

CLAIMS

What is claimed is:

1. An apparatus comprising:
a memory; and
a processor coupled to the memory and configured to:
 - obtain a current block of a video frame,
 - obtain candidate motion vectors (MVs) corresponding to neighboring blocks of the video frame, wherein the neighboring blocks neighbor the current block, wherein the neighboring blocks comprise a first neighboring block and a second neighboring block,
 - obtain precisions of the candidate MVs, wherein the precisions comprise a first precision of a candidate MV corresponding to the first neighboring block and a second precision of a candidate MV corresponding to the second neighboring block,
 - perform first rounding of the precisions based on a rounding scheme, wherein the rounding scheme comprises rounding at least one of the first precision and the second precision to a target precision of the current block,
 - perform second rounding of the candidate MVs based on the first rounding, wherein the second rounding includes rounding up or rounding down,
 - perform pruning of the candidate MVs, and
 - generate a candidate list based on the second rounding and the pruning.
2. The apparatus of claim 1, wherein the rounding scheme comprises:
 - determining a lowest precision from among any combination of the first precision, the second precision, and the target precision of the current block; and
 - rounding at least one of the first precision, the second precision, or the target precision to the lowest precision.
3. The apparatus of claim 1, wherein the rounding scheme comprises:
 - determining a median precision from among any combination of the first precision, the second precision, and the target precision of the current block; and
 - rounding at least one of the first precision, the second precision, or the target precision to the median precision.

4. The apparatus of claim 1, wherein the rounding scheme comprises:
determining a highest precision from among any combination of the first precision, the second precision, and the target precision of the current block; and
rounding at least one of the first precision, the second precision, or the target precision to the highest precision.
5. The apparatus of claim 1, wherein the rounding scheme comprises:
determining a default precision; and
rounding at least one of the first precision, the second precision, or a target precision of the current block to the default precision.
6. The apparatus of any one of claims 1-5, wherein the pruning comprises discarding identical candidate MVs or sub-identical candidate MVs.
7. The apparatus of claim 6, wherein the pruning further comprises adding zero MVs to fill the candidate list.
8. The apparatus of any one of claims 1-7, wherein the processor is further configured to further perform the first rounding and the second rounding before the pruning.
9. The apparatus of any one of claims 1-7, wherein the processor is further configured to further perform the first rounding and the second rounding after the pruning.
10. The apparatus of any one of claims 1-9, wherein the candidate list is an advanced motion vector prediction (AMVP) candidate list, or wherein the candidate list is a merge candidate list.
11. The apparatus of any one of claims 1-10, wherein the processor is further configured to:
select a final candidate MV from the candidate list; and
signal the final candidate MV in an encoded video.
12. A method implemented by a processor of an apparatus, comprising:

obtaining a current block of a video frame;
obtaining candidate motion vectors (MVs) corresponding to neighboring blocks of the video frame, wherein the neighboring blocks neighbor the current block, wherein the neighboring blocks comprise a first neighboring block and a second neighboring block;
obtaining precisions of the candidate MVs, wherein the precisions comprise a first precision of a candidate MV corresponding to the first neighboring block and a second precision of a candidate MV corresponding to the second neighboring block;
performing first rounding of the precisions based on a rounding scheme, wherein the rounding scheme comprises rounding at least one of the first precision and the second precision to a target precision of the current block;
performing second rounding of the candidate MVs based on the first rounding, wherein the second rounding includes rounding up or rounding down;
performing pruning of the candidate MVs; and
generating a candidate list based on the second rounding and the pruning.

13. The method of claim 12, wherein the rounding scheme comprises:
determining a third precision from among any combination of the first precision, the second precision, and the target precision of the current block, and rounding at least one of the first precision, the second precision, or the target precision to the third precision, wherein the third precision includes at least one of a lowest precision, a median precision, a highest precision, or a default precision.

14. The method of any one of claims 12-13, further comprising:
selecting a final candidate MV from the candidate list;
signaling the final candidate MV in an encoded video; and
transmitting the encoded video.

15. An apparatus comprising:
a receiver configured to receive an encoded video comprising a header for a portion of the encoded video, the header comprises a precision for all motion vectors (MVs) of a coding mode in the portion, wherein the precisions comprise a first precision of a candidate MV corresponding

to a first neighboring block and a second precision of a candidate MV corresponding to a second neighboring block;

a processor coupled to the receiver and configured to decode the encoded video to obtain a decoded video based on the precision, wherein the processor configured to decode the encoded video to obtain a decoded video based on the precision comprises: performing first rounding of the precisions based on a rounding scheme, wherein the rounding scheme comprises rounding at least one of the first precision and the second precision to a target precision of the current block;

performing second rounding of the candidate MVs based on the first rounding, wherein the second rounding includes rounding up or rounding down;

performing pruning of the candidate MVs; and

generating a candidate list based on the second rounding and the pruning; and

a display coupled to the processor and configured to display the decoded video.

16. The apparatus of claim 15, wherein the portion is a slice, a region, a coding tree unit (CTU), or a tile.

17. The apparatus of claim 15 or 16, wherein the precision is one of quarter-pel precision, half-pel precision, integer-pel precision, or four-pel precision.