CLAIMS

What is claimed is:

1. A method for encoding video data, comprising:

acquiring at least two coding units in an image frame in video data;

acquiring motion vector information of each coding unit of the at least two coding units;

determining overall average vector information of the image frame based on the motion vector information of each coding unit;

determining component average vector information of the image frame in a reference direction based on component vector information of the motion vector information of each coding unit in the reference direction;

determining a frame execution policy of the image frame for a motion search operation in the reference direction according to the overall average vector information and the component average vector information, wherein the frame execution policy indicating a frame enable execution policy or a frame disable execution policy, by:

determining a ratio between the component average vector information and the overall average vector information as a frame component proportion value;

in response to the frame component proportion value being greater than or equal to a first proportion threshold or the frame component proportion value being less than or equal to a second proportion threshold, determining that the frame execution policy of the image frame is the frame enable execution policy, wherein the first proportion threshold is greater than the second proportion threshold;

in response to the frame component proportion value being less than the first proportion threshold and greater than the second proportion threshold, determining that the frame execution policy of the image frame is the frame disable execution policy; and

encoding, by the device, the image frame according to the determined frame execution policy.

2. The method according to claim 1, wherein the determining the overall average vector information of the image frame based on the motion vector information of each coding unit comprises:

acquiring horizontal component vector information and vertical component vector information

in the motion vector information of each coding unit;

determining a motion vector value corresponding to each coding unit based on the horizontal component vector information and vertical component vector information corresponding to each coding unit; and

determining the overall average vector information according to the motion vector value corresponding to each coding unit and a unit number of the at least two coding units.

3. The method according to claim 1, wherein the reference direction comprises a horizontal reference direction; the component vector information of the motion vector information of each coding unit in the reference direction comprises horizontal component vector information; and

the determining component average vector information of the image frame in the reference direction based on the component vector information of the motion vector information of each coding unit in the reference direction comprises:

acquiring the horizontal component vector information of the motion vector information of each coding unit in the horizontal reference direction,

determining a horizontal component value corresponding to each coding unit according to the horizontal component vector information of each coding unit in the horizontal reference direction, and

determining the component average vector information according to the horizontal component value corresponding to each coding unit and a unit number of the at least two coding units.

4. The method according to claim 1, wherein the reference direction comprises a vertical reference direction; the component vector information of the motion vector information of each coding unit in the reference direction comprises vertical component vector information; and

the determining component average vector information of the image frame in the reference direction based on the component vector information of the motion vector information of each coding unit in the reference direction comprises:

acquiring the vertical component vector information of the motion vector information of each coding unit in the vertical reference direction,

determining a vertical component value corresponding to each coding unit according to the vertical component vector information of each coding unit in the vertical reference direction,

and

determining the component average vector information according to the vertical component value corresponding to each coding unit and a unit number of the at least two coding units.

5. The method according to claim 1, further comprising:

in response to determining that the frame execution policy of the image frame is the frame enable execution policy, determining a motion vector value and a component vector value of each coding unit according to the motion vector information of each coding unit; and

determining a unit execution policy of each coding unit for the motion search operation according to the motion vector value and the component vector value corresponding to each coding unit.

6. The method according to claim 5, wherein the unit execution policy is a unit enable execution policy or a unit disable execution policy; the at least two coding units comprise a coding unit bi, i being a positive integer less than or equal to a unit number of the at least two coding units; and

the determining a unit execution policy of each coding unit for the motion search operation according to the motion vector value and component vector value corresponding to each coding unit comprises:

determining a ratio between a component vector value corresponding to the coding unit bi and a motion vector value corresponding to the coding unit bi as a unit component proportion value corresponding to the coding unit bi,

in response to determining that unit component proportion value is greater than or equal to a third proportion threshold or the unit component proportion value is less than or equal to a fourth proportion threshold, determining that the unit execution policy of the coding unit bi for the motion search operation is the unit enable execution policy, wherein the third proportion threshold is greater than the fourth proportion threshold, and

in response to determining that the unit component proportion value is less than the third proportion threshold and greater than the fourth proportion threshold, determining that the unit execution policy of the coding unit bi for the motion search operation is the unit disable execution policy.

7. The method according to claim 1, wherein the acquiring motion vector information of each

coding unit of the at least two coding units comprises:

acquiring a reference image frame of the image frame;

acquiring a predicted image block similar to each coding unit from the reference image frame; and

determining the motion vector information of each coding unit according to a relative shift between each coding unit and a corresponding predicted image block, and a motion vector accuracy.

8. The method according to claim 7, further comprising:

framing video data to obtain multiple image frames in the video data; and

determining the image frame from the multiple image frames, wherein

the acquiring a reference image frame of the image frame comprises:

acquiring an image frame adjacent to the image frame from the multiple image frames as the reference image frame.

9. The method according to claim 8, further comprising:

coding the video data based on the determined frame execution policy of the image frame for the motion search operation to obtain coded data of the video data; and

synchronizing the coded data to a video client such that the video client decodes the coded data to obtain decoded data of the video data and plays the decoded data.

10. The method according to any of claims 1-9, further comprising:

dividing the image frame into at least two coding regions;

performing region division on each of the at least two coding regions to obtain a coding unit that belongs to each coding region; and

determining the coding unit that belongs to each coding region as the at least two coding units in the target image frame.

11. An apparatus for encoding video data, comprising:

a motion information acquisition module, configured to acquire at least two coding units in an image frame in video data, and acquire motion vector information of each coding unit of the at least two coding units;

an overall information determination module, configured to determine overall average vector information of the image frame based on the motion vector information of each coding unit;

a component information determination module, configured to determine component average vector information of the image frame in a reference direction based on component vector information of the motion vector information of each coding unit in the reference direction;

a policy determination module, configured to determine a frame execution policy of the image frame for a motion search operation in the reference direction according to the overall average vector information and the component average vector information, wherein the frame execution policy indicating a frame enable execution policy or a frame disable execution policy, by:

determining a ratio between the component average vector information and the overall average vector information as a frame component proportion value;

in response to the frame component proportion value being greater than or equal to a first proportion threshold or the frame component proportion value being less than or equal to a second proportion threshold, determining that the frame execution policy of the image frame is the frame enable execution policy, wherein the first proportion threshold is greater than the second proportion threshold;

in response to the frame component proportion value being less than the first proportion threshold and greater than the second proportion threshold, determining that the frame execution policy of the image frame is the frame disable execution policy; and

encoding, by the device, the image frame according to the determined frame execution policy.

12. The apparatus according to claim 11, wherein the overall information determination module comprises:

a component information acquisition unit, configured to acquire horizontal component vector information and vertical component vector information in the motion vector information of each coding unit;

a vector value determination unit, configured to determine a motion vector value corresponding to each coding unit based on the horizontal component vector information and vertical component vector information corresponding to each coding unit; and

an overall information determination unit, configured to determine the overall average vector information according to the motion vector value corresponding to each coding unit and a unit number of the at least two coding units.

13. The apparatus according to claim 11, wherein the reference direction comprises a horizontal reference direction; the component vector information of the motion vector information of each coding unit in the reference direction comprises horizontal component vector information; and

the component information determination module comprises:

a horizontal component acquisition unit, configured to acquire the horizontal component vector information of the motion vector information of each coding unit in the horizontal reference direction,

a horizontal value determination unit, configured to determine a horizontal component value corresponding to each coding unit according to the horizontal component vector information of each coding unit in the horizontal reference direction, and

a horizontal information determination unit, configured to determine the component average vector information according to the horizontal component value corresponding to each coding unit and a unit number of the at least two coding units.

14. The apparatus according to claim 11, wherein the reference direction comprises a vertical reference direction; the component vector information of the motion vector information of each coding unit in the reference direction comprises vertical component vector information; and

the component information determination module comprises:

a vertical component acquisition unit, configured to acquire the vertical component vector information of the motion vector information of each coding unit in the vertical reference direction,

a vertical value determination unit, configured to determine a vertical component value corresponding to each coding unit according to the vertical component vector information of each coding unit in the vertical reference direction, and

a vertical information determination unit, configured to determine the component average vector information according to the vertical component value corresponding to each coding unit and a unit number of the at least two coding units.

15. The apparatus according to claim 11, further comprising:

a unit value determination module, configured to: in response to determining that the frame execution policy of the image frame is the frame enable execution policy, determine a motion vector value and a component vector value of each coding unit according to the motion vector

information of each coding unit; and

a unit policy determination module, configured to determine a unit execution policy of each coding unit for the motion search operation according to the motion vector value and the component vector value corresponding to each coding unit.

16. A computer device, comprising a memory and a processor, the memory storing a computer program, the computer program, when executed by the processor, causing the processor to perform operations of the method according to any one of claims 1 to 10.

17. A computer-readable storage medium, storing a computer-readable program, the computer program comprising program instructions, the program instructions, when executed by a processor, performing the method according to any one of claims 1 to 10.

18. A computer program product, comprising computer-executable instructions, the instructions, when executed by a processor, implementing the method according to any one of claims 1-10.