

WHAT IS CLAIMED IS:

1. A method of video decoding at a video decoder, comprising:

receiving a first high level syntax (HLS) element indicating whether an explicit multiple transform selection (MTS) is enabled or disabled for a first block that is an intra coded block,
wherein transform type information indicating a transform type is derived in the explicit MTS;

receiving a second HLS element indicating whether the explicit MTS is enabled or disabled for a second block that is an inter coded block, wherein the first and second HLS elements control a same set of coding blocks that include the ~~intra-coded~~first block and the ~~inter coded~~second block; and

enabling an implicit MTS for the first block when the first HLS element indicates the explicit MTS is disabled for the first block without considering whether the second HLS element indicates the explicit MTS is enabled or disabled for the second block, wherein no transform type information is signaled by the implicit MTS~~enabling an implicit MTS for the intra-coded block when the first HLS element indicates the explicit MTS is disabled for the intra-coded block, and the second HLS element indicates the explicit MTS is enabled for the inter-coded block.~~

2. The method of claim 1, further comprising:

applying the implicit MTS to the intra coded block, wherein a transform type for processing the intra coded block is determined according to a size of the intra coded block.

3. The method of claim 1, wherein the first or second HLS element is one of:

- a video parameter set (VPS) syntax element,
- a sequence parameter set (SPS) syntax element,
- a picture parameter set (PPS) syntax element,
- a slice header syntax element,
- a tile header syntax element, or
- a tile group header syntax element.

4. The method of claim 1, wherein the intra coded block is not coded with an intra sub-partitioning (ISP) mode.

5. The method of claim 1, further comprising:

receiving a third HLS element indicating an MTS is enabled for each of the inter and intra coded blocks.

~~6. The method of claim 1, wherein transform type information indicating a transform type is derived in the explicit MTS; and~~

~~wherein enabling an implicit MTS for the intra-coded block when the first HLS element indicates the explicit MTS is disabled for the intra-coded block, and the second HLS element indicates the explicit MTS is enabled for the inter-coded block comprises:~~

~~enabling the implicit MTS for the intra-coded block when the first HLS element indicates the explicit MTS is disabled for the intra-coded block without considering whether the second HLS element indicates the explicit MTS is enabled or disabled for the inter-coded block, wherein no transform type information is signaled by the implicit MTS.~~

76. The method of claim 61, wherein the transform type information is derived based on an MTS index signaled in the explicit MTS.

87. A method of video decoding at a video decoder, comprising:

receiving a first high level syntax (HLS) element indicating whether an explicit multiple transform selection (MTS) is enabled or disabled for an intra coded block, wherein transform type information indicating a transform type is derived in the explicit MTS;

receiving a second HLS element indicating whether a Non-separable Secondary Transform (NSST) or matrix-based intra prediction (MIP) is disabled or enabled for the intra coded block; and

enabling an implicit MTS for the intra coded block when both a first condition and a second condition are satisfied, the first condition being the first HLS element indicates the explicit MTS is disabled for the intra coded block, and the second condition being the second HLS element indicates the NSST or the MIP is disabled for the intra coded block, wherein no transform type information is signaled by the implicit MTS.

98. The method of claim 87, further comprising:

disabling the implicit MTS for the intra coded block when the first HLS element indicates the explicit MTS is disabled for the intra coded block, and the second HLS element indicates the NSST or the MIP is enabled for the intra coded block.

~~109.~~ The method of claim ~~87~~, wherein the enabling includes:
enabling the implicit MTS for the intra coded block when the first HLS element indicates the explicit MTS is disabled for the intra coded block, and both the NSST and the MIP are disabled for the intra coded block as indicated by the second HLS element and a third HLS element, respectively~~HLS elements~~.

~~110.~~ The method of claim ~~87~~, further comprising:
applying the implicit MTS to the intra coded block.

~~111.~~ The method of claim ~~87~~, wherein the first or second HLS element is one of:
a video parameter set (VPS) syntax element,
a sequence parameter set (SPS) syntax element,
a picture parameter set (PPS) syntax element,
a slice header syntax element,
a tile header syntax element, or
a tile group header syntax element.

~~112.~~ The method of claim ~~87~~, wherein the intra coded block is not coded with an intra sub-partitioning (ISP) mode.

~~14. The method of claim 8, further comprising:
receiving a third HLS element indicating an MTS is enabled for the intra coded block.~~

~~15. The method of claim 8, wherein transform type information indicating a transform type is derived in the explicit MTS; and no transform type information is signaled by the implicit MTS.~~

~~16~~13. The method of claim ~~15~~7, wherein the transform type information is derived based on an MTS index signaled in the explicit MTS.

~~17~~14. A method of video decoding at a video decoder, comprising:
receiving an intra coded block associated with a first block level syntax element indicating whether a multiple transform selection (MTS) is applied, and a second block level syntax element indicating whether a non-separable secondary transform (NSST) is applied; and
enabling an implicit MTS for the intra coded block when both a first condition and a second condition are satisfied, the first condition being that the first block level syntax element indicates the MTS is not applied, and the second condition being that the second block level syntax element indicates the NSST is not applied, wherein no transform type information is signaled by the implicit MTS.

~~18~~15. The method of claim ~~17~~14, further comprising:
disabling the implicit MTS for the intra coded block when the first block level syntax element indicates the MTS is not applied, and the second block level syntax element indicates the NSST is applied.

~~19~~16. The method of claim ~~17~~14, wherein the intra coded block is associated with a third block level syntax element indicating whether a matrix-based intra prediction (MIP) is applied, and
the enabling further includes enabling the implicit MTS for the intra coded block when the first block level syntax element indicates the MTS is not applied, the second block level syntax element indicates the NSST is not applied, and the third block level syntax element indicates the MIP is not applied.

~~20~~17. The method of claim ~~19~~16, further comprising:
disabling the implicit MTS for the intra coded block when the first block level syntax element indicates the MTS is not applied, and either the second block level syntax element indicates the NSST is applied or the third block level syntax element indicates the MIP is applied.

~~24~~18. The method of claim ~~17~~14, wherein the first block level syntax element indicates the MTS is not applied by indicating DCT-2 transforms are to be used for processing the intra coded block.

~~22~~19. The method of claim ~~17~~14, further comprising:
applying the implicit MTS to the intra coded block.

~~23~~20. The method of claim ~~17~~14, wherein the intra coded block is not coded with an intra sub-partitioning (ISP) mode.

~~24. The method of claim 17, further comprising:
receiving a high level syntax (HLS) element indicating an MTS is enabled for the intra coded block.~~

~~25. The method of claim 17, wherein no transform type information is signaled by the implicit MTS.~~