CLAIMS

1. A method of decoding a sequence of video data that includes a plurality of pictures, the method comprising: decoding a first syntax element that indicates whether a first decoder-side refinement tool is enabled or disabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; determining that the first decoder-side refinement tool is enabled for the first portion of the first picture based on a value of the first syntax element; decoding a second syntax element that indicates whether a second decoder-side refinement tool is enabled or disabled for the first portion of the first picture, wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; determining that the second decoder-side refinement tool is disabled for the first portion of the first picture based on a value of the second syntax element; and decoding the first portion of the first picture using the first decoder side refinement tool in response to determining that the first decoder-side refinement tool is enabled for the first portion of the first picture and in response to determining that the second decoder side refinement tool is disabled for the first portion of the first picture.

2. The method of claim 1, wherein the first decoder-side refinement tool comprises a decoder-side motion vector refinement (DMVR) tool and wherein the second decoder-side refinement tool comprises a bi-directional optical flow (BDOF) tool.

3. The method of claim 1, wherein decoding the first syntax element comprises decoding a first instance of the first syntax element and wherein decoding the second syntax element comprises decoding a first instance of the second syntax element, the method further comprising: decoding a second instance of the first syntax element that indicates whether the first decoder-side refinement tool is enabled or disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data, wherein the second picture among the plurality of pictures is different than the first picture among the plurality of pictures; determining that the first decoder-side refinement tool is disabled for the first portion of the second picture based on a value of the second instance of the first syntax element; decoding a second instance of the second syntax element that indicates whether the second decoder-side refinement tool is enabled or disabled for the first portion of the second picture among the plurality of pictures within the sequence of video data; determining that the second decoder-side refinement tool is enabled for the first portion of the second picture based on a value of the second instance of the second syntax element; and decoding the first portion of the second picture using the second decoder-side refinement tool in response to determining that the first decoder-side refinement tool is disabled and the second decoder-side refinement tool is enabled for the first portion of the second picture among the plurality of pictures.

4. The method of claim 3, further comprising: decoding a third instance of the first syntax element that indicates whether the first decoder-side refinement tool is enabled or disabled

for a first portion of a third picture among the plurality of pictures within the sequence of video data, wherein the third picture is different than the first picture and the third picture is different than the second picture; determining that the first decoder-side refinement tool is enabled for the first portion of the third picture based on a value of the third instance of the first syntax element; decoding a third instance of the second syntax element that indicates whether the second decoder-side refinement tool is enabled or disabled for the first portion of the third picture among the plurality of pictures within the sequence of video data; determining that the second decoder-side refinement tool is enabled for the first portion of the third picture based on a value of the third instance of the second syntax element; and decoding the first portion of the third picture using the first decoder-side refinement tool and the second decoder-side refinement tool in response to determining that the first decoder-side refinement tool is enabled for the first portion of the third picture and the second decoder-side refinement tool is enabled for the first portion of the third picture.

5. The method of claim 1, further comprising: determining that the first decoder-side refinement tool is enabled for the first portion of the first picture among the plurality of pictures based on a value of a first instance of the first syntax element; and determining that the second decoder-side refinement tool is disabled for the first portion of the first picture among the plurality of pictures based on a value of a first instance of the second syntax element.

6. The method of claim 1, wherein the first and second decoder-side refinement tools are available for decoding any of the plurality of pictures of the sequence of video data, wherein one or both the first and second decoder-side refinement tools are enabled for some portions of pictures among the plurality of pictures within the sequence of video data, and wherein one or both of the first and second decoder-side refinement tools are disabled for other portions of pictures among the plurality of pictures within the sequence of video data.

7. The method of claim 1, further comprising: decoding one or more syntax elements associated with the sequence of video data; and determining, based on the one or more syntax elements associated with the sequence of video data, that the first and second decoder-side refinement tools are enabled for the sequence of video data so as to be available for decoding the plurality of pictures of the sequence of video data.

8. The method of claim 1, wherein the first portion of the first picture comprises one of: a slice of video data; a frame of video data; a picture among the plurality of pictures of the sequence of video data; a sub-picture of video data; and a block of video data.

9. A method of encoding a sequence of video data that includes a plurality of pictures, the method comprising: encoding a first instance of a first syntax element to identify that a first decoder-side refinement tool is enabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; encoding a second instance of the first syntax element to identify that the first decoder-side refinement tool is disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data,

wherein the second picture is different than the first picture, and wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; encoding a first instance of a second syntax element to identify that a second decoder-side refinement tool is disabled for the first portion of the first picture among the plurality of pictures within the sequence of video data; and encoding a second instance of the second syntax element to identify that the second decoder-side refinement tool is enabled for the first portion of the second picture among the plurality of pictures within the sequence of video data.

10. The method of claim 9, wherein the first decoder-side refinement tool comprises a decoder-side motion vector refinement (DMVR) tool and wherein the second decoder-side refinement tool comprises a bi-directional optical flow (BDOF) tool.

11. The method of claim 9, further comprising: encoding a third instance of the first syntax element to identify that the first decoder-side refinement tool is enabled for a first portion of a third picture among the plurality of pictures within the sequence of video data, wherein the third picture is different than the first picture subset and the third picture is different than the second picture; and encoding a third instance of the second syntax element to identify that the second decoder-side refinement tool is enabled for the first portion of the third picture among the plurality of pictures within the sequence of video data.

12. The method of claim 9, wherein one or both the first and second decoder-side refinement tools are enabled for some portions of pictures among the plurality of pictures within the sequence of video data, and wherein one or both of the first and second decoder-side refinement tools are disabled for other portions of pictures among the plurality of pictures within the sequence of video data.

13. The method of claim 9, further comprising: encoding one or more syntax elements associated with the sequence of video data to indicate that the first and second decoder-side refinement tools are enabled for the sequence of video data, wherein one or both the first and second decoder-side refinement tools are enabled for some portions of pictures among the plurality of pictures within the sequence of video data, and wherein one or both of the first and second decoder-side refinement tools are disabled for other portions of pictures among the plurality of pictures within the sequence of video data.

14. The method of claim 9, wherein the first portion of the first picture among the plurality of pictures comprises one or more of: a slice; a frame; a picture; a sub-picture; and a block.

15. A video decoding device comprising: a memory configured to store a sequence of video data that includes a plurality of pictures; and processing circuitry configured to: decode a first syntax element that indicates whether a first decoder-side refinement tool is enabled or disabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; determine that the first decoder-side refinement tool is enabled for the first portion of the first picture based on a value of the first syntax element; decode a

second syntax element that indicates whether a second decoder-side refinement tool is enabled or disabled for the first portion of the first picture among the plurality of pictures with the sequence of video data wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; determine that the second decoder-side refinement tool is disabled for the first portion of the first picture based on a value of the second syntax element; and decode the first portion of the first picture using the first decoder side refinement tool in response to determining that the first decoder-side refinement tool is enabled and in response to determining that the second decoder side refinement tool is disabled for the portion of the first picture.

16. The video decoding device of claim 15, wherein the first decoder-side refinement tool comprises a decoder-side motion vector refinement (DMVR) tool and wherein the second decoder-side refinement tool comprises a bi-directional optical flow (BDOF) tool.

17. The video decoding device of claim 15, wherein the processing circuitry is configured to decode the first syntax element by decoding a first instance of the first syntax element and to decode the second syntax element by decoding a first instance of the second syntax element, the processing circuitry being further configured to: decode a second instance of the first syntax element that indicates whether the first decoder-side refinement tool is enabled or disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data, wherein the second picture is different than the first picture; determine that the first decoder-side refinement tool is disabled for the first portion of the second picture based on a value of the second instance of the first syntax element; decode a second instance of the second syntax element that indicates whether the second decoder-side refinement tool is enabled or disabled for the first portion of the second picture among the plurality of pictures within the sequence of video data; determine that the second decoder-side refinement tool is enabled for the first portion of the second picture based on a value of the second instance of the second syntax element; and decode the first portion of the second picture using the second decoder-side refinement tool in response to determining that the first decoder-side refinement tool is disabled and the second decoder-side refinement tool is enabled for the first portion of the second picture.

18. The video coding device of claim 17, wherein the processing circuitry is further configured to: decode a third instance of the first syntax element that indicates whether the first decoder-side refinement tool is enabled or disabled for a first portion of a third picture among the plurality of pictures within the sequence of video data, wherein the third picture is different than the first picture and the third picture is different than the second picture; determine that the first decoder-side refinement tool is enabled for the first portion of the third picture based on a value of the third instance of the first syntax element; decode a third instance of the second syntax element that indicates whether the second decoder-side refinement tool is enabled or disabled for the first portion of the third picture among the plurality of pictures within the sequence of video data; determine that the second decoder-side refinement tool is enabled for the first portion of the third picture based on a value of the

third instance of the second syntax element; and decode the first portion of the third picture using the first decoder-side refinement tool and the second decoder-side refinement tool in response to determining that the first decoder-side refinement tool is enabled for the first portion of the third picture and in response to determining that the second decoder-side refinement tool is enabled for the first portion of the third picture.

19. The video decoding device of claim 15, wherein the processing circuitry is configured to: determine that the first decoder-side refinement tool is enabled for the first portion of the first picture among the plurality of pictures based on a value of a first instance of the first syntax element; determine that the second decoder-side refinement tool is disabled for the first portion of the first picture among the plurality of pictures based on a value of a first instance of the second syntax element.

20. The video decoding device of claim 15, wherein the first and second decoder-side refinement tools are available for decoding any of the plurality of pictures of the sequence of video data, wherein one or both the first and second decoder-side refinement tools are enabled for some portions of the pictures among the plurality of pictures within the sequence of video data, and wherein one or both of the first and second decoder-side refinement tools are disabled for other portions of pictures among the plurality of pictures within the sequence of video data.

21. The video decoding device of claim 15, wherein the processing circuitry is further configured to: decode one or more syntax elements associated with the sequence of video data; and determine, based on the one or more syntax elements associated with the sequence of video data, that the first and second decoder-side refinement tools are enabled for the sequence of video data so as to be available for decoding the plurality of pictures of the sequence of video data.

22. The video decoding device of claim 17, wherein the first portion of the first picture comprises one of: a slice of video data; a frame of video data; a picture among the plurality of pictures of the sequence of video data; a sub-picture of video data; and a block of video data.

23. A video encoding device comprising: a memory configured to store a sequence of video data that includes a plurality of pictures; and processing circuitry configured to: encode a first instance of a first syntax element to identify that a first decoder-side refinement tool is enabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; encode a second instance of the first syntax element to identify that the first decoder-side refinement tool is disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data, wherein the second picture is different than the first picture, and wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; encode a first instance of a second syntax element to identify that a second decoder-side refinement tool is disabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; and encode a second

instance of the second syntax element to identify that the second decoder-side refinement tool is enabled for a first portion of a second picture among the plurality of pictures within the sequence of video data.

24. The video encoding device of claim 23, wherein the first decoder-side refinement tool comprises a decoder-side motion vector refinement (DMVR) tool and wherein the second decoder-side refinement tool comprises a bi-directional optical flow (BDOF) tool.

25. The video encoding device of claim 23, wherein the processing circuitry is further configured to: encode a third instance of the first syntax element to identify that the first decoder-side refinement tool is enabled for a first portion of a third picture among the plurality of pictures within the sequence of video data, wherein the third picture is different than the first picture and the third picture is different than the second picture; and encode a third instance of the second syntax element to identify that the second decoder-side refinement tool is enabled for the first portion of the third picture among the plurality of pictures within the sequence of video data.

26. The video encoding device of claim 23, wherein one or both the first and second decoder-side refinement tools are enabled for some portions of pictures among the plurality of pictures within the sequence of video data, and wherein one or both of the first and second decoder-side refinement tools are disabled for other portions of pictures among the plurality of pictures within the sequence of video data.

27. The video encoding device of claim 23, wherein the processing circuitry is further configured to: encode one or more syntax elements associated with the sequence of video data to indicate that the first and second decoder-side refinement tools are enabled for the sequence of video data, wherein one or both the first and second decoder-side refinement tools are enabled for some portions of pictures among the plurality of pictures within the sequence of video data, and wherein one or both of the first and second decoder-side refinement tools are disabled for other portions of pictures among the plurality of pictures within the sequence of video data.

28. The video encoding device of claim 23, wherein the first portion of the first picture comprises one of: a slice; a frame; a picture; a sub-picture; and a block.

29. A video decoding device configured to decode a sequence of video data that includes a plurality of pictures, the video decoding device comprising: means for decoding a first syntax element that indicates whether a first decoder-side refinement tool is enabled or disabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; means for determining that the first decoder-side refinement tool is enabled for the first portion of the first picture based on a value of the first syntax element; means for decoding a second syntax element that indicates whether a second decoder-side refinement tool is enabled or disabled for the first portion of the first picture among the plurality of pictures with the sequence of video data, wherein the first decoder side-refinement tool and the

second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; means for determining that the second decoder-side refinement tool is disabled for the first portion of the first picture based on a value of the second syntax element; means for decoding the first portion of the first picture using the first decoder side refinement tool in response to determining that the first decoder-side refinement tool is enabled and in response to determining that the second decoder side refinement tool is disabled for the first portion of the first picture among the plurality of pictures.

30. A video encoding device configured to encode a sequence of video data that includes a plurality of pictures, the video encoding device comprising: means for encoding a first instance of a first syntax element to identify that a first decoder-side refinement tool is enabled for a first portion of a first picture among the plurality of pictures within the sequence of video data; means for encoding a second instance of the first syntax element to identify that the first decoder-side refinement tool is disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data, wherein the second picture is different than the first picture, and wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; means for encoding a first instance of a second syntax element to identify that a second decoder-side refinement tool is disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data; and means for encoding a second instance of the second syntax element to identify that the second decoder-side refinement tool is enabled for the first portion of the second picture among the plurality of pictures within the sequence of video data.

31. A non-transitory computer-readable storage medium storing instructions that, when executed, cause one or more processors of a video decoding device to: decode a first syntax element that indicates whether a first decoder-side refinement tool is enabled or disabled for a first portion of a first picture among a plurality of pictures within a sequence of video data; determine that the first decoder-side refinement tool is enabled for the first portion of the first picture based on a value of the first syntax element; decode a second syntax element that indicates whether a second decoder-side refinement tool is enabled or disabled for the first portion of the first picture among the plurality of pictures with the sequence of video data, wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; determine that the second decoder-side refinement tool is disabled for the first portion of the first picture based on a value of the second syntax element; decode the first portion of the first picture using the first decoder side refinement tool in response to determining that the first decoder-side refinement tool is enabled and in response to determining that the second decoder side refinement tool is disabled for the first portion of the first picture among the plurality of pictures.

32. A non-transitory computer-readable storage medium storing instructions that, when executed, cause one or more processors of a video encoding device to: encode a first instance of a first syntax element to identify that a first decoder-side refinement tool is enabled for a

first portion of a first picture among a plurality of pictures within a sequence of video data; encode a second instance of the first syntax element to identify that the first decoder-side refinement tool is disabled for a first portion of a second picture among the plurality of pictures within the sequence of video data, wherein the second picture is different than the first picture, and wherein the first decoder side-refinement tool and the second decoder-side refinement tool are enabled for refining motion information associated with the plurality of pictures; encode a first instance of a second syntax element to identify that a second decoder-side refinement tool is disabled for the first portion of the first picture among the plurality of pictures within the sequence of video data; and encode a second instance of the second syntax element to identify that the second decoder-side refinement tool is enabled for the first portion of the second picture among the plurality of pictures within the sequence of video data.