CLAIMS

1. A method of decoding video data, the method comprising:

inferring, for a current transform block of a current video block, a transform type from a plurality of transform types that includes one or more discrete cosine transforms (DCTs) and one or more discrete sine transforms (DSTs), wherein inferring the transform type comprises:

determining whether a size of the current transform block satisfies a size threshold, wherein the size of the current transform block satisfies the size threshold where the size of the current transform block is greater than or equal to 4 and less than or equal to 16;

determining whether the current video block is partitioned using intra-subblock partitioning (ISP); and

responsive to determining that the size of the current transform block satisfies the size threshold and that the current video block is partitioned using ISP, selecting a particular DST of the one or more DSTs as the selected transform type, wherein selecting the particular DST comprises selecting the particular DST regardless of an intra prediction mode selected to predict the current video block, wherein the particular DST is a DST-7;

transforming, using the selected transform type, the current transform block to obtain a block of reconstructed residual data for the video block; and

reconstructing, based on the reconstructed residual data for the video block, the video block.

2. The method of claim 1, wherein the one or more DCTs include one or more of a DCT-1, a DCT-2, a DCT-3, a DCT-4, a DCT-5, a DCT-6, a DCT-7, and a DCT-8.

3. The method of claim 2, wherein the one or more DSTs include one or more of a DST-1, a DST-2, a DST-3, a DST-4, a DST-5, a DST-6, the DST-7, and a DST-8.

4. The method of claim 1, further comprising:

responsive to determining that the size of the current transform block does not satisfy the size threshold and that the current video block is partitioned using ISP, selecting a particular DCT of the one or more DCTs as the selected transform type.

5. The method of claim 4, wherein selecting the particular DCT comprises selecting the DCT-2 responsive to determining that the size of the current transform block does not satisfy the size threshold and that the current video block is partitioned using ISP.

6. The method of claim 1, the current transform block comprises:

a width of the current transform block; and

a height of the current transform block.

7. The method of claim 6, wherein selecting the transform type comprises selecting a transform type for horizontal use and selecting a transform type for vertical use, the method further comprising:

selecting the DST-7 as the selected transform type for horizontal use responsive to determining that the width of the current transform block satisfies a width size threshold and that the current video block is partitioned using ISP; and

selecting the DST-7 as the selected transform type for vertical use responsive to determining that the height of the current transform block satisfies a height size threshold and that the current video block is partitioned using ISP.

8. The method of claim 7, wherein the width threshold equals the height threshold.

9. The method of claim 1, wherein inferring the transform type for the current transform block comprises inferring the transform type for the current transform block responsive to determining that multiple transform selection (MTS) is enabled for the current video block.

10. The method of claim 1, wherein determining whether the current video block is partitioned using ISP comprises:

determining, based on values of one or more syntax elements decoded from a video bitstream, whether the current video block is partitioned using ISP.

11. A device for coding video data, the device comprising:

a memory configured to store video blocks; and

one or more processors implemented in circuitry and configured to:

infer, for a current transform block of a current video block, a transform type from a plurality of transform types that includes one or more discrete cosine transforms (DCTs) and one or more discrete sine transforms (DSTs), wherein, to infer the transform type, the one or more processors are configured to:

determine whether a size of the current transform block satisfies a size threshold, wherein the size of the current transform block satisfies the size threshold where the size of the current transform block is greater than or equal to 4 and less than or equal to 16;

determine whether the current video block is partitioned using intra-subblock partitioning (ISP); and

select, responsive to determining that the size of the current transform block satisfies the size threshold and that the current video block is partitioned using ISP a particular DST of the one or more DSTs as the selected transform type, wherein to select the particular DST, the one or more processors are configured to select the particular DST regardless of an intra prediction mode selected to predict the current video block, wherein the particular DST is a DST-7;

transform, using the selected transform type, the current transform block to obtain a block of reconstructed residual data for the video block; and

reconstruct, based on the reconstructed residual data for the video block, the video block.

12. The device of claim 11, wherein the one or more DCTs include one or more of a DCT-1, a DCT-2, a DCT-3, a DCT-4, a DCT-5, a DCT-6, a DCT-7, and a DCT-8.

13. The device of claim 12, wherein the one or more DSTs include one or more of a DST-1, a DST-2, a DST-3, a DST-4, a DST-5, a DST-6, the DST-7, and a DST-8.

14. The device of claim 11, wherein the one or more processors are further configured to:

select, responsive to determining that the size of the current transform block does not satisfy the size threshold and that the current video block is partitioned using ISP, a particular DCT of the one or more DCTs as the selected transform type.

15. The device of claim 14, wherein, to select the particular DCT, the one or more processors are configured to select the DCT-2 responsive to determining that the size of the current transform block does not satisfy the size threshold and that the current video block is partitioned using ISP.

16. The device of claim 11, wherein, to determine the size of the current transform block, the one or more processors are configured to:

determine a width of the current transform block; and

determine a height of the current transform block.

17. The device of claim 16, wherein, to select the transform type, the one or more processors are configured to select a transform type for horizontal use and selecting a transform type for vertical use, and wherein the one or more processors are further configured to:

select the DST-7 as the selected transform type for horizontal use responsive to determining that a width of the current transform block satisfies a width size threshold and that the current video block is partitioned using ISP; and

select the DST-7 as the selected transform type for vertical use responsive to determining that a height of the current transform block satisfies a height size threshold and that the current video block is partitioned using ISP.

18. The device of claim 17, wherein the width threshold equals the height threshold.

19. The device of claim 11, wherein, to infer the transform type for the current transform block, the one or more processors are configured to infer the transform type for the current transform block responsive to determining that multiple transform selection (MTS) is enabled for the current video block.

20. A computer-readable storage medium storing instructions that, when executed, cause one or more processors of a video coding device to:

infer, for a current transform block of a current video block, a transform type from a plurality of transform types that includes one or more discrete cosine transforms (DCTs) and one or more discrete sine transforms (DSTs), wherein the instructions that cause the one or more processors to infer the transform type comprise instructions that cause the one or more processors to:

determine whether a size of the current transform block satisfies a size threshold, wherein the size of the current transform block satisfies the size threshold where the size of the current transform block is greater than or equal to 4 and less than or equal to 16;

determine whether the current video block is partitioned using intra-subblock partitioning (ISP); and

select, responsive to determining that the size of the current transform block satisfies the size threshold and that the current video block is partitioned using ISP a particular DST of the one or more DSTs as the selected transform type, wherein the instructions that cause the one or more processors to select the particular DST comprise instructions that cause the one or more processors to select the particular DST regardless of an intra prediction mode selected to predict the current video block, wherein the particular DST is a DST-7;

transform, using the selected transform type, the current transform block to obtain a block of reconstructed residual data for the video block; and

reconstruct, based on the reconstructed residual data for the video block, the video block.