CLAIMS:

1. A method of video processing, comprising:

determining, for a conversion between a first video picture of a video comprising one or more video pictures and a bitstream of the video, a value of a first syntax element included in a picture header for the first video picture, wherein the first syntax element indicates whether all slices included in the first video picture are I slices;

determining, based on the value of the first syntax element, whether to signal a second syntax element in a slice header of a slice included in the first video picture, wherein the second syntax element indicates a slice type of the slice; and

performing the conversion based on the determining,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, the second syntax element is omitted from slice headers of all slices included in the first video picture, and a value of the second syntax element is inferred to indicate an I slice,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, one or more syntax elements are omitted from the picture header for the first video picture in the bitstream,

wherein the one or more syntax elements comprise a third syntax element specifying usage of a first prediction mode for the first video picture,

wherein, in the first prediction mode, a signaled motion vector is refined based on at least one motion vector with an offset to the signaled motion vector, and

wherein the one or more syntax elements are conditionally included in the picture header when the value of the first syntax element does not indicate all slices included in the first video picture are I slices.

2. The method of claim 1, wherein the one or more syntax elements further comprise at least one of: temporal_mvp_enabled_flag, mvd_l1_zero_flag, a fourth syntax element specifying a usage of a second prediction mode for the first video picture, or a fifth syntax element specifying a usage of a third prediction mode for the first video picture,

wherein, in the second prediction mode, for a video block in the first video picture, a bi-directional optical flow tool is used to obtain a motion vector offset based on at least one gradient value corresponding to a sample in a reference block of the video block, and

wherein, in the third prediction mode, for a video block in the first video picture, initial prediction samples of a sub-block of the video block coded with an affine mode is generated, and an optical flow operation is applied to generate final prediction samples for the sub-block by deriving a prediction refinement based on motion vector differences dMvH or dMvV, wherein dMvH and dMvV indicate motion vector differences along a horizontal direction and a vertical direction, respectively.

3. The method of claim 1, wherein the one or more syntax elements further comprise at least one of: log2_diff_min_qt_min_cb_inter_slice, max_mtt_hierarchy_depth_inter_slice, log2_diff_max_bt_min_qt_inter_slice, or log2_diff_max_tt_min_qt_inter_slice.

4. The method of any one of claims 1 to 3, wherein an intra_slice_allowed flag is conditionally included in the picture header.

5. The method of any one of claims 1 to 4, wherein the first video picture comprises one or more tiles, wherein a maximum tile width of the one or more tiles is defined as a maximum luma tile width in units of coding tree blocks, and a maximum tile height of the one or more tiles is defined as a maximum luma tile height in units of coding tree blocks.

6. The method of any one of claims 1 to 5, wherein the conversion includes decoding the video from the bitstream.

7. The method of any one of claims 1 to 5, wherein the conversion includes encoding the video into the bitstream.

8. 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 conversion between a first video picture of a video comprising one or more video pictures and a bitstream of the video, a value of a first syntax element included in a picture header for the first video picture, wherein the first syntax element indicates whether all slices included in the first video picture are I slices;

determine, based on the value of the first syntax element, whether to signal a second syntax element in a slice header of a slice included in the first video picture, wherein the second syntax element indicates a slice type of the slice; and

perform the conversion based on the determining,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, the second syntax element is omitted from slice headers of all slices included in the first video picture, and a value of the second syntax element is inferred to indicate an I slice,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, one or more syntax elements are omitted from the picture header for the first video picture in the bitstream,

wherein the one or more syntax elements comprises a third syntax element specifying usage of a first prediction mode for the first video picture,

wherein, in the first prediction mode, a signaled motion vector is refined based on at least one motion vector with an offset to the signaled motion vector, and

wherein the one or more syntax elements are conditionally included in the picture header when the value of the first syntax element does not indicate all slices included in the first video picture are I slices.

9. The apparatus of claim 8, wherein the one or more syntax elements further comprise at least one of: temporal_mvp_enabled_flag, mvd_l1_zero_flag, a fourth syntax element specifying a usage of a second prediction mode for the first video picture, or a fifth syntax element specifying a usage of a third prediction mode for the first video picture,

wherein, in the second prediction mode, for a video block in the first video picture, a bi-directional optical flow tool is used to obtain a motion vector offset based on at least one gradient value corresponding to a sample in a reference block of the video block, and

wherein, in the third prediction mode, for a video block in the first video picture, initial prediction samples of a sub-block of the video block coded with an affine mode is generated, and an optical flow operation is applied to generate final prediction samples for the sub-block by deriving a prediction refinement based on motion vector differences dMvH or dMvV, wherein dMvH and dMvV indicate motion vector differences along a horizontal direction and a vertical direction, respectively.

10. The apparatus of claim 8, wherein the one or more syntax elements further comprise at least one of: log2_diff_min_qt_min_cb_inter_slice, max_mtt_hierarchy_depth_inter_slice, log2_diff_max_bt_min_qt_inter_slice, or log2_diff_max_tt_min_qt_inter_slice.

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

determine, for a conversion between a first video picture of a video comprising one or more video pictures and a bitstream of the video, a value of a first syntax element included in a picture header for the first video picture, wherein the first syntax element indicates whether all slices included in the first video picture are I slices;

determine, based on the value of the first syntax element, whether to signal a second syntax element in a slice header of a slice included in the first video picture, wherein the second syntax element indicates a slice type of the slice; and

perform the conversion based on the determining,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, the second syntax element is omitted from slice headers of all slices included in the first video picture, and a value of the second syntax element is inferred to indicate an I slice,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, one or more syntax elements are omitted from the picture header for the first video picture in the bitstream,

wherein the one or more syntax elements comprises a third syntax element specifying usage of a first prediction mode for the first video picture,

wherein, in the first prediction mode, a signaled motion vector is refined based on at least one motion vector with an offset to the signaled motion vector, and

wherein the one or more syntax elements are conditionally included in the picture header when the value of the first syntax element does not indicate all slices included in the first video picture are I slices.

12. 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 video picture of a video comprising one or more video pictures, a value of a first syntax element included in a picture header for the first video picture, wherein the first syntax element indicates whether all slices included in the first video picture are I slices;

determining, based on the value of the first syntax element, whether to signal a second syntax element in a slice header of a slice included in the first video picture, wherein the second syntax element indicates a slice type of the slice; and

generating the bitstream based on the determining,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, the second syntax element is omitted from slice headers of all slices included in the first video picture, and a value of the second syntax element is inferred to indicate an I slice,

wherein, in response to the value of the first syntax element indicating that all slices included in the first video picture are I slices, one or more syntax elements are omitted from the picture header for the first video picture in the bitstream,

wherein the one or more syntax elements comprise a third syntax element specifying usage of a first prediction mode for the first video picture,

wherein, in the first prediction mode, a signaled motion vector is refined based on at least one motion vector with an offset to the signaled motion vector, and

wherein the one or more syntax elements are conditionally included in the picture header when the value of the first syntax element does not indicate all slices included in the first video picture are I slices.