## CLAIMS

1. A decoder for decoding coefficients of blocks of a video sequence from a bitstream, the decoder comprising:

a scan pattern list module configured to provide one or more pre-defined scan orders,

a scan order generator configured to generate one or more scan orders,

a check module configured to reconstruct, for at least one block, hidden information from one or more coefficients of that block, the hidden information constituting or forming part of scan order information associated with that block,

a scan order selector configured to select a scan order for each block from the pre-defined and generated scan orders on the basis of the scan order information associated with that block,

a decoding module configured to decode one or more coefficient vectors of each block from the bitstream,

a deserializer configured to inverse scan, for each block, the one or more coefficient vectors of that block according to the scan order selected for that block so as to obtain a coefficient matrix,

wherein the scan order generator is configured to generate the one or more scan orders depending on one or more previously obtained coefficient matrices of blocks of the video sequence.

2. The decoder according to claim 1,

wherein the scan pattern list module is configured to provide one or more pre-defined scan orders for each of a plurality of coding parameter sets,

the scan order generator is configured to generate a scan order for each of the coding parameter sets depending on one or more previously obtained coefficient matrices associated with that coding parameter set,

the scan order selector is configured to select a scan order for each block by:

determining a coding parameter set of that block, and

selecting the scan order for the coefficient matrix obtained for that block from the pre-defined and generated scan orders for the determined coding parameter set.

3. The decoder according to claim 2, the decoder comprising:

a coefficient distribution estimator configured to provide, for each of the coding parameter sets, a distribution statistics of one or more previously obtained coefficient matrices associated with that coding parameter set,

wherein the scan order generator is configured to generate the scan order for each of the coding parameter sets depending on the distribution statistics for that coding parameter set.

4. The decoder according to claim 3, wherein, if the scan order selected for a given block is pre-defined, the coefficient distribution estimator is configured not to update or is configured to reset the distribution statistics for the coding parameter set of the given block.

5. The decoder according to any one of claims 2 to 4,

wherein the decoding module is configured to parse, for each block, coding parameter information from the bitstream, and

the scan order selector is configured to determine the coding parameter set of a given block according to the parsed coding parameter information for that given block.

6. The decoder according to any one of the preceding claims,

wherein the decoding module is configured to parse the scan order information identifying the selected scan order from the bitstream.

7. A method for decoding coefficients of blocks of a video sequence from a bitstream, the method comprising:

providing one or more pre-defined scan orders,

generating one or more scan orders,

reconstructing, for at least one block, hidden information from one or more coefficients of that block, the hidden information constituting or forming part of scan order information associated with that block,

selecting a scan order for each block from the pre-defined and generated scan orders on the basis of the scan order information associated with that block,

decoding one or more coefficient vectors of each block from the bitstream,

inverse scanning, for each block, the one or more coefficient vectors of that block

according to the scan order selected for that block so as to obtain a coefficient matrix,

wherein generating one or more scan orders comprises generating the one or more scan orders depending on one or more previously obtained coefficient matrices of blocks of the video sequence.

8. An encoder for encoding coefficients of blocks of a video sequence into a bitstream, the coefficients of each block being contained in a respective coefficient matrix, the encoder comprising:

a scan pattern list module configured to provide one or more pre-defined scan orders,

a scan order generator configured to generate one or more scan orders,

a scan order selector configured to select a scan order for each block from the pre-defined and generated scan orders,

a serializer configured to scan, for each block, the coefficient matrix of that block according to the scan order selected for that block so as to obtain one or more coefficient vectors,

a hiding module configured to hide, for at least one block, scan order information identifying the scan order selected for that block at least partially in one or more coefficients of that block,

a coding module configured to code the coefficient vectors into the bitstream,

wherein the scan order generator is configured to generate the one or more scan orders depending on one or more previously scanned coefficient matrices of blocks of the video sequence.

9. The encoder according to claim 8,

wherein the scan pattern list module is configured to provide one or more pre-defined scan orders for each of a plurality of coding parameter sets,

the scan order generator is configured to generate a scan order for each of the coding parameter sets depending on one or more previously scanned coefficient matrices associated with that coding parameter set,

the scan order selector is configured to select a scan order for each block by:

determining a coding parameter set of that block, and

selecting the scan order for the coefficient matrix of that block from the pre-defined and generated scan orders for the determined coding parameter set.

10. The encoder according to claim 9, the encoder comprising:

a coefficient distribution estimator configured to provide, for each of the coding parameter sets, a distribution statistics of one or more previously scanned coefficient matrices associated with that coding parameter set,

wherein the scan order generator is configured to generate the scan order for each of the coding parameter sets depending on the distribution statistics for that coding parameter set.

11. The encoder according to claim 10, wherein, if the scan order selected for a given coefficient matrix is pre-defined, the coefficient distribution estimator is configured not to update or is configured to reset the distribution statistics for the coding parameter set of the given block.

12. The encoder according to any one of claims 8 to 11, comprising a signaling module configured to add scan order information identifying the selected scan order in the bitstream.

13. The encoder according to any one of claims 8 to 12, wherein the scan order selector is configured to select the scan order from the pre-defined and generated scan orders based on a cost function.

14. A method for encoding coefficients of blocks of a video sequence into a bitstream, the coefficients of each block being contained in a respective coefficient matrix, the method comprising:

providing one or more pre-defined scan orders,

generating one or more scan orders,

selecting a scan order for each block from the pre-defined and generated scan orders,

scanning, for each block, the coefficients of that block according to the scan order selected for that block so as to obtain one or more coefficient vectors,

hiding, for at least one block, scan order information identifying the scan order selected for that block at least partially in one or more coefficients of that block, and

coding the coefficient vectors into the bitstream,

wherein generating one or more scan orders comprises generating the one or more

scan orders depending on one or more previously scanned coefficient matrices of blocks of the video sequence.

15. The decoder according to claim 1, wherein the check module is configured to reconstruct, for at least one block, the hidden information from at least one hiding coefficient vector chosen from among the one or more coefficient vectors obtained for that block.

16. The decoder according to claim 15,

wherein the check module is configured to reconstruct, for at least one block, the hidden information from the hiding coefficient vector depending on a hiding condition,

the hiding condition comprising comparing a parameter to a threshold depending on the hiding coefficient vector.

17. The decoder according to claim 16, wherein the parameter is:

a number of significant coefficients within the hiding coefficient vector, or

a distance between first and last significant coefficients within the hiding coefficient vector, or

a ratio of a maximum absolute value to a minimum absolute non-zero value of the coefficients within the hiding coefficient vector,

wherein the hiding condition is true if the parameter is above the threshold, and false if the parameter is below the threshold.

18. The decoder according to claim 16 or 17, wherein the check module is configured to check the hiding condition, and to reconstruct the hidden information from the hiding coefficient vector if the hiding condition is true.

19. The decoder according to any one of claims 16 to 18, wherein, if the hiding condition is false, the scan order selector is configured to select a pre-defined default scan order.

20. The decoder according to any one of claims 15 to 19,

wherein the check module is configured to reconstruct the hidden information from the hiding coefficient vector by applying a check-function to the hiding coefficient vector,

a result of the check-function being the hidden information.

21. The decoder according to claim 20, wherein the result of the check-function depends on coordinates (x, y), within the coefficient matrix, of a last significant coefficient of the hiding coefficient vector, particularly the check-function being the following function:

mod (x + y + R, 2)

x and y being the coordinates, and R being an integer value.

22. The decoder according to any one of claims 1 or 15 to 21,

wherein the check module is configured to reconstruct, for a first block, hidden information from one or more coefficients of the first block, the hidden information constituting or forming part of scan order information associated with the first block, and

the scan order selector is configured to select, for the first and at least a second block, a scan order on the basis of the scan order information associated with the first block.

23. The encoder according to claim 8, wherein the hiding module is configured to hide, for at least one block, the scan order information in at least one hiding coefficient vector chosen from among the one or more coefficient vectors obtained for that block.

24. The encoder according to claim 23,

wherein the hiding module is configured to hide, for at least one block, the scan order information in the hiding coefficient vector depending on a hiding condition,

the hiding condition comprising comparing a parameter to a threshold depending on the hiding coefficient vector.

25. The encoder according to claim 24, wherein the parameter is:

a number of significant coefficients within the hiding coefficient vector, or

a distance between first and last significant coefficients within the hiding coefficient vector, or

a ratio of a maximum absolute value to a minimum absolute non-zero value of the coefficients within the hiding coefficient vector,

wherein the hiding condition is true if the parameter is above the threshold, and false if the parameter is below the threshold.

26. The encoder according to claim 24 or 25, wherein the hiding module is configured to check the hiding condition, and to hide the scan order information in the hiding coefficient vector if the hiding condition is true.

27. The encoder according to any one of claims 24 to 26, wherein, if the hiding condition is false, the scan order selector is configured to, recursively, select another scan order from the set of scan orders until the hiding condition for that other selected scan order is true.

28. The encoder according to any one of claims 24 to 27, wherein, if the hiding condition is false and the selected scan order is a pre-defined default scan order, the hiding module is configured not to hide the scan order information in the hiding coefficient vector.

29. The encoder according to any one of claims 23 to 28, wherein the hiding module is configured to hide, for at least one block, the scan order information in the hiding coefficient vector by:

applying a check-function to the hiding coefficient vector so as to obtain a result of the check-function,

determine whether the result of the check-function corresponds to the scan order information,

if not, modify the hiding coefficient vector so that the result of the check-function corresponds to the scan order information.

30. The encoder according to claim 29, wherein the result of the check-function depends on coordinates (x, y), within the coefficient matrix, of a last significant coefficient of the hiding coefficient vector, particularly the check-function being the following function:

mod (x + y + R, 2)

x and y being the coordinates, and R being an integer value.

31. The encoder according to any one of claims 8 or 23 to 30, wherein, if an identical scan order is selected by the scan order selector for a first and at least a second block, the hiding module is configured to hide scan order information identifying the identical scan order in one or more coefficients of only the first block.

32. A computer program comprising a program code for performing the method according to claim 7 or 14, when the computer program runs on a computing device.