

CLAIMS

1. A method of video decoding a block of a picture, comprising:
 obtaining a residual signal resulting from inter-picture prediction or intra-picture prediction;
 5 inferring use of a Discrete Cosine Transform type 2 (DCT2) transform core for a block of a sequence of the residual signal;
 processing the transformation of the block using the inferred transform core;
 wherein use of DCT2 is inferred from a sequence level DCT2 enabled flag in a Sequence Parameter Set (SPS);
 10 wherein the sequence level DCT2 enabled flag is comprised in a SPS level syntax as follows:

seq_parameter_set_rbsp() {	Descriptor
...	ue(v)
sps_dct2_enabled_flag	
if (! sps_dct2_enabled_flag) {	
sps_mts_intra_enabled_flag	u(1)
sps_mts_inter_enabled_flag	u(1)
}	
...	u(1)
}	

wherein sps_dct2_enabled_flag represents the sequence level DCT2 enabled flag;

- 15 wherein the sps_mts_intra_enabled_flag equal to 1 specifies that a tu_mts_flag is present in the residual coding syntax for intra coding units, the sps_mts_intra_enabled_flag equal to 0 specifies that the tu_mts_flag is not present in the residual coding syntax for intra coding units; and when the sps_mts_intra_enabled_flag is not present, the sps_mts_intra_enabled_flag is inferred to be 0;

- 20 wherein the sps_mts_inter_enabled_flag equal to 1 specifies that a tu_mts_flag is present in the residual coding syntax for inter coding units, the sps_mts_inter_enabled_flag equal to 0 specifies that the tu_mts_flag is not present in the residual coding syntax for inter coding units, and when the sps_mts_inter_enabled_flag is not present, the sps_mts_inter_enabled_flag is inferred to be 0; and

- 25 wherein the tu_mts_flag is a transform unit multiple transform selection flag; and
 wherein the sequence level DCT2 enabled flag being equal to 0 specifies that other transform cores than DCT2 comprising a Discrete Sine Transform type 7 (DST7) and/or a Discrete Cosine Transform type 8 (DCT8) are used for the transformation.

2. The method according to claim 1,
wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 transform core is used for transformation.

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3. The method according to claim 1 or 2,
wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 transform core is used for transformation, only.

10 4. The method according to any one of claims 1 to 3, wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 is used for both horizontal direction transformation as well as vertical direction transformation.

15 5. The method according to any one of claims 1 to 4, wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 is used in sub block transformation.

6. The method according to any one of claims 1 to 5, wherein the sequence level DCT2 enabled flag being equal to 0
specifies that it is inferred using at least one of DST7 or DCT8 for transformation.

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7. The method according to claim 6,
wherein in case the sequence level DCT2 enabled flag being equal to 0, it is determined whether Multiple Transform Selection for Sequence Parameter Set is enabled via a flag.

25 8. An encoder (20) comprising processing circuitry for carrying out the method according to any one of claims 1 to 7.

9. A decoder (30) comprising processing circuitry for carrying out the method according to any one of claims 1 to 7.

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10. A decoder (20) comprising:
an obtaining unit, configured to obtain a residual signal resulting from inter-picture prediction or intra-picture prediction;
an inferring unit, configured to infer use of a Discrete Cosine Transform type 2 (DCT2)

transform core for a block of a sequence of the residual signal; and

a processing unit, configured to process the transformation of the block using the inferred transform core;

wherein the inferring unit is configured to infer use of DCT2 from a sequence level DCT2

5 enabled flag in a Sequence Parameter Set (SPS);

wherein the sequence level DCT2 enabled flag is comprised in a SPS level syntax as follows:

seq_parameter_set_rbsp() {	Descriptor
...	ue(v)
sps_dct2_enabled_flag	
if (! sps_dct2_enabled_flag) {	
sps_mts_intra_enabled_flag	u(1)
sps_mts_inter_enabled_flag	u(1)
}	
...	u(1)
}	

wherein sps_dct2_enabled_flag represents the sequence level DCT2 enabled flag,

wherein the sps_mts_intra_enabled_flag equal to 1 specifies that a tu_mts_flag is present in

10 the residual coding syntax for intra coding units, the sps_mts_intra_enabled_flag equal to 0 specifies that the tu_mts_flag is not present in the residual coding syntax for intra coding units; and when the sps_mts_intra_enabled_flag is not present, the sps_mts_intra_enabled_flag is inferred to be 0;

wherein the sps_mts_inter_enabled_flag equal to 1 specifies that a tu_mts_flag is present in

15 the residual coding syntax for inter coding units, the sps_mts_inter_enabled_flag equal to 0 specifies that the tu_mts_flag is not present in the residual coding syntax for inter coding units, and when the sps_mts_inter_enabled_flag is not present, the

sps_mts_inter_enabled_flag is inferred to be 0; and wherein the tu_mts_flag is a transform unit multiple transform selection flag; and

20 wherein the sequence level DCT2 enabled flag being equal to 0 specifies that other transform cores than DCT2 comprising a Discrete Sine Transform type 7 (DST7) and/or a Discrete Cosine Transform type 8 (DCT8) are used for the transformation.

11. The decoder according to claim 10,

25 wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 transform core is used for transformation.

12. The decoder according to claim 10 or 11,
 wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 transform core is used for transformation, only.

5 13. The decoder according to any one of claims 10 to 12, wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 is used for both horizontal direction transformation as well as vertical direction transformation.

10 14. The decoder according to any one of claims 10 to 13, wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 is used in sub block transformation.

15 15. The decoder according to any one of claims 10 to 14, wherein the sequence level DCT2 enabled flag being equal to 0 specifies that it is inferred using at least one of DST7 or DCT8 for transformation.

16. The decoder according to claim 15,
 wherein in case the sequence level DCT2 enabled flag being equal to 0, it is determined whether Multiple Transform Selection for Sequence Parameter Set is enabled via a flag.

20 17. An encoder (20) comprising:
 an obtaining unit, configured to obtain a residual signal resulting from inter-picture prediction or intra-picture prediction;
 an inferring unit, configured to infer use of a Discrete Cosine Transform type 2 (DCT2) transform core for a block of a sequence of the residual signal; and
 25 a processing unit, configured to process the transformation of the block using the inferred transform core;
 wherein the inferring unit is configured to infer use of DCT2 from a sequence level DCT2 enabled flag in a Sequence Parameter Set (SPS);
 wherein the sequence level DCT2 enabled flag is comprised in a SPS level syntax as follows:

seq_parameter_set_rbsp() {	Descriptor
...	ue(v)
sps_dct2_enabled_flag	
if (! sps_dct2_enabled_flag) {	
sps_mts_intra_enabled_flag	u(1)
sps_mts_inter_enabled_flag	u(1)

}	
...	u(1)
}	

wherein sps_dct2_enabled_flag represents the sequence level DCT2 enabled flag,

wherein the sps_mts_intra_enabled_flag equal to 1 specifies that a tu_mts_flag is present in the residual coding syntax for intra coding units, the sps_mts_intra_enabled_flag equal to 0 specifies that the tu_mts_flag is not present in the residual coding syntax for intra coding units; and when the sps_mts_intra_enabled_flag is not present, the sps_mts_intra_enabled_flag is inferred to be 0;

wherein the sps_mts_inter_enabled_flag equal to 1 specifies that a tu_mts_flag is present in the residual coding syntax for inter coding units, the sps_mts_inter_enabled_flag equal to 0 specifies that the tu_mts_flag is not present in the residual coding syntax for inter coding units, and when the sps_mts_inter_enabled_flag is not present, the sps_mts_inter_enabled_flag is inferred to be 0; and

wherein the tu_mts_flag is a transform unit multiple transform selection flag; and

wherein the sequence level DCT2 enabled flag being equal to 0 specifies that other transform cores than DCT2 comprising a Discrete Sine Transform type 7 (DST7) and/or a Discrete Cosine Transform type 8 (DCT8) are used for the transformation.

18. The encoder according to claim 17,

wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 transform core is used for transformation.

19. The encoder according to claim 17 or 18,

wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 transform core is used for transformation, only.

20. The encoder according to any one of claims 17 to 19, wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 is used for both horizontal transformation as well as vertical direction transformation.

21. The encoder according to any one of claims 17 to 20, wherein the sequence level DCT2 enabled flag being equal to 1 specifies that DCT2 is used in sub block transformation.

22. The encoder according to claim 17,
wherein the inferring unit is configured to infer using at least one of DST7 or DCT8 for transformation.

5 23. The encoder according to claim 22,
wherein in case the sequence level DCT2 enabled flag being equal to 0, it is determined whether Multiple Transform Selection for Sequence Parameter Set is enabled via a flag.

24. A decoder, comprising:
10 one or more processors; and
a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the decoder to carry out the method according to any one of claims 1 to 7.

15 25. An encoder, comprising:
one or more processors; and
a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by
20 the processors, configures the encoder to carry out the method according to any one of claims 1 to 7.

26. A computer-readable non-transitory medium storing a program, including instructions which when executed on a processor cause the processor to perform the method according to
25 any of claims 1 to 7.

27. A non-transitory storage medium comprising a bitstream encoded by the encoder of claim 17.