

120434WO

65

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Amended Set of Claims 1 to 45

1. A method of initializing a context used to code video data in a context adaptive entropy coding process, the method comprising:

determining a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

determining a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

determining one or more initialization parameters for a context adaptive entropy coding process based on the first and second initialization parameter index values; and

initializing, based on the one or more initialization parameters, the state of the context used to code video data in the context adaptive entropy coding process.

2. The method of claim 1, wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises calculating the one or more initialization parameters using the first and second initialization parameter index values and one or more formulas.

3. The method of claim 2, wherein calculating the one or more initialization parameters using the first and second initialization parameter index values and the one or more formulas comprises calculating the one or more initialization parameters according to the following equations:

$$\text{slope} = m * 5 - 45; \text{ and}$$

$$\text{intersection} = n * 8 - 16,$$

wherein the slope and intersection terms are initialization parameters and the m and n terms are the first and second initialization parameter index values, respectively.

120434WO

66

Clean Version

4. The method of claim 2, wherein each of the one or more formulas is implemented using only one or more operations each selected from a group consisting of:

- a bit shift operation;
- an add operation;
- a subtract operation;
- a multiply operation; and
- a divide operation.

5. The method of claim 1, wherein the one or more initialization parameters include a slope value and an intersection value, the first initialization parameter index value is a slope index value and the second initialization parameter index value is an intersection index value, and wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises:

- determining the slope value based on the slope index value; and
- determining the intersection value based on the intersection index value.

6. The method of claim 1, wherein the one or more initialization parameters include a slope value and an intersection value, and wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises determining the slope value and the intersection value based on a single index value.

7. (Canceled).

7. The method of claim 6, wherein the single index value comprises a slope index value component and an intersection index value component, and wherein determining the slope value and the intersection value based on the single index value comprises:

- determining the slope value based on the slope index value component; and
- determining the intersection value based on the intersection index value component.

120434WO

67

Clean Version

8. The method of claim 7, wherein the single index value comprises a predetermined number of bits, wherein the slope index value component and the intersection index value component comprise respective subsets of the predetermined number of bits, and wherein the subset that corresponds to the slope index value component includes a different number of the predetermined number of bits than the subset that corresponds to the intersection index value component.
9. (Canceled).
10. The method of claim 1, further comprising:
encoding, based on the initialized context of the context adaptive entropy coding process, one or more syntax elements associated with a block of video data; and
outputting the encoded one or more syntax elements in a bitstream.
11. The method of claim 1, further comprising:
receiving one or more encoded syntax elements associated with a block of video data in a bitstream; and
decoding, based on the initialized context of the context adaptive entropy coding process, the one or more encoded syntax elements.
12. An apparatus for context adaptive entropy coding, the apparatus comprising a coder configured to:
determine a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;
determine a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;
determine one or more initialization parameters for a context adaptive entropy coding process based on the first and second initialization parameter index values; and
initialize, based on the one or more initialization parameters, a state of a context used to code video data in a context adaptive entropy coding process.

120434WO

Clean Version

68

13. The apparatus of claim 12, wherein the coder is configured to calculate the one or more initialization parameters using the first and second initialization parameter index values and one or more formulas.

14. The apparatus of claim 13, wherein to calculate the one or more initialization parameters using the first and second initialization parameter index values and the one or more formulas, the coder is configured to calculate the one or more initialization parameters according to the following equations:

$$\text{slope} = m * 5 - 45; \text{ and}$$

$$\text{intersection} = n * 8 - 16,$$

wherein the slope and intersection terms are initialization parameters and the m and n terms are the first and second initialization parameter index values, respectively.

15. The apparatus of claim 13, wherein each of the one or more formulas is implemented using only one or more operations each selected from a group consisting of:

- a bit shift operation;
- an add operation;
- a subtract operation;
- a multiply operation; and
- a divide operation.

16. The apparatus of claim 12, wherein the one or more initialization parameters include a slope value and an intersection value, the first initialization parameter index value is a slope index value and the second initialization parameter index value is an intersection index value, and wherein to determine the one or more initialization parameters based on the first and second initialization parameter index values, the coder is configured to:

- determine the slope value based on the slope index value; and
- determine the intersection value based on the intersection index value.

17. The apparatus of claim 12, wherein the one or more initialization parameters include a slope value and an intersection value, and wherein to determine the one or more initialization parameters based on the first and second initialization parameter

120434WO

69

Clean Version

index values, the coder is configured to determine the slope value and the intersection value based on a single index value.

18. The apparatus of claim 17, wherein the single index value comprises a slope index value component and an intersection index value component, and wherein to determine the slope value and the intersection value based on the single index value, the coder is configured to:

determine the slope value based on the slope index value component; and
determine the intersection value based on the intersection index value component.

18. (Canceled).

19. The apparatus of claim 17, wherein the single index value comprises a predetermined number of bits, wherein the slope index value component and the intersection index value component comprise respective subsets of the predetermined number of bits, and wherein the subset that corresponds to the slope index value component includes a different number of the predetermined number of bits than the subset that corresponds to the intersection index value component.

20. (Canceled).

21. The apparatus of claim 12, wherein the coder comprises a video encoder, and wherein the video encoder is further configured to:
encode based on the initialized context of the context adaptive entropy coding process, one or more syntax elements associated with a block of video data; and
output the encoded one or more syntax elements in a bitstream.

22. The apparatus of claim 12, wherein the coder comprises a video decoder, and wherein the video decoder is further configured to:
receive one or more encoded syntax elements associated with a block of video data in a bitstream; and
decode the one or more encoded syntax elements based on the initialized context of the context adaptive entropy coding process.

120434WO

70

Clean Version

23. The apparatus of claim 12, wherein the apparatus comprises at least one of:
an integrated circuit;
a microprocessor; and
a wireless communication device that includes the coder.
24. A device for context adaptive entropy coding, the device comprising:
means for determining a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;
means for determining a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;
means for determining one or more initialization parameters for a context adaptive entropy coding process based on the first and second initialization parameter index values;
means for initializing, based on the one or more initialization parameters, the state of the context used to code video data in the context adaptive entropy coding process.
25. The device of claim 24, wherein the means for determining the one or more initialization parameters based on the first and second initialization parameter index values comprises means for calculating the one or more initialization parameters using the first and second initialization parameter index values and one or more formulas.
26. The device of claim 25, wherein calculating the one or more initialization parameters using the first and second initialization parameter index values and the one or more formulas comprises calculating the one or more initialization parameters according to the following equations:
$$\text{slope} = m * 5 - 45; \text{ and}$$
$$\text{intersection} = n * 8 - 16,$$
wherein the slope and intersection terms are initialization parameters and the m and n terms are the first and second initialization parameter index values, respectively.

120434WO

Clean Version

71

27. The device of claim 25, wherein each of the one or more formulas is implemented using only one or more operations each selected from a group consisting of:

- a bit shift operation;
- an add operation;
- a subtract operation;
- a multiply operation; and
- a divide operation.

28. The device of claim 24, wherein the one or more initialization parameters include a slope value and an intersection value, the first initialization parameter index value is a slope index value and the second initialization parameter index value is an intersection index value, and wherein the means for determining the one or more initialization parameters based on the first and second initialization parameter index values comprises:

- means for determining the slope value based on the slope index value; and
- means for determining the intersection value based on the intersection index value.

29. The device of claim 24, wherein the one or more initialization parameters include a slope value and an intersection value, and wherein the means for determining the one or more initialization parameters based on the first and second initialization parameter index values comprises means for determining the slope value and intersection value based on a single index value.

30. The device of claim 29, wherein the single index value comprises a slope index value component and an intersection index value component, and wherein the means for determining the slope value and the intersection value based on the single index value comprises:

- means for determining the slope value based on the slope index value component; and
- means for determining the intersection value based on the intersection index value component.

120434WO

72

Clean Version

30. (Canceled).

31. The device of claim 30, wherein the single index value comprises a predetermined number of bits, wherein the slope index value component and the intersection index value component comprise respective subsets of the predetermined number of bits, and wherein the subset that corresponds to the slope index value component includes a different number of the predetermined number of bits than the subset that corresponds to the intersection index value component.

32. (Canceled).

33. The device of claim 24, further comprising:
means for encoding, based on the initialized context of the context adaptive entropy coding process, one or more syntax elements associated with a block of video data; and
means for outputting the encoded one or more syntax elements in a bitstream.

34. The device of claim 22, further comprising:
means for receiving one or more encoded syntax elements associated with a block of video data in a bitstream; and
means for decoding the one or more encoded syntax elements based on the initialized context of the context adaptive entropy coding process.

120434WO

Clean Version

73

35. A non-transitory computer-readable storage medium having stored thereon instructions that upon execution cause one or more processors to perform context adaptive entropy coding, wherein the instructions cause the one or more processors to:
determine a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

determine a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

determine one or more initialization parameters for a context adaptive entropy coding process based on the first and second initialization parameter index values; and
initialize, based on the one or more initialization parameters, the state of a context used to code video data in a context adaptive entropy coding process.

36. The non-transitory computer-readable storage medium of claim 35, wherein the instructions that cause the one or more processors to determine the one or more initialization parameters based on the first and second initialization parameter index values comprise instructions that cause the one or more processors to calculate the one or more initialization parameters using the first and second initialization parameter index values and one or more formulas.

37. The non-transitory computer readable storage medium of claim 36, wherein to calculate the one or more initialization parameters using the first and second initialization parameter index values and the one or more formulas, the instructions cause the one or more processors to calculate the one or more initialization parameters according to the following equations:

$$\text{slope} = m * 5 - 45; \text{ and}$$

$$\text{intersection} = n * 8 - 16,$$

wherein the slope and intersection terms are initialization parameters and the m and n terms are the first and second initialization parameter index values, respectively.

120434WO

74

Clean Version

38. The non-transitory computer-readable storage medium of claim 36, wherein each of the one or more formulas is implemented using only one or more operations each selected from a group consisting of:

- a bit shift operation;
- an add operation;
- a subtract operation;
- a multiply operation; and
- a divide operation.

39. The non-transitory computer-readable storage medium of claim 35, wherein the one or more initialization parameters include a slope value and an intersection value, the first initialization parameter index value is a slope index value and the second initialization parameter index value is an intersection index value, and wherein the instructions that cause the one or more processors to determine the one or more initialization parameters based on the first and second initialization parameter index values comprise instructions that cause the one or more processors to:

- determine the slope value based on the slope index value; and
- determine the intersection value based on the intersection index value.

40. The non-transitory computer-readable storage medium of claim 35, wherein the one or more initialization parameters include a slope value and an intersection value, and wherein the instructions that cause the one or more processors to determine the one or more initialization parameters based on the first and second initialization parameter index values comprise instructions that cause the one or more processors to determine the slope value and the intersection value based on a single index value.

41. The non-transitory computer-readable storage medium of claim 40, wherein the single index value comprises a slope index value component and an intersection index value component, and wherein the instructions that cause the one or more processors to determine the slope value and the intersection value based on the single index value comprise instructions that cause the one or more processors to:

- determine the slope value based on the slope index value component; and
- determine the intersection value based on the intersection index value

component.

120434WO

75

Clean Version

41. (Canceled).

42. The non-transitory computer-readable storage medium of claim 40, wherein the single index value comprises a predetermined number of bits, wherein the slope index value component and the intersection index value component comprise respective subsets of the predetermined number of bits, and wherein the subset that corresponds to the slope index value component includes a different number of the predetermined number of bits than the subset that corresponds to the intersection index value component.

43. (Canceled).

44. The non-transitory computer-readable storage medium of claim 35, further comprising instructions that cause the one or more processors to:
 encode, based on the initialized context of the context adaptive entropy coding process, one or more syntax elements associated with a block of video data; and
 output the encoded one or more syntax elements in a bitstream.

45. The non-transitory computer-readable storage medium of claim 35, further comprising instructions that cause the one or more processors to:
 receive one or more encoded syntax elements associated with a block of video data in a bitstream; and
 decode the one or more encoded syntax elements based on the initialized context of the context adaptive entropy coding process.

46. The method of claim 1, wherein the one or more initialization parameters include one or more slope values, the first initialization parameter index value includes a slope index value.

47. The apparatus of claim 12, wherein the one or more initialization parameters include one or more slope values, the first initialization parameter index value includes a slope index value.

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76

Clean Version

48. The device of claim 24, wherein the one or more initialization parameters include one or more slope values, the first initialization parameter index value includes a slope index value.

49. The non-transitory computer-readable storage medium of claim 35, wherein the one or more initialization parameters include one or more slope values, the first initialization parameter index includes a slope index value.

50-53. (Canceled).

CLAIMS

1. A method of initializing a context used to decode video data in a context adaptive entropy decoding process, the method comprising:
 - determining a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;
 - determining a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;
 - determining one or more initialization parameters for a context adaptive entropy decoding process based on the first and second initialization parameter index values, wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises calculating the one or more initialization parameters according to the following equations:
 - $\text{slope} = \text{functionA}(m)$; and
 - $\text{intersection} = \text{functionB}(n)$,
 wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the functionA(m) of the slope is $c_0 * m + c_1$ where c_0 and c_1 are the parameters of a linear function; and
 - initializing, based on the one or more initialization parameters, a state of the context used to decode video data in the context adaptive entropy decoding process.
2. The method of claim 1, further comprising:
 - receiving one or more encoded syntax elements associated with a block of the video data in a bitstream; and
 - decoding, based on the initialized context of the context adaptive entropy decoding process, the one or more encoded syntax elements.
3. An apparatus for context adaptive entropy decoding, the apparatus comprising:
 - a storage medium configured to store video data; and
 - one or more processors configured to:

determine a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

determine a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

determine one or more initialization parameters for a context adaptive entropy decoding process based on the first and second initialization parameter index values, wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises calculating the one or more initialization parameters according to the following equations:

$\text{slope} = \text{functionA}(m)$; and

$\text{intersection} = \text{functionB}(n)$,

wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the functionA(m) of the slope is $c0 \cdot m + c1$ where $c0$ and $c1$ are the parameters of a linear function; and

initialize, based on the one or more initialization parameters, a state of a context used to decode the video data in the context adaptive entropy decoding process.

4. The apparatus of claim 3, wherein the one or more processors are further configured to:

receive one or more encoded syntax elements associated with a block of the video data in a bitstream; and

decode the one or more encoded syntax elements based on the initialized context of the context adaptive entropy decoding process.

5. A device for context adaptive entropy decoding, the device comprising:

means for determining a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

means for determining a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

means for determining one or more initialization parameters for a context adaptive entropy decoding process based on the first and second initialization parameter index values, wherein the means for determining the one or more initialization parameters based on the first and second initialization parameter index values comprises means for calculating the one or more initialization parameters according to the following equations:

$$\text{slope} = \text{functionA}(m); \text{ and}$$

$$\text{intersection} = \text{functionB}(n),$$

wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the functionA(m) of the slope is $c0*m+c1$ where c0 and c1 are the parameters of a linear function; and

means for initializing, based on the one or more initialization parameters, a state of the context used to decode video data in the context adaptive entropy decoding process.

6. The device of claim 5, further comprising:

means for receiving one or more encoded syntax elements associated with a block of the video data in a bitstream; and

means for decoding the one or more encoded syntax elements based on the initialized context of the context adaptive entropy decoding process.

7. A computer-readable storage medium having stored thereon instructions that upon execution cause one or more processors to perform context adaptive entropy decoding, wherein the instructions cause the one or more processors to:

determine a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

determine a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

determine one or more initialization parameters for a context adaptive entropy decoding process based on the first and second initialization parameter index values, wherein the instructions cause the one or more processors to determine the one or

more initialization parameters based on the first and second initialization parameter index values comprises the instruction caused the one or more processors to calculate the one or more initialization parameters according to the following equations:

slope = functionA(m); and

intersection = functionB(n),

wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the functionA(m) of the slope is $c0*m+c1$ where c0 and c1 are the parameters of a linear function; and

initialize, based on the one or more initialization parameters, a state of a context used to decode video data in the context adaptive entropy decoding process.

8. The computer-readable storage medium of claim 7, further comprising instructions that cause the one or more processors to:

receive one or more encoded syntax elements associated with a block of the video data in a bitstream; and

decode the one or more encoded syntax elements based on the initialized context of the context adaptive entropy decoding process.

9. A method of initializing a context used to encode video data in a context adaptive entropy encoding process, the method comprising:

determining a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

determining a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

determining one or more initialization parameters for a context adaptive entropy encoding process based on the first and second initialization parameter index values, wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises calculating the one or more initialization parameters according to the following equations:

slope = functionA(m); and

intersection = functionB(n),

wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the function $A(m)$ of the slope is c_0*m+c_1 where c_0 and c_1 are the parameters of a linear function; and

initializing, based on the one or more initialization parameters, a state of the context used to encode the video data in the context adaptive entropy encoding process.

10. An apparatus for context adaptive entropy encoding, the apparatus comprising:
a storage medium configured to store video data; and
one or more processors configured to:

determine a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;

determine a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;

determine one or more initialization parameters for a context adaptive entropy encoding process based on the first and second initialization parameter index values, wherein determining the one or more initialization parameters based on the first and second initialization parameter index values comprises calculating the one or more initialization parameters according to the following equations:

$\text{slope} = \text{functionA}(m)$; and

$\text{intersection} = \text{functionB}(n)$,

wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the function $A(m)$ of the slope is c_0*m+c_1 where c_0 and c_1 are the parameters of a linear function; and

initialize, based on the one or more initialization parameters, a state of a context used to encode the video data in the context adaptive entropy encoding process.

11. A device for context adaptive entropy encoding, the device comprising:
 - means for determining a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;
 - means for determining a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;
 - means for determining one or more initialization parameters for a context adaptive entropy encoding process based on the first and second initialization parameter index values, wherein means for determining the one or more initialization parameters based on the first and second initialization parameter index values comprises means for calculating the one or more initialization parameters according to the following equations:
 - slope = functionA(m); and
 - intersection = functionB(n),
 wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the functionA(m) of the slope is $c0*m+c1$ where $c0$ and $c1$ are the parameters of a linear function; and
 - means for initializing, based on the one or more initialization parameters, a state of the context used to encode video data in the context adaptive entropy encoding process.
12. A computer-readable storage medium having stored thereon instructions that upon execution cause one or more processors to perform context adaptive entropy encoding, wherein the instructions cause the one or more processors to:
 - determine a first initialization parameter index value as $x \gg 4$, where x is an 8-bit parameter;
 - determine a second initialization parameter index value as $x \& 15$, where x is the same 8-bit parameter;
 - determine one or more initialization parameters for a context adaptive entropy encoding process based on the first and second initialization parameter index values, wherein the instruction caused the one or more processors to determine the one or more initialization parameters based on the first and second initialization parameter

index values comprises the instruction caused the one or more processors to calculate the one or more initialization parameters according to the following equations:

slope = functionA(m); and

intersection = functionB(n),

wherein the slope and intersection terms are initialization parameters, the m and n terms are the first and second initialization parameter index values, respectively and the functionA(m) of the slope is $c0*m+c1$ where c0 and c1 are the parameters of a linear function; and

initialize, based on the one or more initialization parameters, a state of a context used to encode video data in the context adaptive entropy encoding process.

13. The method of claim 1 or 9, wherein each of the equations is implemented using only one or more operations each selected from a group consisting of:

a bit shift operation;

an add operation;

a subtract operation;

a multiply operation; and

a divide operation.

14. The method of claim 9, further comprising:

encoding, based on the initialized context of the context adaptive entropy encoding process, one or more syntax elements associated with a block of the video data; and

outputting the encoded one or more syntax elements in a bitstream.

15. The apparatus of claim 3 or 10, wherein each of the equations is implemented using only one or more operations each selected from a group consisting of:

a bit shift operation;

an add operation;

a subtract operation;

a multiply operation; and

a divide operation.

16. The apparatus of claim 10, wherein the one or more processors are further configured to:
- encode, based on the initialized context of the context adaptive entropy encoding process, one or more syntax elements associated with a block of the video data; and
 - output the encoded one or more syntax elements in a bitstream.
17. The apparatus of claim 3 or 10, wherein the apparatus comprises at least one of:
- an integrated circuit;
 - a microprocessor; and
 - a wireless communication device that includes the one or more processors.
18. The device of claim 5 or 11, wherein each of the equations is implemented using only one or more operations each selected from a group consisting of:
- a bit shift operation;
 - an add operation;
 - a subtract operation;
 - a multiply operation; and
 - a divide operation.
19. The device of claim 11, further comprising:
- means for encoding, based on the initialized context of the context adaptive entropy encoding process, one or more syntax elements associated with a block of the video data; and
 - means for outputting the encoded one or more syntax elements in a bitstream.
20. The computer-readable storage medium of claim 7 or 12, wherein each of the equations is implemented using only one or more operations each selected from a group consisting of:
- a bit shift operation;

- an add operation;
- a subtract operation;
- a multiply operation; and
- a divide operation.

21. The computer-readable storage medium of claim 12, further comprising instructions that cause the one or more processors to:
- encode, based on the initialized context of the context adaptive entropy encoding process, one or more syntax elements associated with a block of the video data; and
 - output the encoded one or more syntax elements in a bitstream.