

CLAIMS

1. A method of processing video data, comprising:
 - determining, for a first conversion between a first bi-predicted video block of a video and a bitstream of the video, that a motion information of the first bi-predicted video block is refined using a first optical flow-based method in which at least one first motion vector refinement is derived to refine prediction samples of a region within the first bi-predicted video block;
 - clipping the at least one first motion vector refinement to a first range;
 - performing the first conversion based on at least one clipped first motion vector refinement;
 - determining, for a second conversion between a second affine video block of the video and the bitstream, that a motion information of the second affine video block is refined using a second optical flow-based method in which at least one second motion vector refinement is derived to refine prediction samples of a region within the second affine video block;
 - clipping the at least one second motion vector refinement to a second range; and
 - performing the second conversion based on at least one clipped second motion vector refinement;
 - wherein the first range is different from the second range;
 - wherein the first optical flow-based method is a bi-directional optical flow tool for bi-predicted video blocks, and the second optical flow-based method is a prediction refinement optical flow tool for affine video blocks;
 - wherein the first range is $[-N0, M0]$ and the second range is $[-N1, M1]$, wherein $N0$, $M0$, $N1$ and $M1$ are integers;
 - wherein $N0$ and $M0$ have a same value which is equal to $2^{K0}-1$, and $N1$ and $M1$ have a same value which is equal to $2^{K1}-1$, wherein $K0$ and $K1$ are integers;
 - wherein $[-N0, M0]$ is $[-15, 15]$; and
 - wherein $[-N1, M1]$ is $[-31, 31]$.
2. The method of claim 1, wherein the region within the first bi-predicted video block is a whole first bi-predicted video block or a sub-block within the first bi-predicted video block, and

the region within the second affine video block is a whole second affine video block or a sub-block within the second affine video block.

3. The method of claim 1 or 2, wherein the first motion vector refinement comprises a horizontal component and a vertical component, and wherein the clipping comprises clipping horizontal component and/or vertical component to the first range;
and/or

the second motion vector refinement comprises a horizontal component and a vertical component, and wherein the clipping comprises clipping horizontal component and/or vertical component to the second range.

4. The method of any one of claims 1-3, wherein the first conversion comprises encoding the first bi-predicted video block into the bitstream and the second conversion comprises encoding the second affine video block into the bitstream.

5. The method of any one of claims 1-3, wherein the first conversion comprises decoding the first bi-predicted video block from the bitstream and the second conversion comprises decoding the second affine video block from the bitstream.

6. An apparatus for processing video data comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution by the processor, cause the processor to:

determine, for a first conversion between a first bi-predicted video block of a video and a bitstream of the video, that a motion information of the first bi-predicted video block is refined using a first optical flow-based method in which at least one first motion vector refinement is derived to refine prediction samples of a region within the first bi-predicted video block;

clip the at least one first motion vector refinement to a first range;

perform the first conversion based on at least one clipped first motion vector refinement;

determine, for a second conversion between a second affine video block of the video and the bitstream, that a motion information of the second affine video block is refined using a

second optical flow-based method in which at least one second motion vector refinement is derived to refine prediction samples of a region within the second affine video block;

clip the at least one second motion vector refinement to a second range; and

perform the second conversion based on at least one clipped second motion vector refinement;

wherein the first range is different from the second range;

wherein the first optical flow-based method is a bi-directional optical flow tool for bi-predicted video blocks, and the second optical flow-based method is a prediction refinement optical flow tool for affine video blocks;

wherein the first range is $[-N0, M0]$ and the second range is $[-N1, M1]$, wherein $N0$, $M0$, $N1$ and $M1$ are integers;

wherein $N0$ and $M0$ have a same value which is equal to $2^{K0}-1$, and $N1$ and $M1$ have a same value which is equal to $2^{K1}-1$, wherein $K0$ and $K1$ are integers;

wherein $[-N0, M0]$ is $[-15, 15]$; and

wherein $[-N1, M1]$ is $[-31, 31]$.

7. A non-transitory computer-readable storage medium storing instructions that cause a processor to:

determine, for a first conversion between a first bi-predicted video block of a video and a bitstream of the video, that a motion information of the first bi-predicted video block is refined using a first optical flow-based method in which at least one first motion vector refinement is derived to refine prediction samples of a region within the first bi-predicted video block;

clip the at least one first motion vector refinement to a first range;

perform the first conversion based on at least one clipped first motion vector refinement;

determine, for a second conversion between a second affine video block of the video and the bitstream, that a motion information of the second affine video block is refined using a second optical flow-based method in which at least one second motion vector refinement is derived to refine prediction samples of a region within the second affine video block;

clip the at least one second motion vector refinement to a second range; and

perform the second conversion based on at least one clipped second motion vector refinement;

wherein the first range is different from the second range;

wherein the first optical flow-based method is a bi-directional optical flow tool for bi-predicted video blocks, and the second optical flow-based method is a prediction refinement optical flow tool for affine video blocks;

wherein the first range is $[-N0, M0]$ and the second range is $[-N1, M1]$, wherein $N0$, $M0$, $N1$ and $M1$ are integers;

wherein $N0$ and $M0$ have a same value which is equal to $2^{K0}-1$, and $N1$ and $M1$ have a same value which is equal to $2^{K1}-1$, wherein $K0$ and $K1$ are integers;

wherein $[-N0, M0]$ is $[-15, 15]$; and

wherein $[-N1, M1]$ is $[-31, 31]$.

8. A non-transitory computer-readable recording medium storing a bitstream of a video which is generated by a method performed by a video processing apparatus, wherein the method comprises:

determining, for a first bi-predicted video block of the video that a motion information of the first bi-predicted video block is refined using a first optical flow-based method in which at least one first motion vector refinement is derived to refine prediction samples of a region within the first bi-predicted video block;

clipping the at least one first motion vector refinement to a first range;

generating the bitstream based on at least one clipped first motion vector refinement;

determining, for a second affine video block of the video, that a motion information of the second affine video block is refined using a second optical flow-based method in which at least one second motion vector refinement is derived to refine prediction samples of a region within the second affine video block;

clipping the at least one second motion vector refinement to a second range; and

generating the bitstream based on at least one clipped second motion vector refinement;

wherein the first range is different from the second range;

wherein the first optical flow-based method is a bi-directional optical flow tool for bi-predicted video blocks, and the second optical flow-based method is a prediction refinement optical flow tool for affine video blocks;

wherein the first range is $[-N_0, M_0]$ and the second range is $[-N_1, M_1]$, wherein N_0 , M_0 , N_1 and M_1 are integers;

wherein N_0 and M_0 have a same value which is equal to $2^{K_0}-1$, and N_1 and M_1 have a same value which is equal to $2^{K_1}-1$, wherein K_0 and K_1 are integers;

wherein $[-N_0, M_0]$ is $[-15, 15]$; and

wherein $[-N_1, M_1]$ is $[-31, 31]$.