a reference picture;

~~,~~ wherein the means for deriving comprises means for deriving the respective disparity vector based on the prediction unit being uni-directionally predicted according to the BVSP, and wherein the means for deriving comprises means for deriving the respective disparity vector using the single set of motion information obtained for the entirety of the prediction unit; means for synthesizing a respective reference block for each sub-block of the plurality of sub-blocks using the respective derived disparity motion vectors; and

~~means for decoding the block of video data~~ prediction unit by performing motion compensation on each of the sub-blocks using the residual data and the synthesized respective reference blocks.

25. ~~The apparatus of claim 24, wherein the block of video data is a prediction unit.~~

26. ~~The apparatus of claim 25, further comprising:~~

~~means for receiving one or more syntax elements indicating that the prediction unit is encoded using asymmetric motion partitioning, and indicating that the prediction unit is uni-directionally predicted using backward view synthesis prediction; and~~

~~according to the AMP mode; and means for receiving a merge candidate index pointing to a BVSP candidate, included in a merge candidate list.~~

27.— The apparatus of claim 2425, wherein the means for deriving the respective disparity motion vector for each ~~of the sub-blocks~~block comprises:

- ~~means for deriving a disparity vector for the block of video data;~~
- ~~means for locating the corresponding depth block for each sub-block of the plurality of sub-blocks using the single disparity vector derived~~ disparity vector for the prediction unit; and
- ~~means for converting one selected depth value of the corresponding depth block for each sub-block of the plurality of sub-blocks to the respective disparity motion vector.~~

28.— The apparatus of claim 2425, wherein the ~~block~~prediction unit is a first prediction unit, and wherein the ~~plurality of video data~~sub-blocks is a first block~~plurality of video data~~sub-blocks, the apparatus further comprising:

- ~~means for receiving residual data corresponding to a second block of video data~~prediction unit, wherein the second ~~block of video data~~prediction unit is encoded using at least one of inter-view motion prediction or motion vector inheritance, and has a size of 16x4 or 4x16;
- ~~means for partitioning the second prediction unit to form a second block~~plurality of video data into sub-blocks, each sub-block of the second plurality having a size of 8x4 or 4x8;
- ~~means for deriving motion information for each sub-block of the second plurality of sub-blocks from one respective reference block; and~~
- ~~means for decoding the second block of video data~~prediction unit by performing motion compensation on each sub-block of the second plurality of sub-blocks using the residual data, the derived motion information, and one reference picture list.

29.— The apparatus of claim 28, wherein the means for performing the motion compensation comprises means for performing uni-directional motion compensation relative to a picture in the one reference picture list.

30.— The apparatus of claim 2425, wherein the ~~block of video data~~prediction unit is a first block~~prediction unit~~, and wherein the ~~plurality of sub-blocks is a first plurality of video data~~sub-blocks, the apparatus further comprising:

- ~~means for receiving residual data corresponding to a second block of video data~~prediction unit, wherein the second ~~block of video data~~prediction unit is encoded using at

least one of inter-view motion prediction or motion vector inheritance, and has a size of 16x12 or 12x16;

——— means for partitioning the second ~~block~~prediction unit to form a second plurality of ~~video data into multiple~~ sub-blocks; and

——— means for decoding each sub-block of the ~~multiple~~second plurality of sub-blocks with uni-predictive prediction.