

CLAIMS

1. A method of coding video data, the method comprising:
forming a most probable mode (MPM) candidate list for a chroma block of the video data, at least in part by:
 - adding, to the MPM candidate list, one or more derived modes (DMs) associated with a luma block of the video data, the luma block corresponding to the chroma block, and a plurality of luma prediction modes that can be used for coding luminance components of the video data;
 - adding one or more linear model (LM) modes to the MPM candidate list;
 - determining whether the one or more LM modes comprise a first instance of a first LM mode and one or more additional instances of the first LM mode; and
 - omitting the one or more additional instances of the LM mode from the MPM candidate list in response to a determination that the first LM mode was used to predict one or more neighboring chroma blocks of the chroma block;
 - selecting a mode from the MPM candidate list; and
 - coding the chroma block according to the mode selected from the MPM candidate list.
2. The method of claim 1, wherein forming the MPM candidate list further comprises:
adding one or more chroma modes inherited from neighboring chroma blocks of the chroma block at positions of the MPM candidate list that occur after positions of all of the one or DMs in the MPM candidate list.
3. The method of claim 1, wherein coding the chroma block comprises decoding the chroma block, the method further comprising receiving, in an encoded video bitstream, a one-bit flag indicating whether the chroma block is encoded using a particular LM mode of the one or more LM modes, wherein selecting the mode from the MPM candidate list is based on a value of the one-bit flag.
4. The method of claim 3, further comprising:
determining that the one or more LM modes include multiple LM modes;
determining that the received one-bit flag is set to an enabled state;

receiving an LM index corresponding to a position of the particular LM mode of the multiple LM modes in the MPM candidate list; and

based on the received one-bit flag being set to the enabled state, selecting the particular LM mode corresponding to the received LM index for coding the chroma block.

5. The method of claim 3, wherein selecting the mode from the MPM candidate list comprises:

determining that the received one-bit flag is set to a disabled state;

receiving an MPM index corresponding to a particular mode of the MPM candidate list;

and

based on the received one-bit flag being set to the disabled state, selecting the particular mode corresponding to the received MPM index.

6. The method of claim 1, wherein coding the chroma block comprises encoding the chroma block, the method further comprising:

signaling, in an encoded video bitstream, a one-bit flag indicating whether the chroma block is encoded using any of the one or more LM modes of the MPM candidate list.

7. The method of claim 6, further comprising:

based on a determination that the chroma block is not encoded using any LM mode of the MPM candidate list, setting the one-bit flag to a disabled state; and

based on the determination that the chroma block is not encoded using any LM mode of the MPM candidate list and based on a determination that the chroma block is encoded using a particular mode of the MPM candidate list, signaling, in the encoded video bitstream, an MPM index corresponding to the particular mode of the MPM candidate list.

8. The method of claim 6, further comprising:

based on a determination that the chroma block is encoded using a particular LM mode of the one or more LM modes of the MPM candidate list, setting the one-bit flag to an enabled state.

9. The method of claim 1, further comprising:

determining whether a number of default modes associated with the chroma block meets a predetermined threshold; and

performing one of:

based on a determination that the number of default modes does not meet the predetermined threshold, adding each default mode of the default modes to the MPM candidate list, or

based on a determination that the number of default modes meets the predetermined threshold, omitting all of the default modes from the MPM candidate list.

10. A device comprising:

a memory configured to store video data; and

processing circuitry in communication with the memory, the processing circuitry being configured to:

form a most probable mode (MPM) candidate list for a chroma block of the video data stored to the memory device, wherein to form the MPM candidate list, the processing circuitry is configured to:

add, to the MPM candidate list, one or more derived modes (DMs) associated with a luma block of the video data, the luma block corresponding to the chroma block, and a plurality of luma prediction modes that can be used for coding luminance components of the video data;

add one or more linear model (LM) modes to the MPM candidate list;

determine whether the one or more LM modes comprise a first instance of a first LM mode and one or more additional instances of the first LM mode; and

omit the one or more additional instances of the LM mode from the MPM candidate list based on a determination that the first LM mode was used to predict one or more neighboring chroma blocks of the chroma block;

select a mode from the MPM candidate list; and

code the chroma block according to the mode selected from the MPM candidate list.

11. The device of claim 10, wherein to form the MPM candidate list, the processing circuitry is further configured to:

add one or more chroma modes inherited from neighboring chroma blocks of the chroma block at positions of the MPM candidate list that occur after positions of all of the one or DMs in the MPM candidate list.

12. The device of claim 10, wherein to code the chroma block, the processing circuitry is configured to decode the chroma block, wherein the processing circuitry is further configured to receive, in an encoded video bitstream, a one-bit flag indicating whether the chroma block is encoded using a particular LM mode of the one or more LM modes, and wherein to select the mode from the MPM candidate list, the processing circuitry is configured to select the mode based on a value of the one-bit flag.

13. The device of claim 12, wherein the processing circuitry is further configured to:
 determine that the one or more LM modes include multiple LM modes;
 determine that the received one-bit flag is set to an enabled state;
 receive an LM index corresponding to a position of the particular LM mode of the multiple LM modes in the MPM candidate list; and
 based on the received one-bit flag being set to the enabled state, select the particular LM mode corresponding to the received LM index for coding the chroma block.

14. The device of claim 12, wherein to select the mode from the MPM candidate list, the processing circuitry is configured to:
 determine that the received one-bit flag is set to a disabled state;
 receive an MPM index corresponding to a particular mode of the MPM candidate list;
 and
 based on the received one-bit flag being set to the disabled state, select the particular mode corresponding to the received MPM index.

15. The device of claim 10, wherein to code the chroma block, the processing circuitry is configured to encode the chroma block, and wherein the processing circuitry is further configured to signal, in an encoded video bitstream, a one-bit flag indicating whether the chroma block is encoded using any LM mode of the one or more LM modes.

16. The device of claim 15, wherein the processing circuitry is further configured to:

based on a determination that the chroma block is not encoded using any LM mode of the one or more LM modes, set the one-bit flag to a disabled state; and

based on the determination that the chroma block is not encoded using any LM mode of the one or more LM modes and on a determination that the chroma block is encoded using a particular mode of the MPM candidate list, signal, in the encoded video bitstream, an MPM index corresponding to the particular mode of the MPM candidate list.

17. The device of claim 15, wherein the processing circuitry is further configured to:

based on a determination that the chroma block is encoded using particular LM mode of the one or more LM modes, set the one-bit flag to an enabled state.

18. The device of claim 10, wherein the processing circuitry is further configured to:

determine whether a number of default modes associated with the chroma block meets a predetermined threshold;

based on a determination that the number of default modes does not meet the predetermined threshold, add each default mode of the default modes to the MPM candidate list; and

based on a determination that the number of default modes meets the predetermined threshold, omit all of the default modes from the MPM candidate list.