
Skip
2N×2N
Intra
2N×2N
N×N
Inter
2N×2N
2N×N
N×2N
N×N
2N×nU
2N×nD
nL×2N
nR×2N
Skip
2N×2N
Intra
2N×2N
N×N
Inter
2N×2N
2N×N
N×2N
N×N
2N×nU
2N×nD
nL×2N
nR×2N

FIG. 1

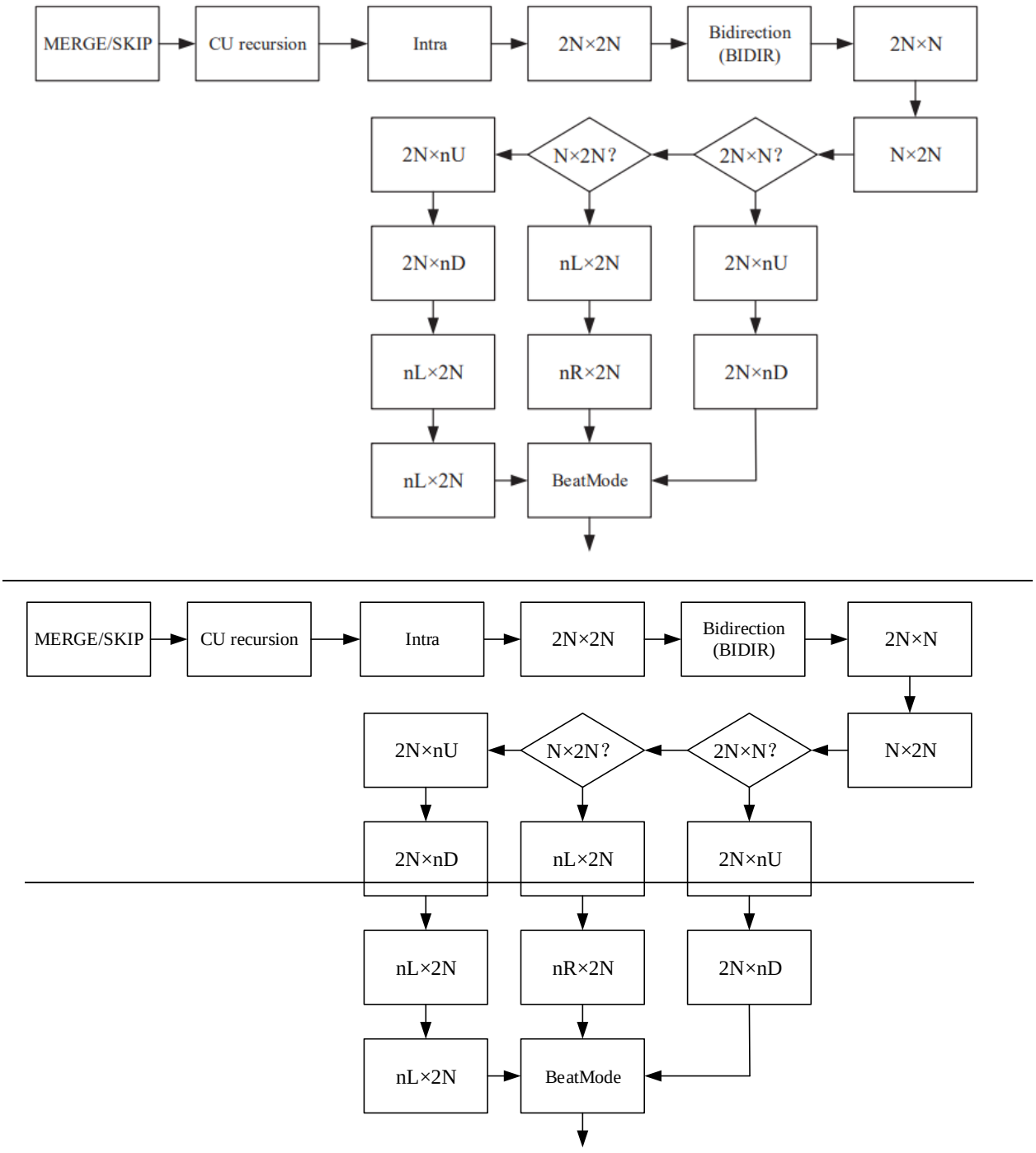

MERGE/SKIP
CU recursion
Intra
2N×2N
Bidirection (BIDIR)
2N×N
N×2N
2N×N?
N×2N?
2N×nU
2N×nD
nL×2N
nR×2N
BeatMode

FIG. 2

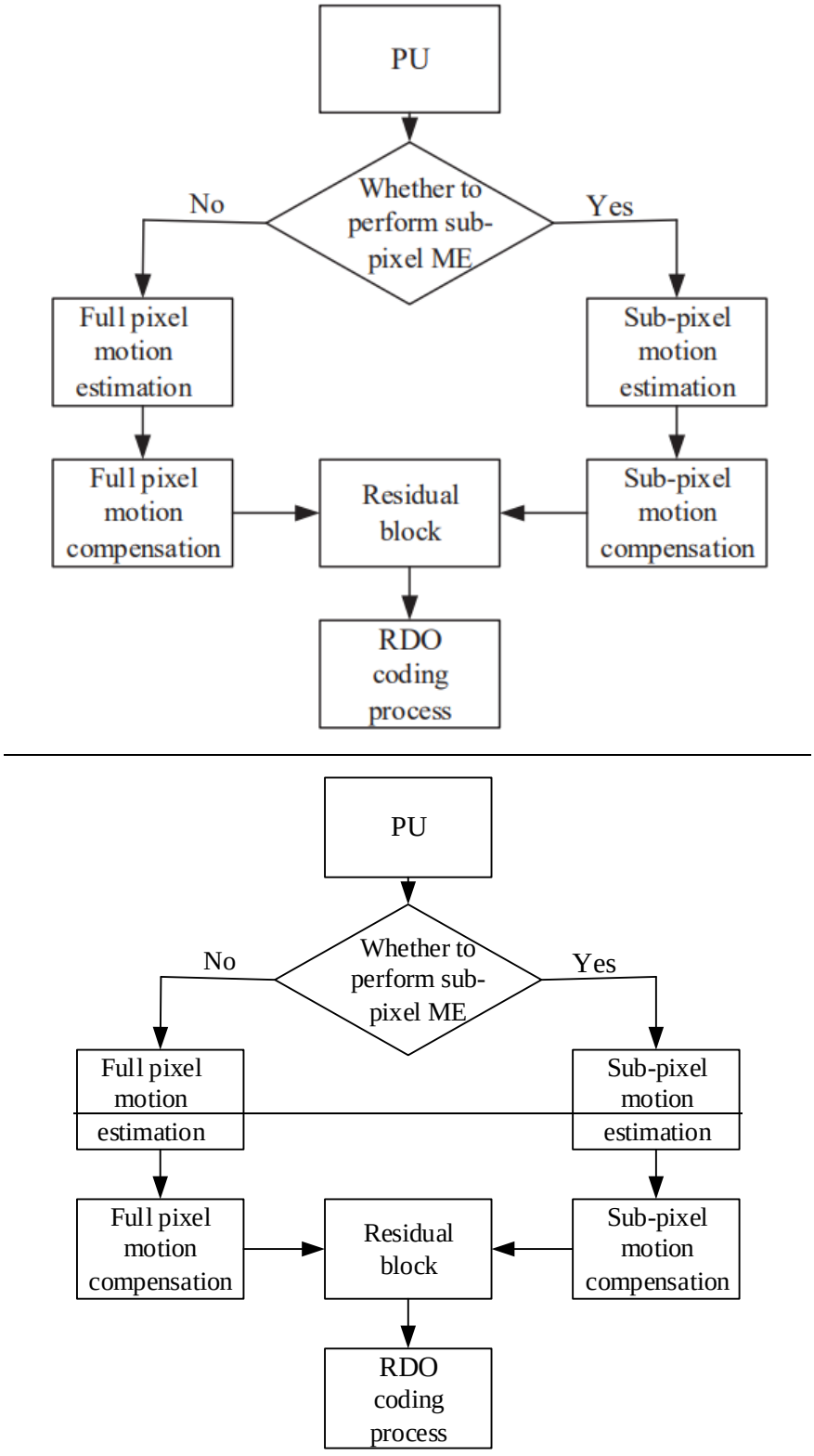

PU
Whether to perform sub-pixel ME
No
Yes
Full pixel motion estimation
Sub-pixel motion estimation
Full pixel motion compensation
Residual block
Sub-pixel motion compensation
RDO coding process
PU
Whether to perform sub-pixel ME
No
Yes
Full pixel motion estimation
Sub-pixel motion estimation
Full pixel motion compensation
Residual block
Sub-pixel motion compensation
RDO coding process

FIG. 3

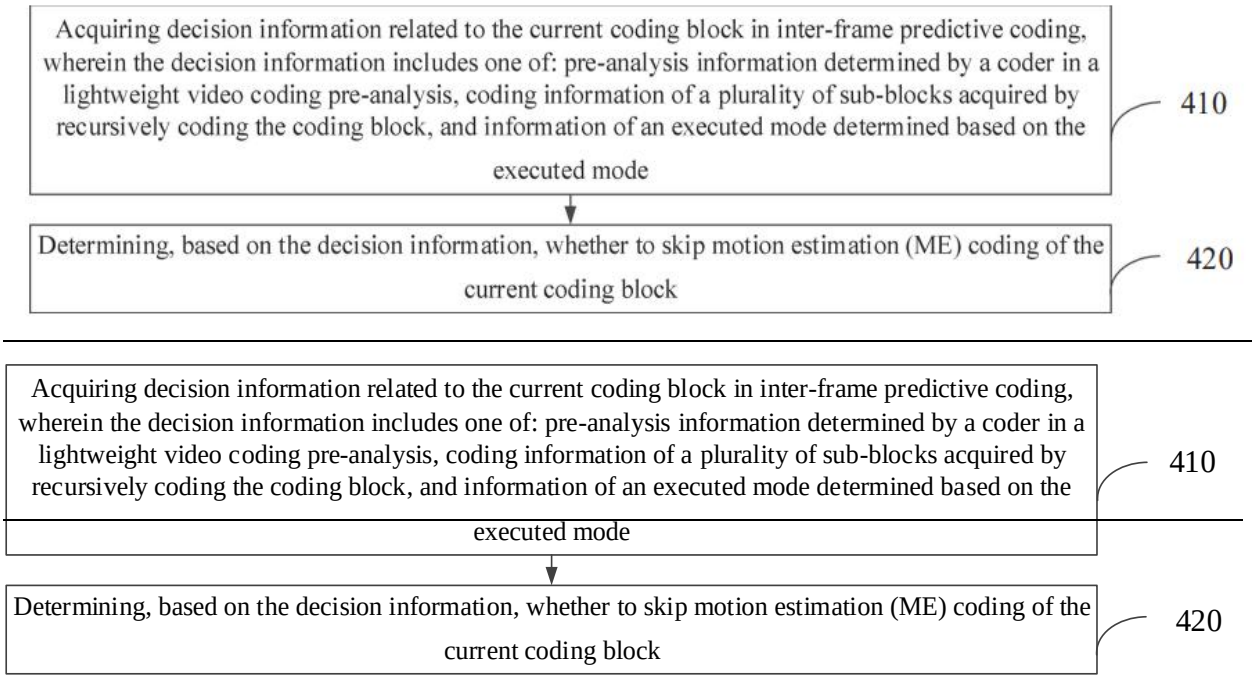

Acquiring decision information related to the current coding block in inter-frame predictive coding, wherein the decision information includes one of: pre-analysis information determined by a coder in a lightweight video coding pre-analysis, coding information of a plurality of sub-blocks acquired by recursively coding the coding block, and information of an executed mode determined based on the executed mode
410
Determining, based on the decision information, whether to skip motion estimation (ME) coding of the current coding block
420
Acquiring decision information related to the current coding block in inter-frame predictive coding, wherein the decision information includes one of: pre-analysis information determined by a coder in a lightweight video coding pre-analysis, coding information of a plurality of sub-blocks acquired by recursively coding the coding block, and information of an executed mode determined based on the executed mode
410
Determining, based on the decision information, whether to skip motion estimation (ME) coding of the current coding block
420

FIG. 4

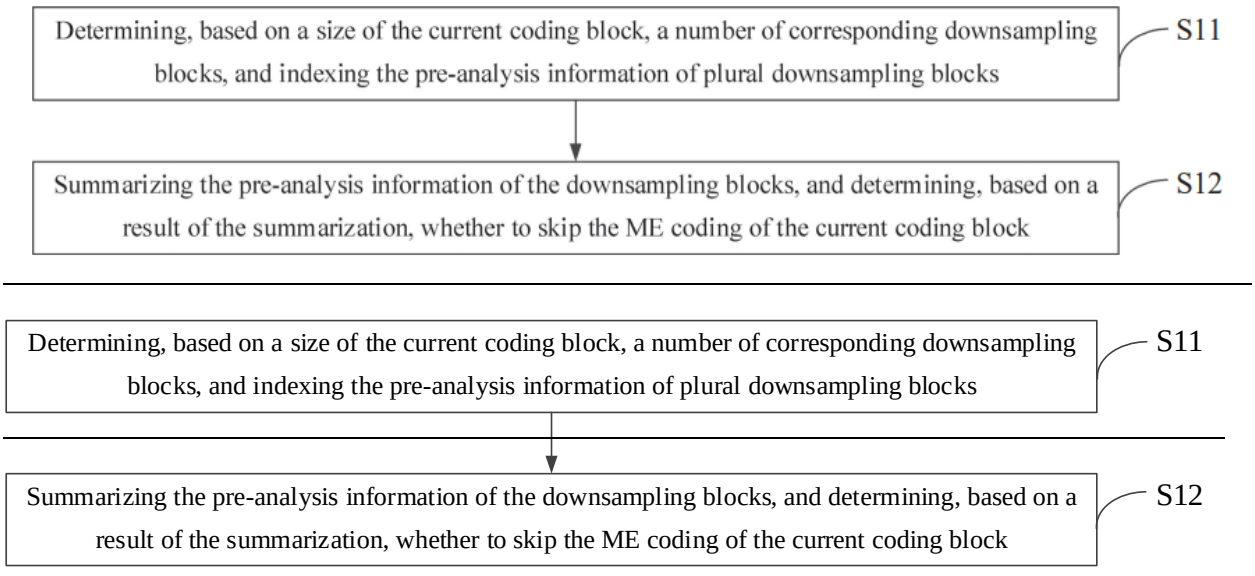

Determining, based on a size of the current coding block, a number of corresponding downsampling blocks, and indexing the pre-analysis information of plural downsampling blocks
S11
Summarizing the pre-analysis information of the downsampling blocks, and determining, based on a result of the summarization, whether to skip the ME coding of the current coding block
S12
Determining, based on a size of the current coding block, a number of corresponding downsampling blocks, and indexing the pre-analysis information of plural downsampling blocks
S11
Summarizing the pre-analysis information of the downsampling blocks, and determining, based on a result of the summarization, whether to skip the ME coding of the current coding block
S12

FIG. 5

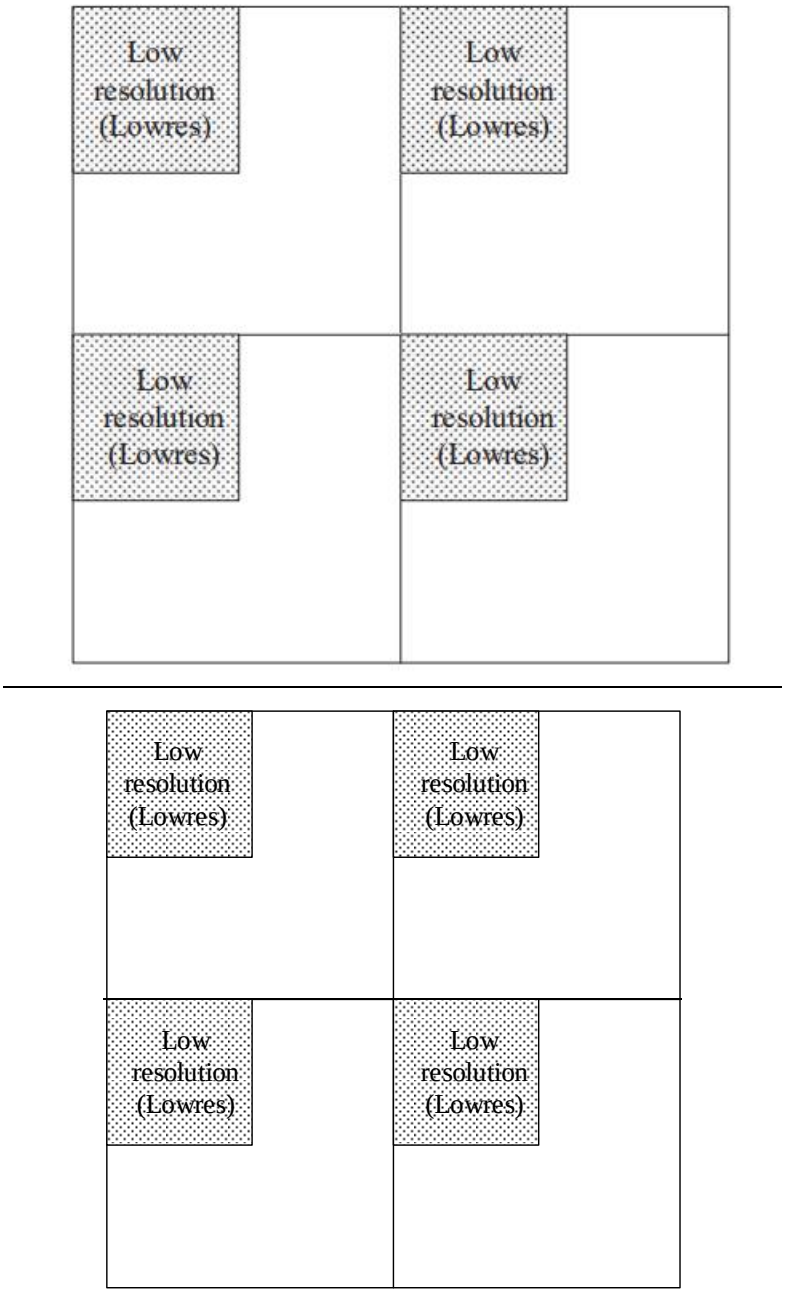

Low resolution (Lowres)
Low resolution (Lowres)
Low resolution (Lowres)
Low resolution (Lowres)
Low resolution (Lowres)
Low resolution (Lowres)
Low resolution (Lowres)
Low resolution (Lowres)

FIG. 6

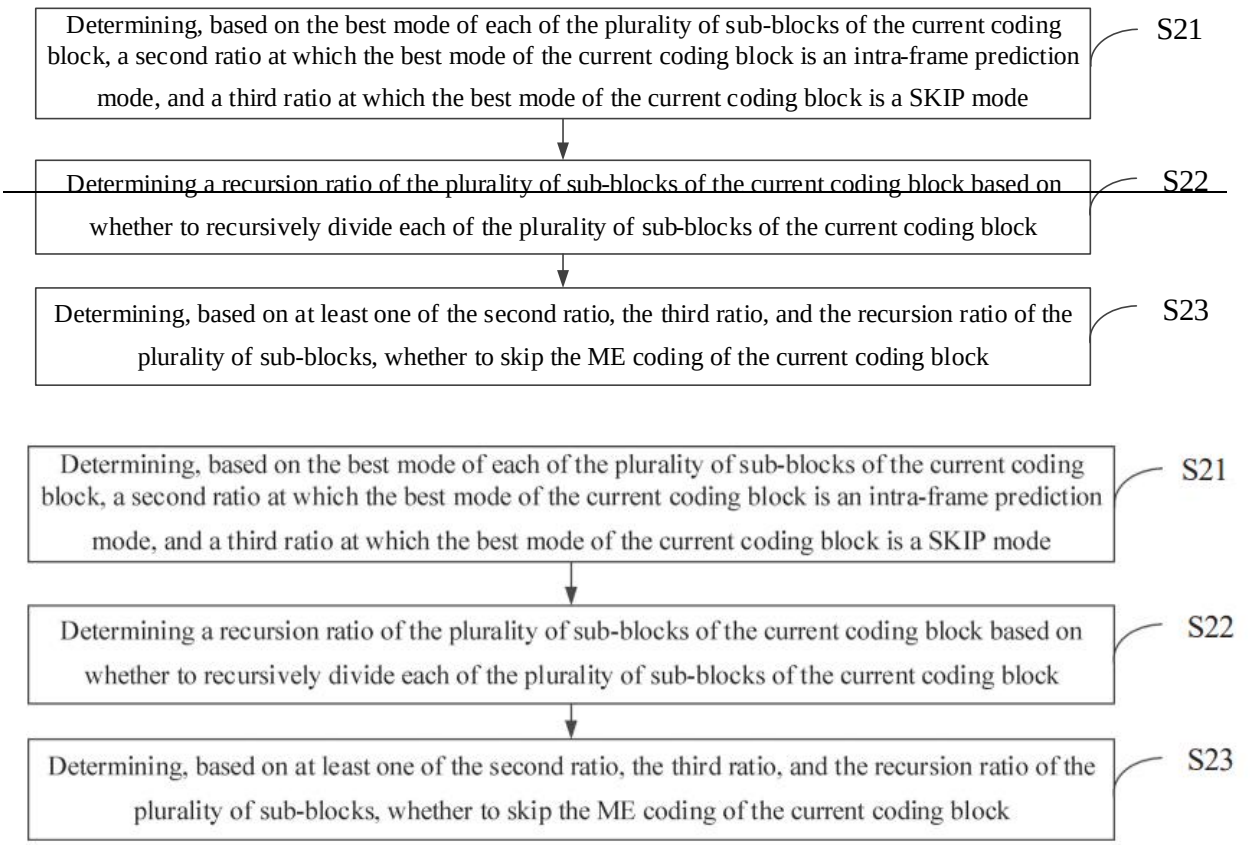

Determining, based on the best mode of each of the plurality of sub-blocks of the current coding block, a second ratio at which the best mode of the current coding block is an intra-frame prediction mode, and a third ratio at which the best mode of the current coding block is a SKIP mode
S21
Determining a recursion ratio of the plurality of sub-blocks of the current coding block based on whether to recursively divide each of the plurality of sub-blocks of the current coding block
S22
Determining, based on at least one of the second ratio, the third ratio, and the recursion ratio of the plurality of sub-blocks, whether to skip the ME coding of the current coding block
S23
Determining, based on the best mode of each of the plurality of sub-blocks of the current coding block, a second ratio at which the best mode of the current coding block is an intra-frame prediction mode, and a third ratio at which the best mode of the current coding block is a SKIP mode
S21
Determining a recursion ratio of the plurality of sub-blocks of the current coding block based on whether to recursively divide each of the plurality of sub-blocks of the current coding block
S22
Determining, based on at least one of the second ratio, the third ratio, and the recursion ratio of the plurality of sub-blocks, whether to skip the ME coding of the current coding block
S23

FIG. 7

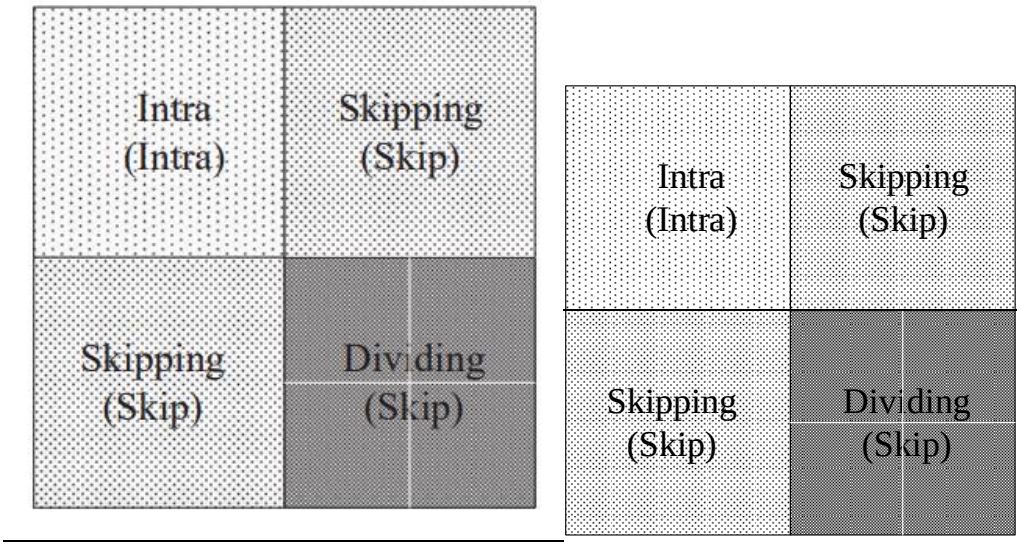

Intra
(Intra)
Skipping
(Skip)
Skipping
(Skip)
Dividing
(Skip)
Intra
(Intra)
Skipping
(Skip)
Skipping
(Skip)
Dividing
(Skip)

FIG. 8

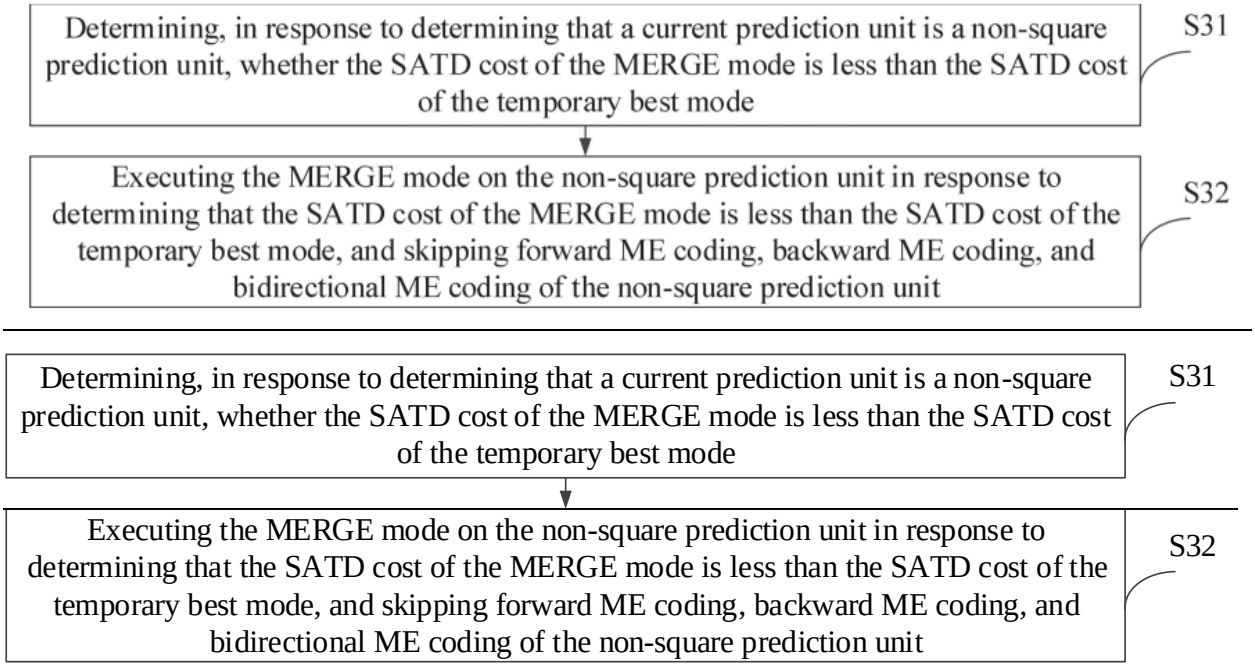

Determining, in response to determining that a current prediction unit is a non-square prediction unit, whether the SATD cost of the MERGE mode is less than the SATD cost of the temporary best mode
S31
Executing the MERGE mode on the non-square prediction unit in response to determining that the SATD cost of the MERGE mode is less than the SATD cost of the temporary best mode, and skipping forward ME coding, backward ME coding, and bidirectional ME coding of the non-square prediction unit
S32
Determining, in response to determining that a current prediction unit is a non-square prediction unit, whether the SATD cost of the MERGE mode is less than the SATD cost of the temporary best mode
S31
Executing the MERGE mode on the non-square prediction unit in response to determining that the SATD cost of the MERGE mode is less than the SATD cost of the temporary best mode, and skipping forward ME coding, backward ME coding, and bidirectional ME coding of the non-square prediction unit
S32

FIG. 9

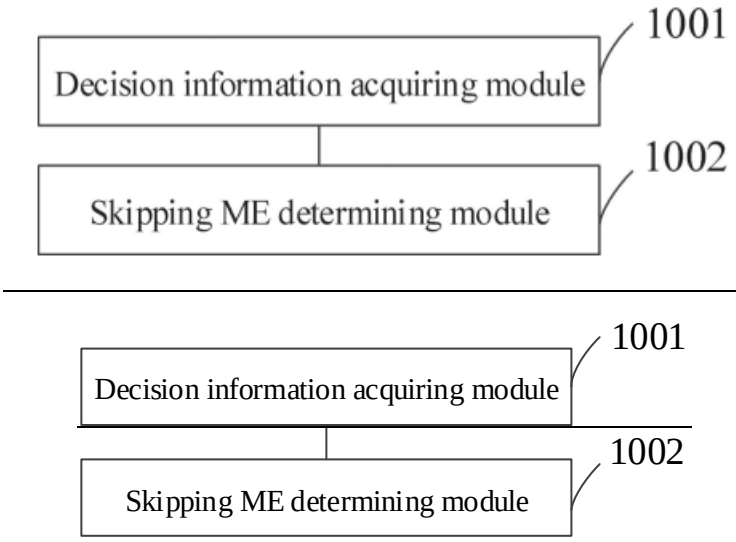

Decision information acquiring module
1001
Skipping ME determining module
1002
Decision information acquiring module
1001
Skipping ME determining module
1002

FIG. 10

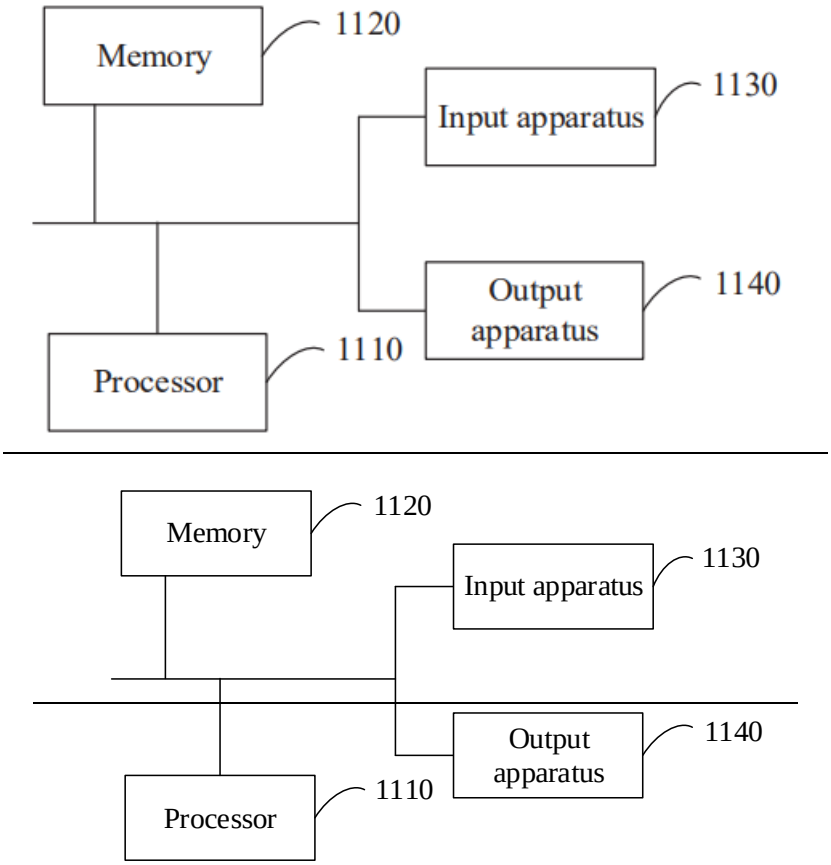

Memory
1120
Input apparatus
1130
Output apparatus
1140
Processor
1110

FIG. 11