CLAIMS:

1. A method, comprising:

encoding, in a bitstream, syntax information indicative of use of an implicit multiple transform selection mode;

obtaining a first indication indicating whether a low frequency non-separable transform is used and a second indication indicating whether matrix-based intra prediction is used;

selecting at least one transform of the multiple transform selection mode based on the first and second indications; and

encoding at least one video block in the bitstream using the selected at least one transform; and

storing, conveying, or transmitting the bitstream comprising the encoded at least one video block.

2. The method of claim 1, wherein in a case where the first indication indicates low frequency non-separable transform is not used and the second indication indicates matrix-based intra prediction mode is not used, selecting the at least one transform comprises selecting the at least one transform based on a size of a transform block.

3. The method of claim 2, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a width of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a horizontal discrete sine transform of type 7 and selecting a horizontal discrete cosine transform of type 2 otherwise.

4. The method of claim 2, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a height of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a vertical discrete

sine transform of type 7 and selecting a vertical discrete cosine transform of type 2 otherwise.

5. The method of claim 1, wherein in a case where the first indication indicates low frequency non-separable transform is used or the second indication indicates matrix-based intra prediction mode is used, selecting the at least one transform comprises selecting a horizontal discrete cosine transform of type 2 and a vertical discrete cosine transform of type 2.

6. An apparatus, comprising:

a processor, configured to perform:

encoding, in a bitstream, syntax information indicative of use of an implicit multiple transform selection mode;

obtaining a first indication indicating whether a low frequency non-separable transform is used and a second indication indicating whether matrix-based intra prediction is used;

selecting at least one transform of the multiple transform selection mode based on the first and second indications; and

encoding at least one video block in the bitstream using the selected at least one transform; and

storing, conveying, or transmitting the bitstream comprising the encoded at least one video block.

7. The apparatus of claim 6, wherein in a case where the first indication indicates low frequency non-separable transform is not used and the second indication indicates matrix-based intra prediction mode is not used, selecting the at least one transform comprises selecting the at least one transform based on a size of a transform block.

8. The apparatus of claim 7, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a width of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a horizontal discrete sine transform of type 7 and selecting a horizontal discrete cosine transform of type 2 otherwise.

9. The apparatus of claim 7, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a height of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a vertical discrete sine transform of type 7 and selecting a vertical discrete cosine transform of type 2 otherwise.

10. The apparatus of claim 6, wherein in a case where the first indication indicates low frequency non-separable transform is used or the second indication indicates matrix-based intra prediction mode is used, selecting the at least one transform comprises selecting a horizontal discrete cosine transform of type 2 and a vertical discrete cosine transform of type 2.

11. A method, comprising:

obtaining from a bitstream syntax information indicative of use of an implicit multiple transform selection mode;

obtaining a first indication indicating whether a low frequency non-separable transform is used and a second indication indicating whether matrix-based intra prediction is used;

selecting at least one transform of the multiple transform selection mode based on the first and second indications; and

decoding at least one video block using the selected at least one transform.

12. The method of claim 11, wherein in a case where the first indication indicates low frequency non-separable transform is not used and the second indication

indicates matrix-based intra prediction mode is not used, selecting the at least one transform comprises selecting the at least one transform based on a size of a transform block.

13. The method of claim 12, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a width of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a horizontal discrete sine transform of type 7 and selecting a horizontal discrete cosine transform of type 2 otherwise.

14. The method of claim 12, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a height of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a vertical discrete sine transform of type 7 and selecting a vertical discrete cosine transform of type 2 otherwise.

15. The method of claim 11, wherein in a case where the first indication indicates low frequency non-separable transform is used or the second indication indicates matrix-based intra prediction mode is used, selecting the at least one transform comprises selecting a horizontal discrete cosine transform of type 2 and a vertical discrete cosine transform of type 2.

16. An apparatus, comprising:

a processor, configured to perform:

obtaining from a bitstream syntax information indicative of use of an implicit multiple transform selection mode;

obtaining a first indication indicating whether a low frequency non-separable transform is used and a second indication indicating whether matrix-based intra prediction is used;

selecting at least one transform of the multiple transform selection mode based on the first and second indications; and

decoding at least one video block using the selected at least one transform.

17. The apparatus of claim 16, wherein in a case where the first indication indicates low frequency non-separable transform is not used and the second indication indicates matrix-based intra prediction mode is not used, selecting the at least one transform comprises selecting the at least one transform based on a size of a transform block.

18. The apparatus of claim 17, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a width of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a horizontal discrete sine transform of type 7 and selecting a horizontal discrete cosine transform of type 2 otherwise.

19. The apparatus of claim 17, wherein selecting the at least one transform based on a size of the transform block comprises in a case where a height of the transform block is greater than or equal to 4 and lower than or equal to 16, selecting a vertical discrete sine transform of type 7 and selecting a vertical discrete cosine transform of type 2 otherwise.

20. The apparatus of claim 16, wherein in a case where the first indication indicates low frequency non-separable transform is used or the second indication indicates matrix-based intra prediction mode is used, selecting the at least one transform comprises selecting a horizontal discrete cosine transform of type 2 and a vertical discrete cosine transform of type 2.

21. A device comprising:

an apparatus according to any one of claims 16 to 20; and

at least one of (i) an antenna configured to receive a signal, the signal including the video block, (ii) a band limiter configured to limit the received signal to a

band of frequencies that includes the video block, and (iii) a display configured to display an output representative of a video block.

22. A computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out the method of any one of claims 1 to 5 and 11 to 15.