Clean Version

Amended Set of Claims 1 to 30

1. A method of coding video data comprising:

maintaining a joint context model shared by a first transform unit having a first size and a second transform unit having a second size, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video block data unit;

selecting contexts for coefficients associated with one of the first transform unit and the second transform unit according to the joint context model; and

entropy coding each of the coefficients of the one of the transform units using non-VLC (variable length coding) entropy coding based on the selected contexts.

2. The method of claim 1, wherein the joint context model comprises the joint context model of a significance map, further comprising:

selecting contexts for components of the significance map associated with the one of the first transform unit having the first size and the second transform unit having the second size according to the joint context model; and

entropy coding the components of the significance map associated with the one of the transform units based on the selected contexts.

3. The method of claim 1, wherein selecting contexts for the coefficients according to the joint context model comprises:

assigning a context in the joint context model to a given one of the coefficients based on values of previously coded neighboring coefficients of the one of the transform units;

determining a probability estimate for a value of the given one of the coefficients associated with the assigned context in the joint context model; and

updating the probability estimate associated with the assigned context in the joint context model based on actual coded values of coefficients of the first transform unit having the first size and the second transform unit having the second size.

4. The method of claim 1, wherein the method comprises a method of decoding video data, further comprising:

ration: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 18 of 26 was completed at 02.11.2012 21:40:05
Received at the EPO on Nov 02, 2012 21:42:16. Page 18 of 26

AMENDED SHEET

receiving a bitstream that represents encoded coefficients associated with the one of the first transform unit having the first size and the second transform unit having the second size;

selecting contexts for the encoded coefficients according to the joint context model: and

entropy decoding the encoded coefficients into the one of the transform units based on the selected contexts.

5. The method of claim 4, further comprising inverse transforming the coefficients of the one of the first transform unit having the first size and the second transform unit having the second size into residual video data.

6. The method of claim 1, wherein the method comprises a method of encoding video data, further comprising:

transforming residual video data into coefficients within the one of the first transform unit having the first size and the second transform unit having the second size;

selecting contexts for the coefficients of the one of the transform units according to the joint context model; and

entropy encoding the coefficients of the one of the transform units based on the selected contexts.

7. The method of claim 1, wherein the first transform unit of the first size comprises a 32x32 transform unit, and wherein the second transform unit of the second size comprises a 16x16 transform unit.

8. The method of claim 1, wherein selecting contexts according to the joint context model comprises:

assigning a context in the joint context model to a first coefficient of the first transform unit having the first size based on values of previously coded neighboring coefficients of the first transform unit;

determining a probability estimate for a value of the first coefficient associated with the assigned context in the joint context model;

ation: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 19 of 26 was completed at 02.11.2012 21:40:21
Received at the EPO on Nov 02, 2012 21:42:16. Page 19 of 26

AMENDED SHEET

updating the probability estimate associated with the assigned context in the joint context model based on an actual coded value of the first coefficient;

assigning the same context in the joint context model to a second coefficient of the second transform unit having the second size based on values of previously coded neighboring coefficients of the second transform unit;

determining a probability estimate for a value of the second coefficient associated with the same assigned context in the joint context model; and

updating the probability estimate associated with the same assigned context in the joint context model based on an actual coded value of the second coefficient.

9. A video coding device comprising:

a memory that stores a joint context model shared by a first transform unit having a first size and a second transform unit having a second size, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video block data unit; and

a processor configured to maintain the joint context model, select contexts for coefficients associated with one of the first transform unit and the second transform unit according to the joint context model, and entropy code each of the coefficients of the one of the transform units using non-VLC (variable length coding) entropy coding based on the selected contexts.

10. The video coding device of claim 9, wherein the joint context model comprises the joint context model of a significance map, wherein the processor is configured to:

select contexts for components of the significance map associated with the one of the first transform unit having the first size and the second transform unit having the second size according to the joint context model; and

entropy code the components of the significance map associated with the one of the transform units based on the selected contexts.

11. The video coding device of claim 9, wherein the processor is configured to:

assign a context in the joint context model to a given one of the coefficients based on values of previously coded neighboring coefficients of the one of the transform units;

ition 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 20 of 26 was completed at 02.11.2012 21:40:41
Received at the EPO on Nov 02, 2012 21:42:16. Page 20 of 26
AMENDED SHEET

determine a probability estimate for a value of the given one of the coefficients associated with the assigned context in the joint context model; and

update the probability estimate associated with the assigned context in the joint context model based on actual coded values of coefficients of the first transform unit having the first size and the second transform unit having the second size.

12. The video coding device of claim 9, wherein the video coding device comprises a video decoding device, wherein the processor is configured to:

receive a bitstream that represents encoded coefficients associated with the one of the first transform unit having the first size and the second transform unit having the second size;

select contexts for the encoded coefficients according to the joint context model; and

entropy decode the encoded coefficients into the one of the transform units based on the selected contexts.

13. The video coding device of claim 12, wherein the processor is configured to inverse transform the coefficients of the one of the first transform unit having the first size and the second transform unit having the second size into residual video data.

14. The video coding device of claim 9, wherein the video coding device comprises a video encoding device, wherein the processor is configured to:

transform residual video data into coefficients within the one of the first transform unit having the first size and the second transform unit having the second size;

select contexts for the coefficients of the one of the transform units according to the joint context model; and

entropy encode the coefficients of the one of the transform units based on the selected contexts.

15. The video coding device of claim 9, wherein the first transform unit of the first size comprises a 32x32 transform unit, and wherein the second transform unit of the second size comprises a 16x16 transform unit.

ion: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 21 of 26 was completed at 02.11.2012 21:40:58
ceived at the EPO on Nov 02, 2012 21:42:16. Page 21 of 26
AMENDED SHEET

16. The video coding device of claim 9, wherein the processor is configured to:

assign a context in the joint context model to a first coefficient of the first transform unit having the first size based on values of previously coded neighboring coefficients of the first transform unit;

determine a probability estimate for a value of the first coefficient associated with the assigned context in the joint context model;

update the probability estimate associated with the assigned context in the joint context model based on an actual coded value of the first coefficient;

assign the same context in the joint context model to the second coefficient of a second transform unit having the second size based on values of previously coded neighboring coefficients of the second transform unit;

determine a probability estimate for a value of the second coefficient associated with the same assigned context in the joint context model; and

update the probability estimate associated with the same assigned context in the joint context model based on an actual coded value of the second coefficient.

17. A video coding device comprising:

means for maintaining a joint context model shared by a first transform unit having a first size and a second transform unit having a second size, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video block data unit;

means for selecting contexts for coefficients associated with one of the first transform unit and the second transform unit according to the joint context model; and

means for entropy coding the coefficients of the one of the transform units using non-VLC (variable length coding) entropy coding based on the selected.

18. The video coding device of claim 17, wherein the joint context model comprises the joint context model of a significance map, further comprising:

means for selecting contexts for components of the significance map associated with the one of the first transform unit having the first size and the second transform unit having the second size according to the joint context model; and

means for entropy coding the components of the significance map associated with the one of the transform units based on the selected contexts.

tion: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 22 of 26 was completed at 02.11.2012 21:41:18
Received at the EPO on Nov 02, 2012 21:42:16. Page 22 of 26
AMENDED SHEET

19. The video coding device of claim 17, further comprising:

means for assigning a context in the joint context model to a given one of the coefficients based on values of previously coded neighboring coefficients of the one of the transform units;

means for determining a probability estimate for a value of the given one of the coefficients associated with the assigned context in the joint context model; and

means for updating the probability estimate associated with the assigned context in the joint context model based on actual coded values of coefficients of the first transform unit having the first size and the second transform unit having the second size.

20. The video coding device of claim 17, wherein the video coding device comprises a video decoding device, further comprising:

means for receiving a bitstream that represents encoded coefficients associated with the one of the first transform unit having the first size and the second transform unit having the second size;

means for selecting contexts for the encoded coefficients according to the joint context model; and

means for entropy decoding the encoded coefficients into the one of the transform units based on the selected contexts.

21. The video coding device of claim 20, further comprising means for inverse transforming the coefficients of the one of the first transform unit having the first size and the second transform unit having the second size into residual video data.

22. The video coding device of claim 17, wherein the video coding device comprises a video encoding device, further comprising:

means for transforming residual video data into coefficients within the one of the first transform unit having the first size and the second transform unit having the second size;

means for selecting contexts for the coefficients of the one of the transform units according to the joint context model; and

Ion: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 23 of 26 was completed at 02.11.2012 21:41:36
Received at the EPO on Nov 02, 2012 21:42:16. Page 23 of 26

AMENDED SHEET

means for entropy encoding the coefficients of the one of the transform units based on the selected contexts.

23. The video coding device of claim 17, wherein the first transform unit of the first size comprises a 32x32 transform unit, and wherein the second transform unit of the second size comprises a 16x16 transform unit.

24. A computer-readable medium comprising instructions for coding video data that, when executed, cause a processor to:

maintain a joint context model shared by a first transform unit having a first size and a second transform unit having a second size, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video block data unit;

select contexts for coefficients associated with one of the first transform unit and the second transform unit according to the joint context model; and

entropy code the coefficients of the one of the transform units using non-VLC (variable length coding) entropy coding based on the selected contexts.

25. The computer-readable medium of claim 24, wherein the joint context model comprises the joint context model of a significance map, further comprising instructions that cause the processor to:

select contexts for components of the significance map associated with the one of the first transform unit having the first size and the second transform unit having the second size according to the joint context model; and

entropy code the components of the significance map associated with the one of the transform units based on the selected contexts.

26. The computer-readable medium of claim 24, further comprising instructions that cause the processor to:

assign a context in the joint context model to a given one of the coefficients based on values of previously coded neighboring coefficients of the one of the transform units;

ion: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 24 of 26 was completed at 02.11.2012 21:41:53
eceived at the EPO on Nov 02, 2012 21:42:16. Page 24 of 26
AMENDED SHEET

determine a probability estimate for a value of the given one of the coefficients associated with the assigned context in the joint context model; and

update the probability estimate associated with the assigned context in the joint context model based on actual coded values of coefficients of the first transform unit having the first size and the second transform unit having the second size.

27. The computer-readable medium of claim 24, wherein the instruction comprises instructions for decoding video data, further comprising instructions that cause the processor to:

receive a bitstream that represents encoded coefficients associated with the one of the first transform unit having the first size and the second transform unit having the second size;

select contexts for the encoded coefficients according to the joint context model; and

entropy decode the encoded coefficients into the one of the transform units based on the selected contexts.

28. The computer-readable medium of claim 27, further comprising instructions that cause the processor to inverse transform the coefficients of the one of the first transform unit having the first size and the second transform unit having the second size into residual video data.

29. The computer-readable medium of claim 24, wherein the instructions comprise instructions for encoding video data, further comprising instructions that cause the processor to:

transform residual video data into coefficients within the one of the first transform unit having the first size and the second transform unit having the second size;

select contexts for the coefficients of the one of the transform units according to the joint context model; and

entropy encode the coefficients of the one of the transform units based on the selected contexts.

ition: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 25 of 26 was completed at 02.11.2012 21:42:10
Received at the EPO on Nov 02, 2012 21:42:16. Page 25 of 26
AMENDED SHEET

30. The computer-readable medium of claim 24, wherein the first transform unit of the first size comprises a 32x32 transform unit, and wherein the second transform unit of the second size comprises a 16x16 transform unit.

tion: 02.11.2012 21:34:25 - 02.11.2012 21:42:16. This page 26 of 26 was completed at 02.11.2012 21:42:16
eceived at the EPO on Nov 02, 2012 21:42:16. Page 26 of 26
AMENDED SHEET

CLAIMS

1. A method of coding video data comprising:

maintaining a plurality of context models for entropy coding transform coefficients of the video data, wherein the plurality of context models includes one or more context models that are each used for a different transform unit size and at least one joint context model used for two or more transform unit sizes;

selecting the joint context model shared by a first transform unit having a first size and a second transform unit having a second size for entropy coding transform coefficients in one of the first transform unit or the second transform unit, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video data unit including a plurality of blocks of transform coefficients;

selecting contexts for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model, wherein selecting contexts for the transform coefficients comprises assigning a context in the joint context model to a given one of the transform coefficients based on values of previously coded neighboring transform coefficients of the one of the transform units, and determining a probability estimate for a value of the given one of the transform coefficients associated with the assigned context in the joint context model; and

entropy coding the transform coefficients of the one of the transform units using context adaptive binary arithmetic coding (CABAC) based on the selected contexts.

2. The method of claim **1**, wherein the joint context model comprises the joint context model of a significance map, further comprising:

selecting contexts for components of the significance map for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model; and

entropy coding the components of the significance map associated with the one of the transform units based on the selected contexts.

3. The method of claim **1**, further comprising updating the probability estimate associated with the assigned context in the joint context model based on actual coded values of transform coefficients of the first transform unit having the first size and the second transform unit having the second size.

4. The method of claim **1**, wherein the method comprises a method of decoding video data, the method further comprising:

receiving a bitstream that represents encoded transform coefficients associated with the one of the first transform unit having the first size or the second transform unit having the second size;

selecting contexts for the encoded transform coefficients according to the joint context model; and

entropy decoding the encoded transform coefficients into the one of the transform units based on the selected contexts.

5. The method of claim **4**, further comprising inverse transforming the transform coefficients of the one of the first transform unit having the first size or the second transform unit having the second size into residual pixel values.

6. The method of claim **1**, wherein the method comprises a method of encoding video data, the method further comprising:

transforming residual pixel values into the transform coefficients within the one of the first transform unit having the first size or the second transform unit having the second size;

selecting contexts for the transform coefficients of the one of the transform units according to the joint context model; and

entropy encoding the transform coefficients of the one of the transform units based on the selected contexts.

7. The method of claim **1**, wherein the first transform unit of the first size comprises a 32×32 transform unit, and wherein the second transform unit of the second size comprises a 16×16 transform unit.

8. The method of claim **1**, wherein selecting contexts according to the joint context model comprises:

assigning a context in the joint context model to a first transform coefficient of the first transform unit having the first size based on values of previously coded neighboring transform coefficients of the first transform unit;

determining a probability estimate for a value of the first transform coefficient associated with the assigned context in the joint context model;

updating the probability estimate associated with the assigned context in the joint context model based on an actual coded value of the first transform coefficient;

assigning the same context in the joint context model to a second transform coefficient of the second transform unit having the second size based on values of previously coded neighboring transform coefficients of the second transform unit;

determining a probability estimate for a value of the second transform coefficient associated with the same assigned context in the joint context model; and

updating the probability estimate associated with the same assigned context in the joint context model based on an actual coded value of the second transform coefficient.

9. The method of claim **1**, further comprising selecting one of the one or more context models for entropy coding transform coefficients in a transform unit having a third size, wherein the third size is different than the first size and the second size.

10. The method of claim **1**, wherein entropy coding the transform coefficients of the one of the transform units using CABAC comprises arithmetically coding the given one of the transform coefficients based on the determined probability estimate for the value of the given one of the transform coefficients associated with the assigned context.

11. A video coding device comprising:

a memory configured to store a plurality of context models for entropy coding transform coefficients of video data, wherein the plurality of context models includes one or more context models that are each used for a different transform unit size and at least one joint context model used for two or more transform unit sizes; and

a processor configured to:

select the joint context model shared by a first transform unit having a first size and a second transform unit having a second size for entropy coding transform coefficients in one of the first transform unit or the

second transform unit, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video data unit including a plurality of blocks of transform coefficients;

select contexts for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model,

wherein the processor is configured to assign a context in the joint context model to a given one of the transform coefficients based on values of previously coded neighboring transform coefficients of the one of the transform units, and determine a probability estimate for a value of the given one of the transform coefficients associated with the assigned context in the joint context model, and

entropy code the transform coefficients of the one of the transform units using context adaptive binary arithmetic coding (CABAC) based on the selected contexts.

12. The video coding device of claim **11**, wherein the joint context model comprises the joint context model of a significance map, wherein the processor is configured to:

select contexts for components of the significance map for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model; and

entropy code the components of the significance map associated with the one of the transform units based on the selected contexts.

13. The video coding device of claim **11**, wherein the processor is configured to update the probability estimate associated with the assigned context in the joint context model based on actual coded values of transform coefficients

of the first transform unit having the first size and the second transform unit having the second size.

14. The video coding device of claim **11**, wherein the video coding device comprises a video decoding device, wherein the processor is configured to:

receive a bitstream that represents encoded transform coefficients associated with the one of the first transform unit having the first size or the second transform unit having the second size;

select contexts for the encoded transform coefficients according to the joint context model; and

entropy decode the encoded transform coefficients into the one of the transform units based on the selected contexts.

15. The video coding device of claim **14**, wherein the processor is configured to inverse transform the transform coefficients of the one of the first transform unit having the first size or the second transform unit having the second size into residual pixel values.

16. The video coding device of claim **11**, wherein the video coding device comprises a video encoding device, wherein the processor is configured to:

transform residual pixel values into the transform coefficients within the one of the first transform unit having the first size or the second transform unit having the second size;

select contexts for the transform coefficients of the one of the transform units according to the joint context model; and

entropy encode the transform coefficients of the one of the transform units based on the selected contexts.

17. The video coding device of claim **11**, wherein the first transform unit of the first size comprises a 32×32 transform unit, and wherein the second transform unit of the second size comprises a 16×16 transform unit.

18. The video coding device of claim **11**, wherein the processor is configured to:

assign a context in the joint context model to a first transform coefficient of the first transform unit having the first size based on values of previously coded neighboring transform coefficients of the first transform unit;

determine a probability estimate for a value of the first transform coefficient associated with the assigned context in the joint context model;

update the probability estimate associated with the assigned context in the joint context model based on an actual coded value of the first transform coefficient;

assign the same context in the joint context model to a second transform coefficient of the second transform unit having the second size based on values of previously coded neighboring transform coefficients of the second transform unit;

determine a probability estimate for a value of the second transform coefficient associated with the same assigned context in the joint context model; and

update the probability estimate associated with the same assigned context in the joint context model based on an actual coded value of the second transform coefficient.

19. The video coding device of claim **11**, wherein the processor is configured to select one of the one or more context models for entropy coding transform coefficients in a transform unit having a third size, wherein the third size is different than the first size and the second size.

20. The video coding device of claim **11**, wherein the processor is configured to arithmetically coding the given one of the transform coefficients based on the determined probability estimate for the value of the one of the transform coefficients associated with the assigned context.

21. A video coding device comprising:

means for maintaining a plurality of context models for entropy coding transform coefficients of video data, wherein the plurality of context models includes one or more context models that are each used for a different transform unit size and at least one joint context model used for two or more transform unit sizes;

means for selecting the joint context model shared by a first transform unit having a first size and a second transform unit having a second size for entropy coding transform coefficients in one of the first transform unit or the second transform unit, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video data unit including a plurality of blocks of transform coefficients;

means for selecting contexts for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model, wherein the means for selecting contexts for the transform coefficients comprise means for assigning a context in the joint context model to a given one of the transform coefficients based on values of previously coded neighboring transform coefficients of the one of the transform units, and means for determining a probability estimate for a value of the given one of the transform coefficients associated with the assigned context in the joint context model; and

means for entropy coding the transform coefficients of the one of the transform units using context adaptive binary arithmetic coding (CABAC) based on the selected contexts.

22. The video coding device of claim **21**, wherein the joint context model comprises the joint context model of a significance map, further comprising:

means for selecting contexts for components of the significance map for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model; and

means for entropy coding the components of the significance map associated with the one of the transform units based on the selected contexts.

23. The video coding device of claim **21**, further comprising means for updating the probability estimate associated with the assigned context in the joint context model based on actual coded values of transform coefficients of the first transform unit having the first size and the second transform unit having the second size.

24. The video coding device of claim **21**, wherein the video coding device comprises a video decoding device, further comprising:

means for receiving a bitstream that represents encoded transform coefficients associated with the one of the first transform unit having the first size or the second transform unit having the second size;

means for selecting contexts for the encoded transform coefficients according to the joint context model; and

means for entropy decoding the encoded transform coefficients into the one of the transform units based on the selected contexts.

25. The video coding device of claim **24**, further comprising means for inverse transforming the transform coefficients of the one of the first transform unit having the first size or the second transform unit having the second size into residual pixel values.

26. The video coding device of claim **21**, wherein the video coding device comprises a video encoding device, further comprising:

means for transforming residual pixel values into the transform coefficients within the one of the first transform unit having the first size or the second transform unit having the second size;

means for selecting contexts for the transform coefficients of the one of the transform units according to the joint context model; and

means for entropy encoding the transform coefficients of the one of the transform units based on the selected contexts.

27. The video coding device of claim **21**, wherein the first transform unit of the first size comprises a 32×32 transform unit, and wherein the second transform unit of the second size comprises a 16×16 transform unit.

28. A non-transitory computer-readable medium comprising instructions for coding video data that, when executed, cause a processor to:

maintain a plurality of context models for entropy coding transform coefficients of the video data, wherein the plurality of context models includes one or more context models that are each used for a different transform unit size and at least one joint context model used for two or more transform unit sizes;

select a joint context model shared by a first transform unit having a first size and a second transform unit having a second size for entropy coding transform coefficients in one of the first transform unit or the second transform unit, wherein the first size and the second size are different, and wherein each of the transform units comprises a residual video data unit including a plurality of blocks of transform coefficients;

select contexts for coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model, wherein the

instructions further cause the processor to assign a context in the joint context model to a given one of the transform coefficients based on values of previously coded neighboring transform coefficients of the one of the transform units, and determine a probability estimate for a value of the given one of the transform coefficients associated with the assigned context in the joint context model; and

entropy code the transform coefficients of the one of the transform units using context adaptive binary arithmetic coding (CABAC) based on the selected contexts.

29. The non-transitory computer-readable medium of claim **28**, wherein the joint context model comprises the joint context model of a significance map, further comprising instructions that cause the processor to:

select contexts for components of the significance map for the transform coefficients associated with the one of the first transform unit or the second transform unit according to the joint context model; and

entropy code the components of the significance map associated with the one of the transform units based on the selected contexts.

30. The non-transitory computer-readable medium of claim **28**, wherein the instructions cause the processor to:

update the probability estimate associated with the assigned context in the joint context model based on actual coded values of transform coefficients of the first transform unit having the first size and the second transform unit having the second size.

31. The non-transitory computer-readable medium of claim **28**, wherein the instruction comprises instructions for decoding video data, further comprising instructions that cause the processor to:

receive a bitstream that represents encoded transform coefficients associated with the one of the first transform unit having the first size or the second transform unit having the second size;

select contexts for the encoded transform coefficients according to the joint context model; and

entropy decode the encoded transform coefficients into the one of the transform units based on the selected contexts.

32. The non-transitory computer-readable medium of claim **31**, further comprising instructions that cause the processor to inverse transform the transform coefficients of the one of the first transform unit having the first size or the second transform unit having the second size into residual pixel values.

33. The non-transitory computer-readable medium of claim **28**, wherein the instructions comprise instructions for encoding video data, further comprising instructions that cause the processor to:

transform residual pixel values into transform coefficients within the one of the first transform unit having the first size or the second transform unit having the second size;

select contexts for the transform coefficients of the one of the transform units according to the joint context model; and

entropy encode the transform coefficients of the one of the transform units based on the selected contexts.

34. The non-transitory computer-readable medium of claim **28**, wherein the first transform unit of the first size comprises a 32×32 transform unit, and wherein the second transform unit of the second size comprises a 16×16 transform unit.