FIG. 1

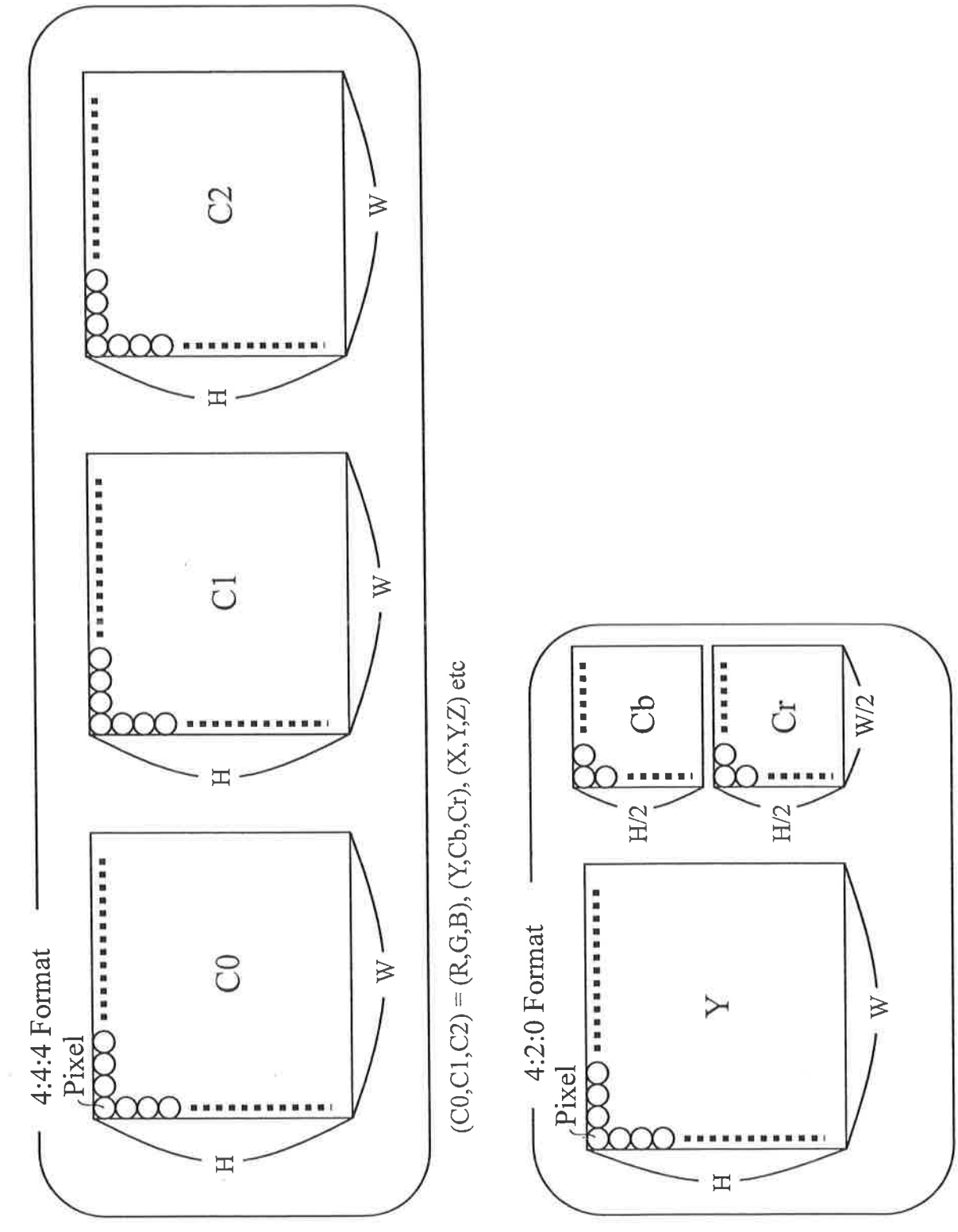

(a)
4:4:4 Format
Pixel
C0
C1
C2
H
W
(C0,C1,C2) = (R,G,B), (Y,Cb,Cr), (X,Y,Z) etc
(b)
4:2:0 Format
Pixel
Y
Cb
Cr
H
W
H/2
W/2

FIG.2

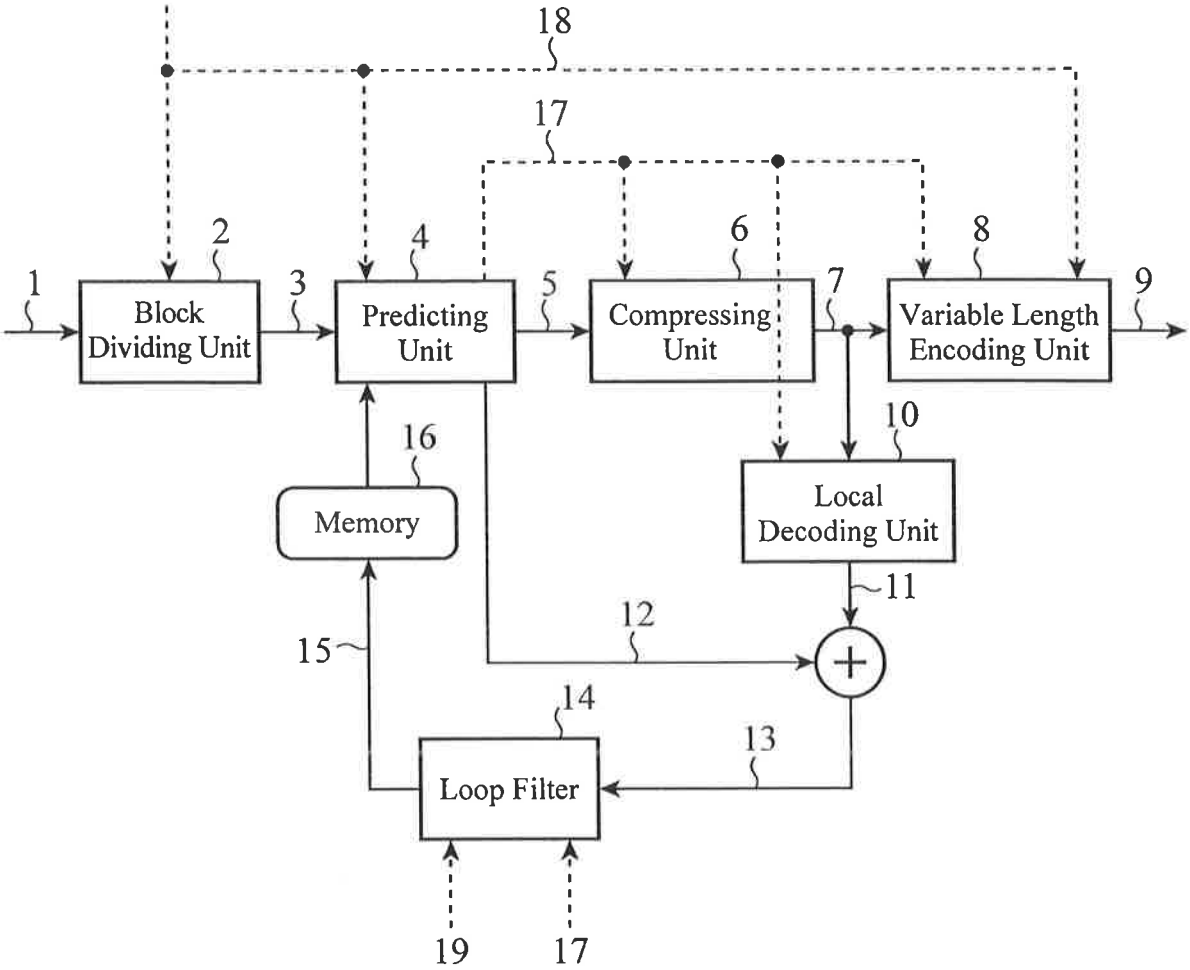

18
17
2
4
6
8
1
3
5
7
9
Block Dividing Unit
Predicting Unit
Compressing Unit
Variable Length Encoding Unit
16
10
Memory
Local Decoding Unit
11
12
15
14
13
Loop Filter
19
17

FIG.3

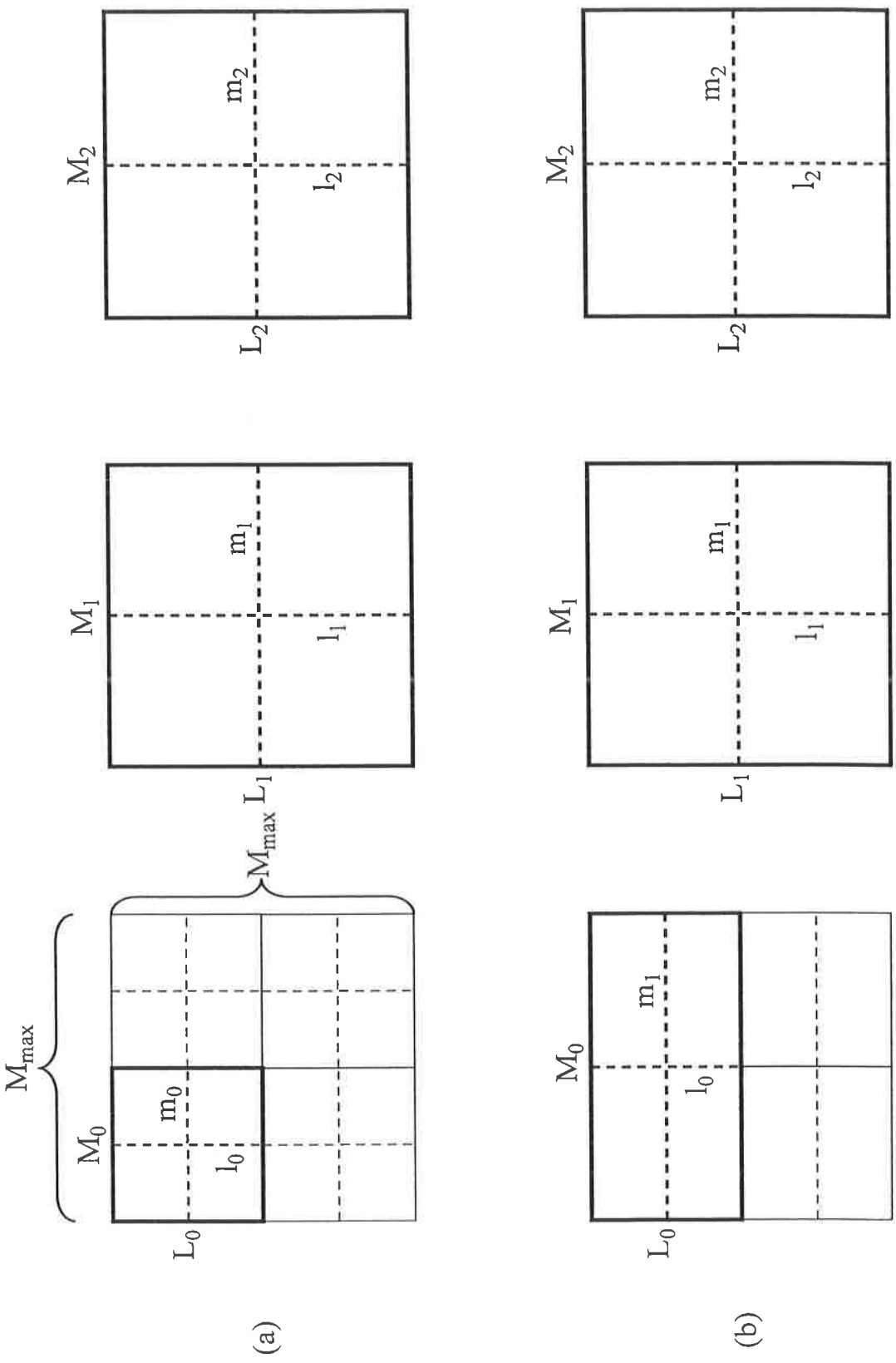


FIG.4

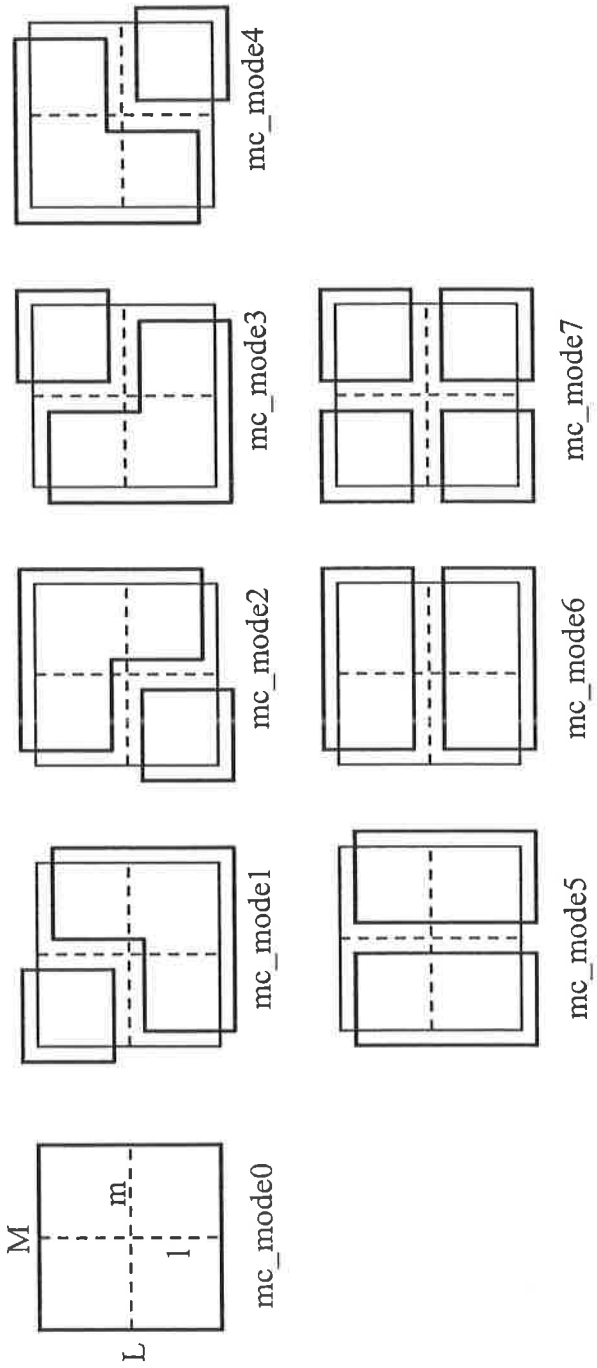

mc_mode4
mc_mode3
mc_mode7
mc_mode2
mc_mode6
mc_mode1
mc_mode5
mc_mode0
M
m
l
L

FIG.5

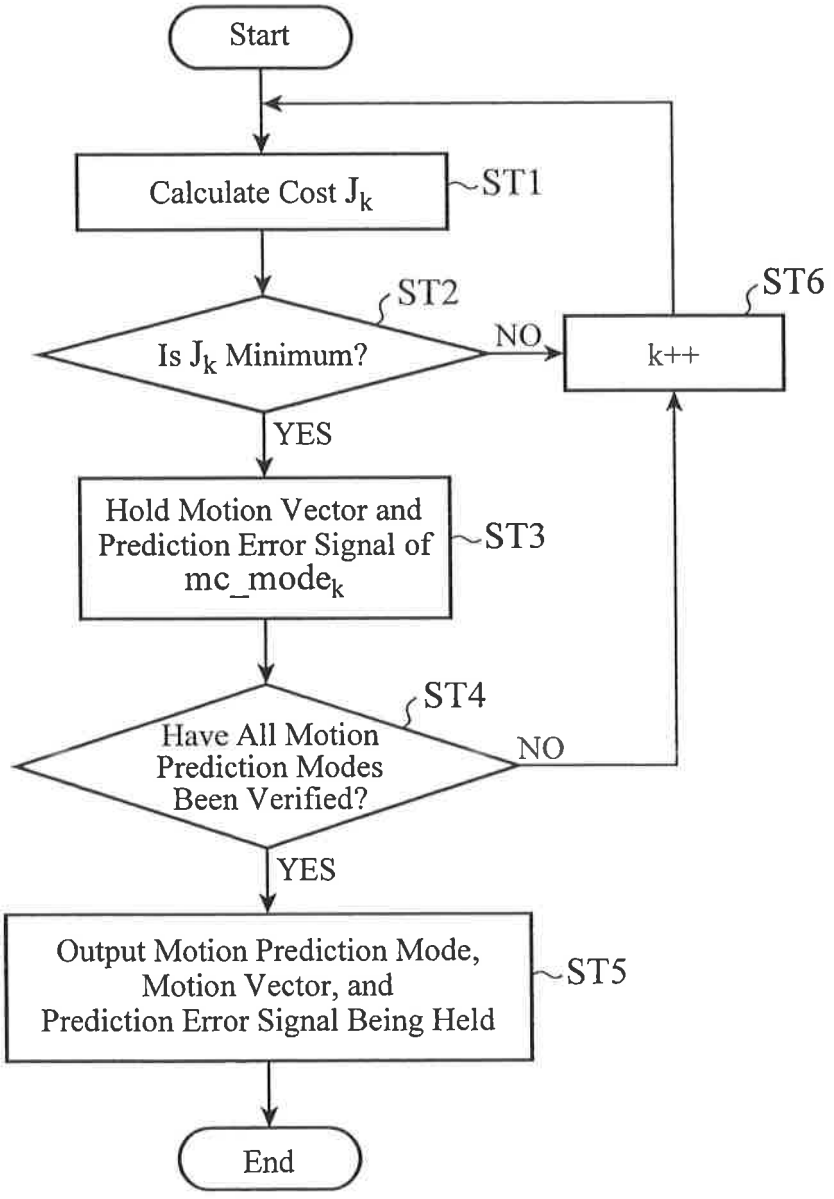

Start
Calculate Cost J_k
ST1
ST2
Is J_k Minimum?
NO
ST6
k++
YES
Hold Motion Vector and Prediction Error Signal of mc_mode_k
ST3
ST4
Have All Motion Prediction Modes Been Verified?
NO
YES
Output Motion Prediction Mode, Motion Vector, and Prediction Error Signal Being Held
ST5
End

FIG.6

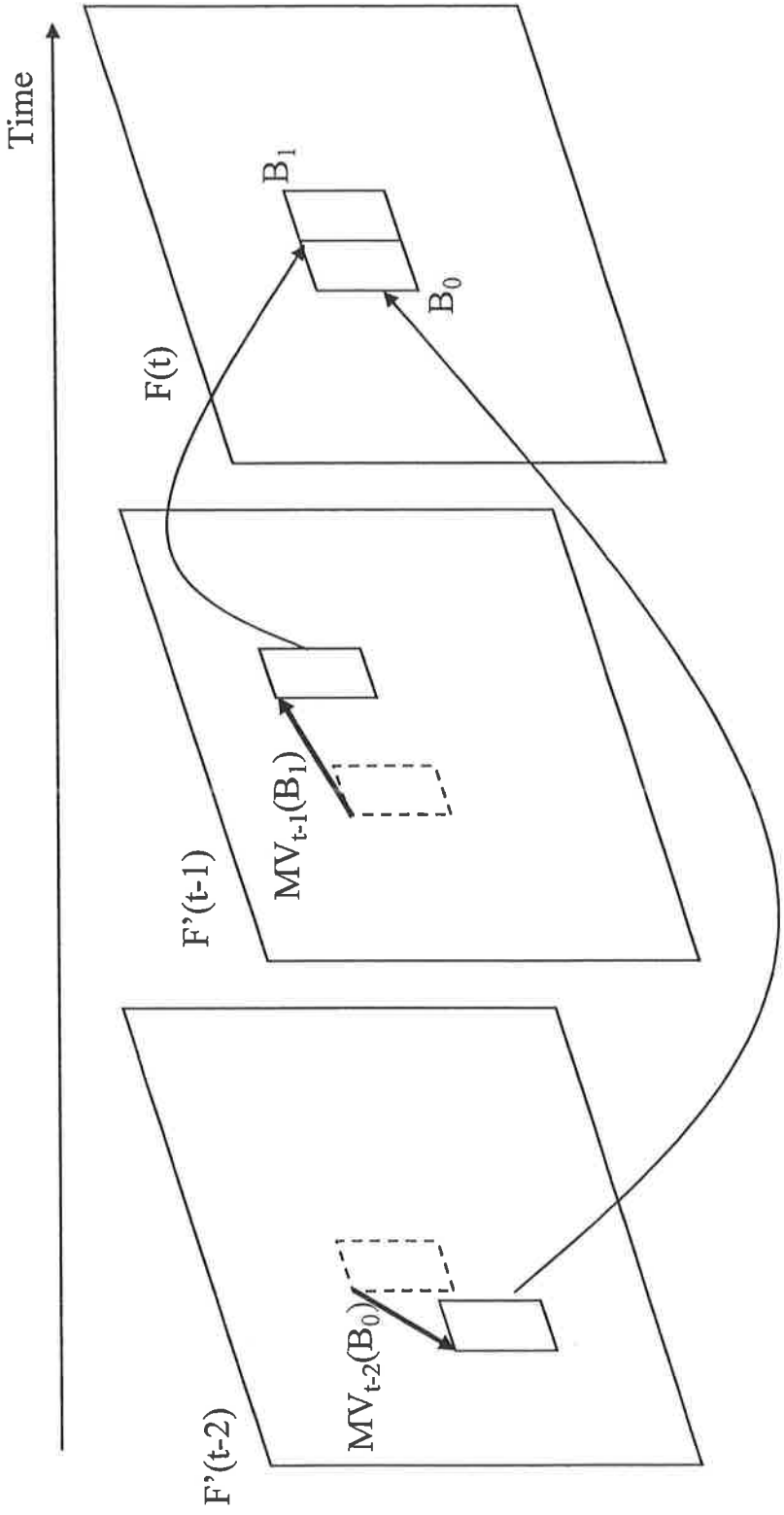


FIG.7

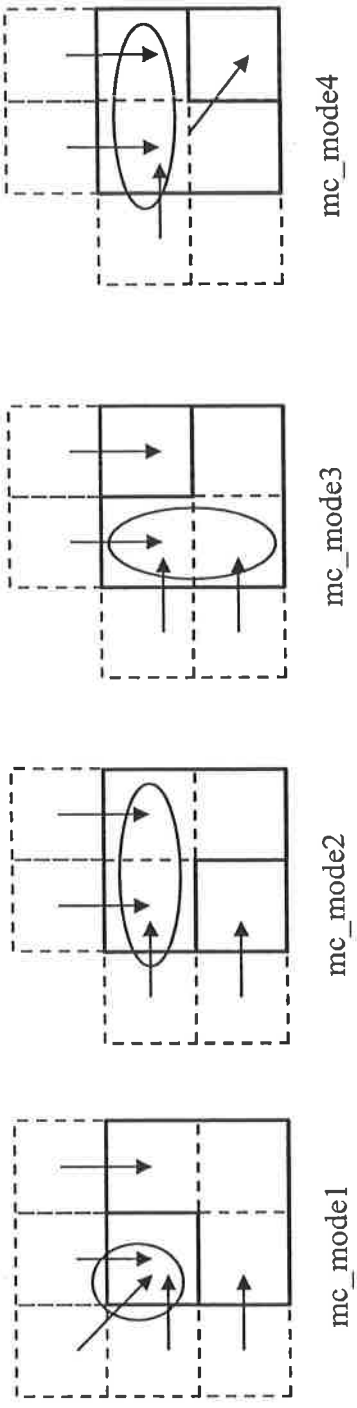


FIG.8

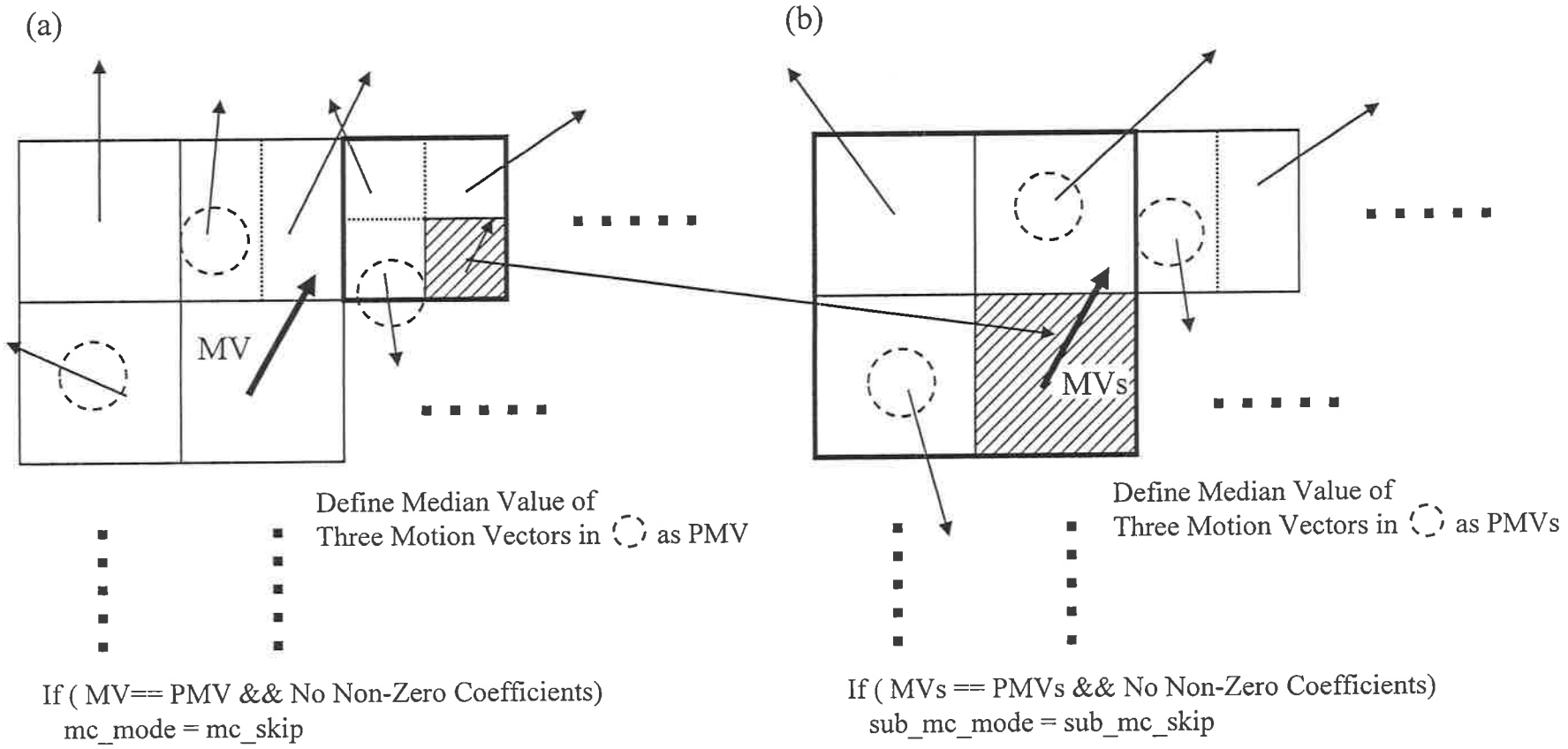

(a)
(b)
MV
MVs
Define Median Value of
Three Motion Vectors in as PMV
Define Median Value of
Three Motion Vectors in as PMVs
If (MV== PMV && No Non-Zero Coefficients)
mc_mode = mc_skip
If (MVs == PMVs && No Non-Zero Coefficients)
sub_mc_mode = sub_mc_skip

FIG.9

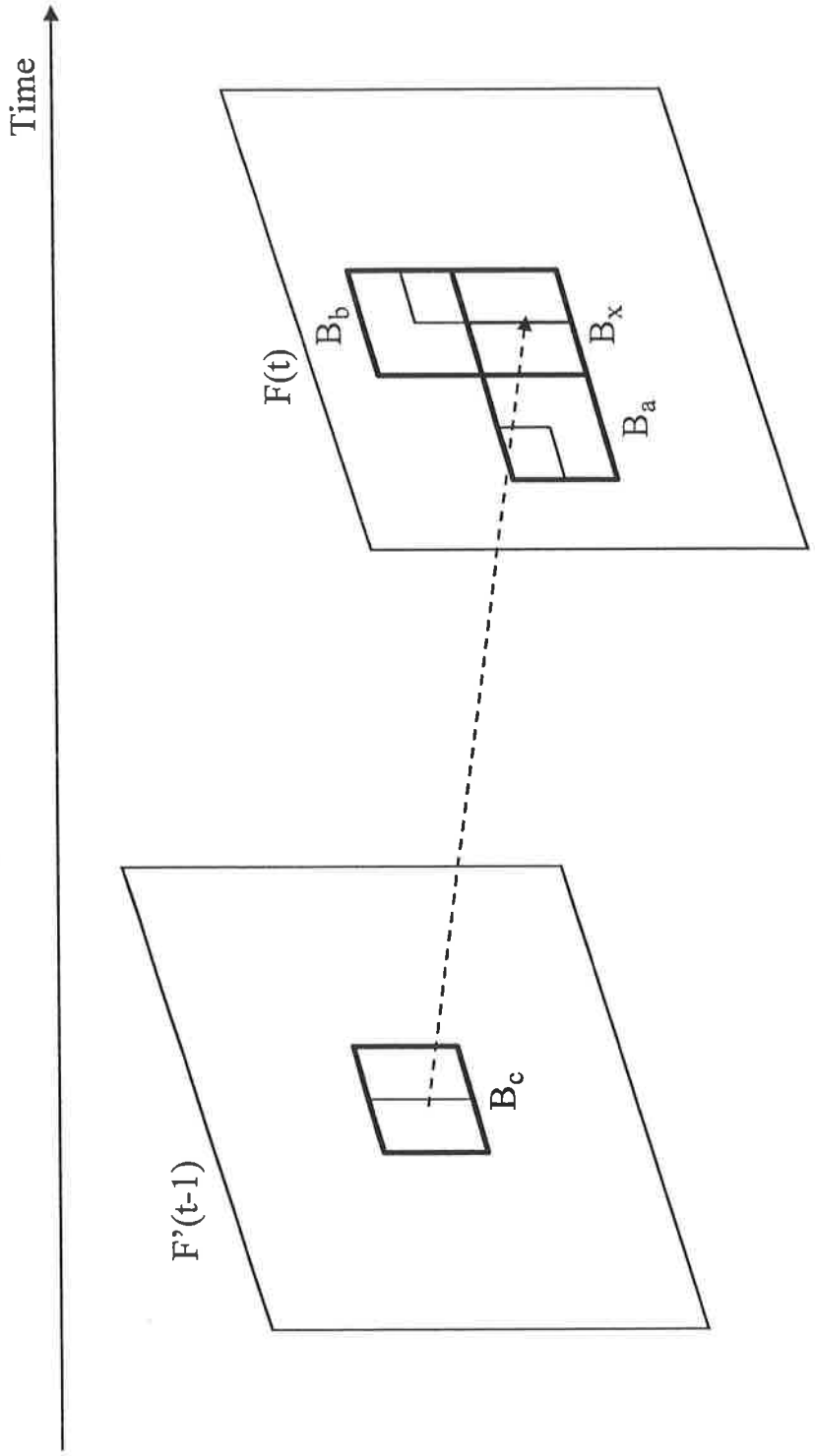


FIG.10

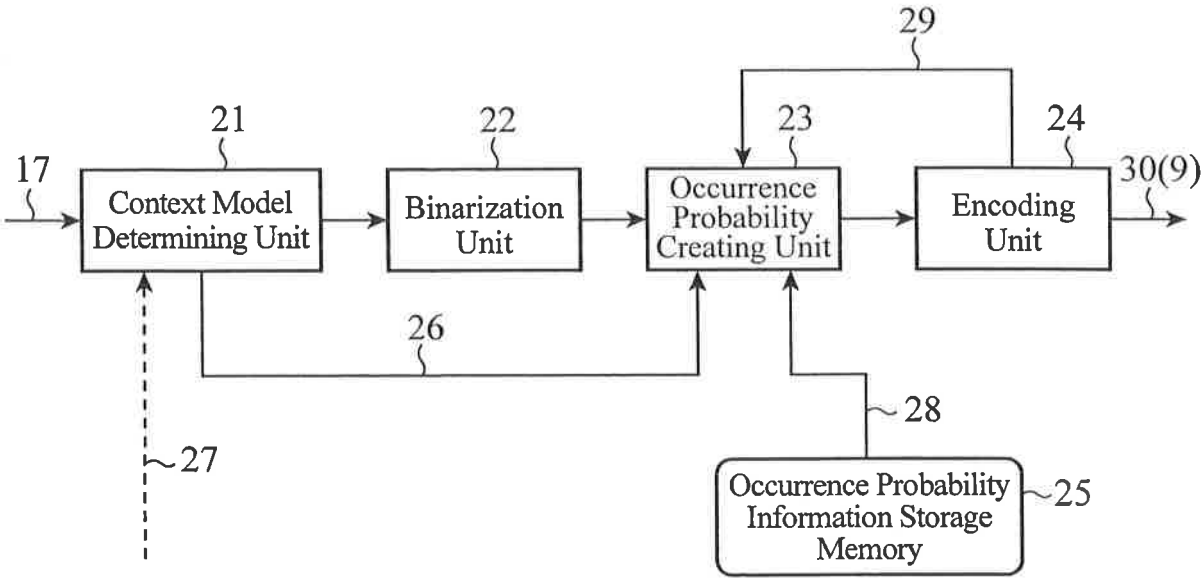

29
21
22
23
24
17
Context Model Determining Unit
Binarization Unit
Occurrence Probability Creating Unit
Encoding Unit
30(9)
26
28
27
Occurrence Probability Information Storage Memory
25

FIG.11

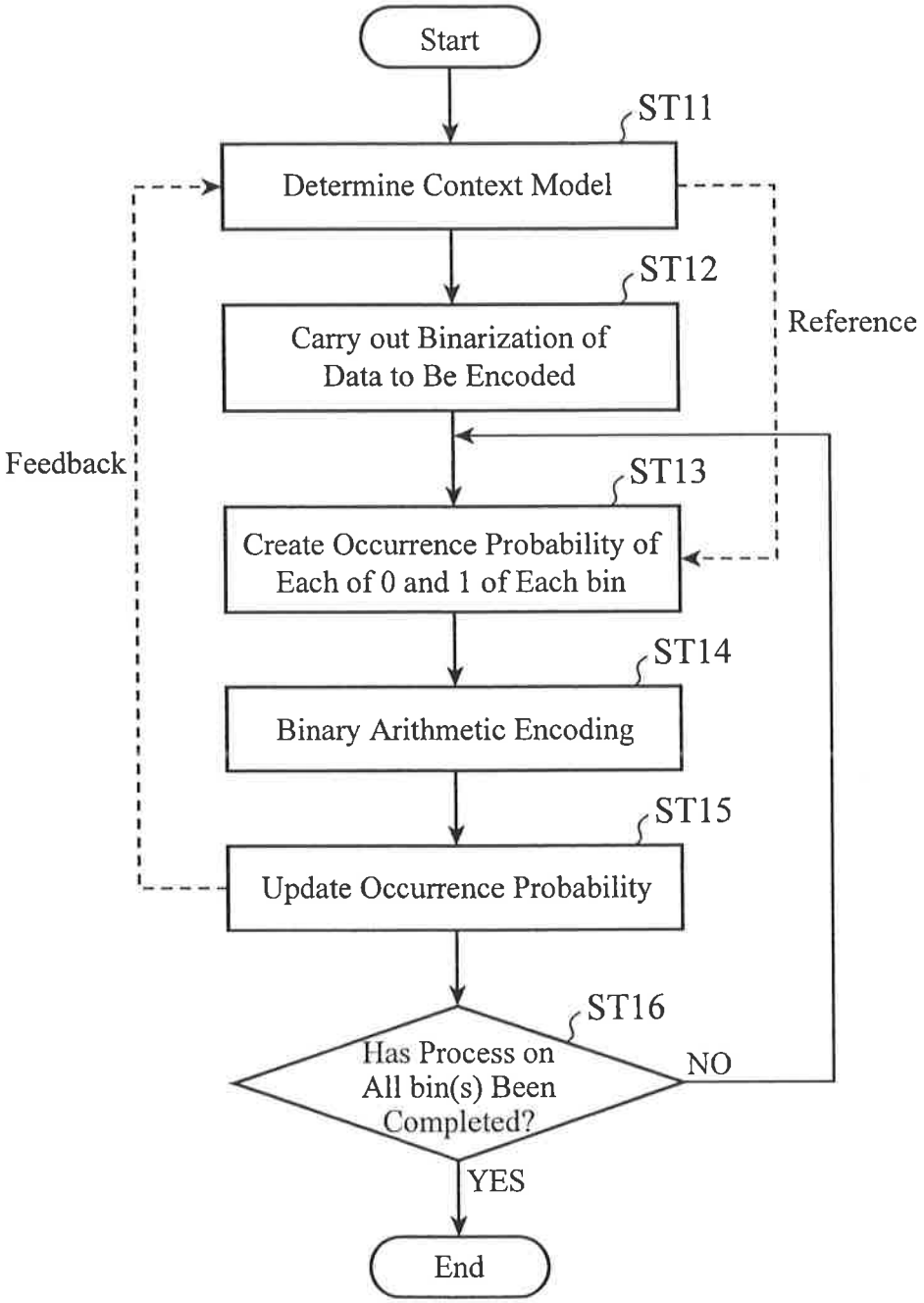

Start
ST11
Determine Context Model
ST12
Carry out Binarization of Data to Be Encoded
Reference
Feedback
ST13
Create Occurrence Probability of Each of 0 and 1 of Each bin
ST14
Binary Arithmetic Encoding
ST15
Update Occurrence Probability
ST16
Has Process on All bin(s) Been Completed?
NO
YES
End

FIG.12

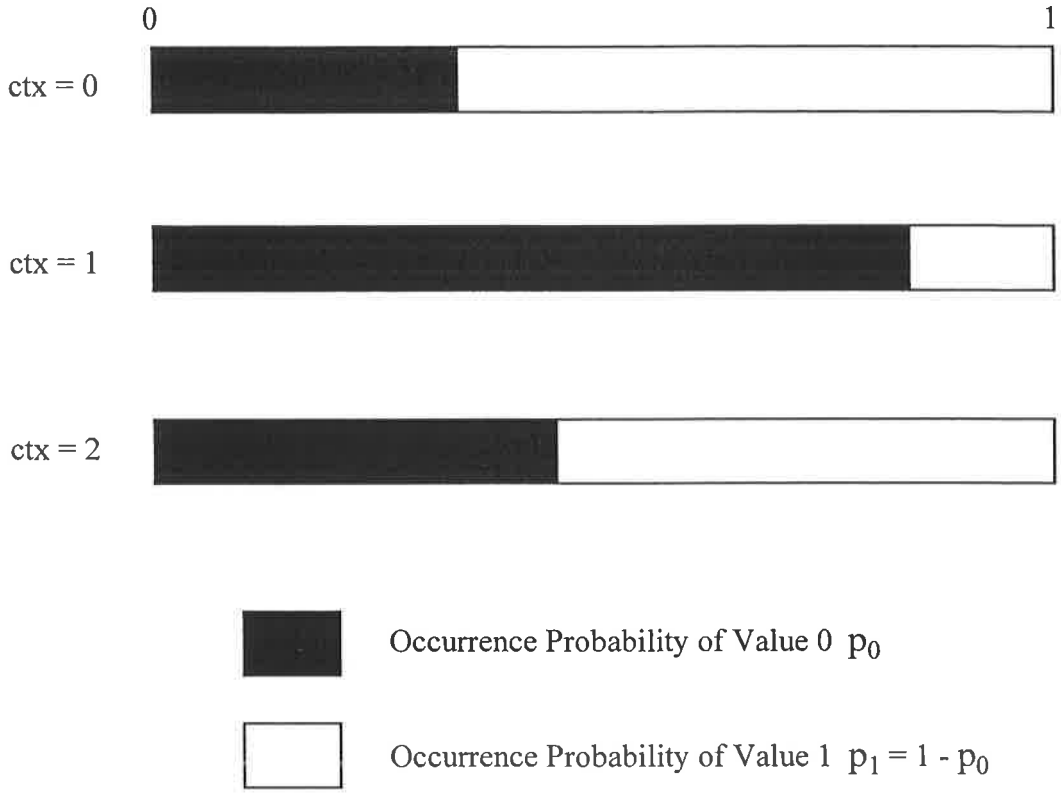
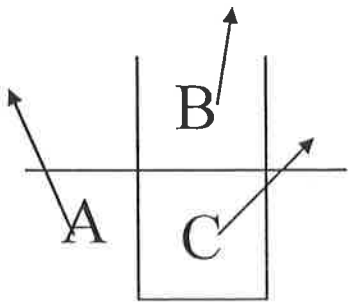


FIG.13



$$e_k(C) = |\, mvd_k(A) \,| + |\, mvd_k(B) \,|$$

$$ctx_mvd(C,k) = \begin{cases} 0, & \text{for } e_k(C) < 3; \\ 1, & \text{for } e_k(C) > 32; \\ 2, & \text{else} \end{cases}$$

FIG.14

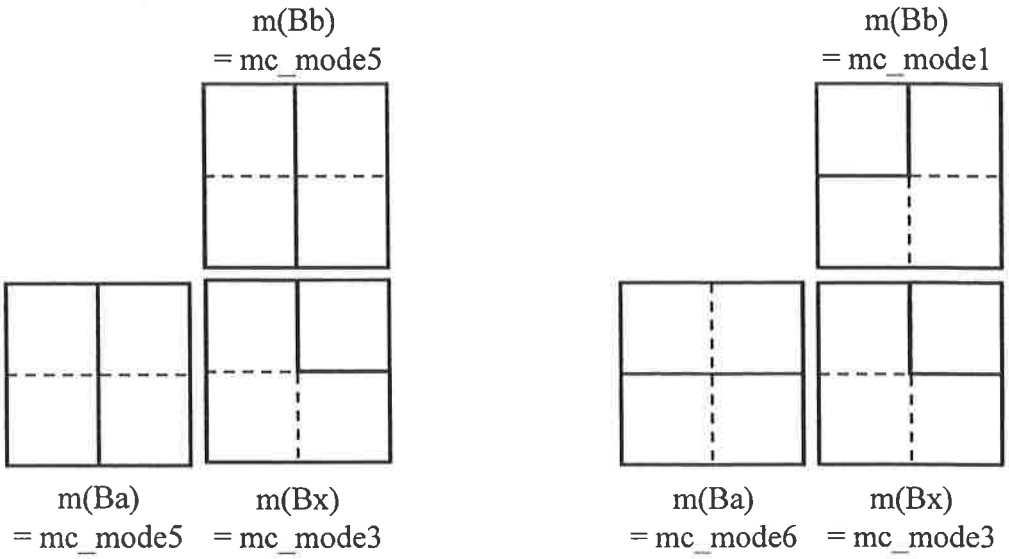

m(Bb)
= mc_mode5
m(Ba)
= mc_mode5
m(Bx)
= mc_mode3
(a)
m(Bb)
= mc_mode1
m(Ba)
= mc_mode6
m(Bx)
= mc_mode3
(b)

FIG.15

(a)

Binarization of mc_mode

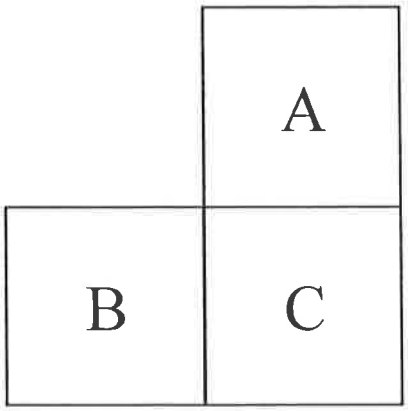
Motion Prediction Mode	Binarization Result					
	Bin 0	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5
mc_skip	0					
mc_mode0	1	0				
mc_mode5	1	1	0	0		
mc_mode6	1	1	0	1		
mc_mode1	1	1	1	1	0	0
mc_mode2	1	1	1	1	0	1
mc_mode3	1	1	1	1	1	0
mc_mode4	1	1	1	1	1	1
mc_mode7	1	1	1	0		

(b)

Binarization of sub_mc_mode

Motion Prediction Mode	Binarization Result					
	Bin 0	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5
sub_mc_skip	0					
sub_mc_mode0	1	0				
sub_mc_mode5	1	1	0	0		
sub_mc_mode6	1	1	0	1		
sub_mc_mode1	1	1	1	1	0	0
sub_mc_mode2	1	1	1	1	0	1
sub_mc_mode3	1	1	1	1	1	0
sub_mc_mode4	1	1	1	1	1	1
sub_mc_mode7	1	1	1	0		

FIG.16A



ctx_mc_mode_bin0 = (A == mc_skip) + (B == mc_skip)

ctx_sub_mc_mode_bin0 = (A == skip) + (B == skip)

skip = (mc_skip || sub_mc_skip)

FIG.16B

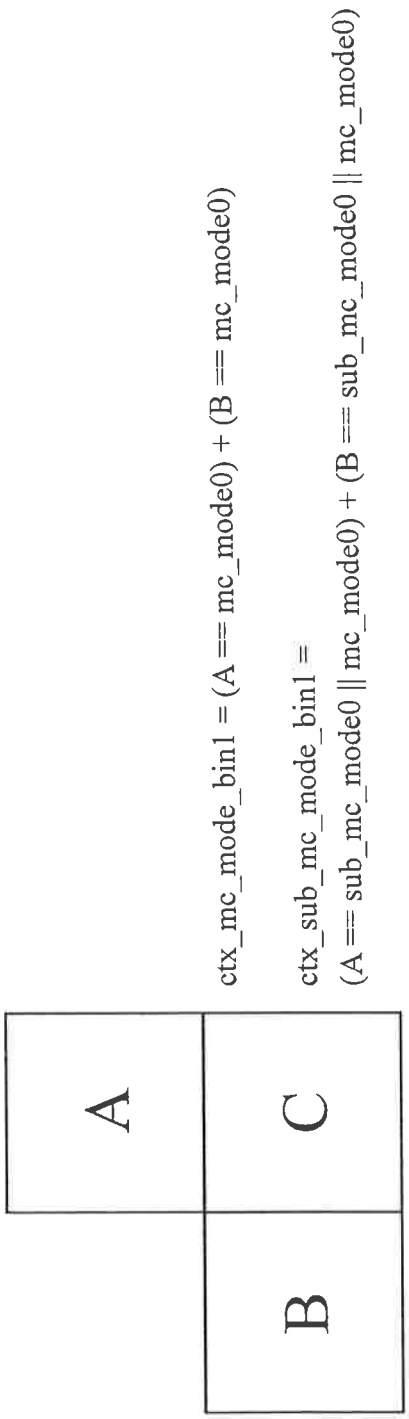

A
C
B
ctx_mc_mode_bin1 = (A == mc_mode0) + (B == mc_mode0)
ctx_sub_mc_mode_bin1 =
(A == sub_mc_mode0 || mc_mode0) + (B == sub_mc_mode0 || mc_mode0)

FIG.16C

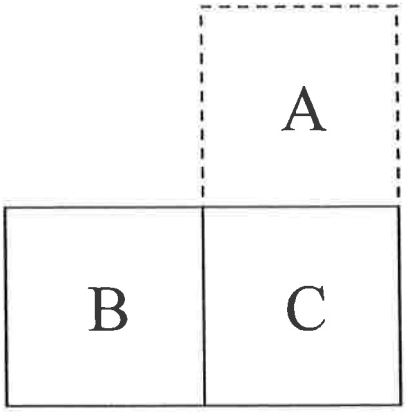
ctx_mc_mode_bin2 = (A != complex_mc_mode) + (B != complex_mc_mode)

ctx_sub_mc_mode_bin2 =
(A == complex_sub_mc_mode) + (B == complex_sub_mc_mode)

complex_mc_mode = (mc_mode1 || mc_mode2 || mc_mode3 || mc_mode4 || mc_mode7)

complex_sub_mc_mode = (sub_mc_mode1 || sub_mc_mode2 || sub_mc_mode3 || sub_mc_mode4 || sub_mc_mode7)

FIG.16D



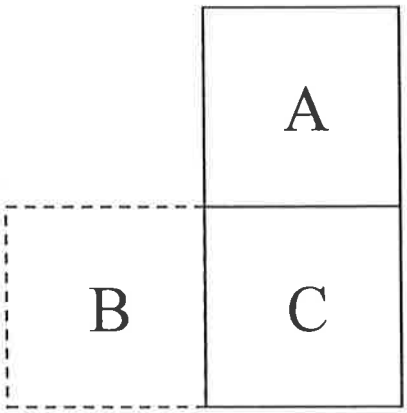
ctx_mc_mode_bin4 = (B == mc_h_part)

ctx_sub_mc_mode_bin4 = (B == sub_mc_h_part)

mc_h_part = (mc_mode3 || mc_mode4 || mc_mode6 || mc_mode7)

sub_mc_h_part = (sub_mc_mode3 || sub_mc_mode4 || sub_mc_mode6 || sub_mc_mode7)

FIG.16E



ctx_mc_mode_bin5 = (A == mc_v_part)

ctx_sub_mc_mode_bin5 = (A == sub_mc_v_part)

mc_v_part = (mc_mode2 || mc_mode4 || mc_mode5 || mc_mode7)

sub_mc_v_part = (sub_mc_mode2 || sub_mc_mode4 || sub_mc_mode5 || sub_mc_mode7)

FIG.17

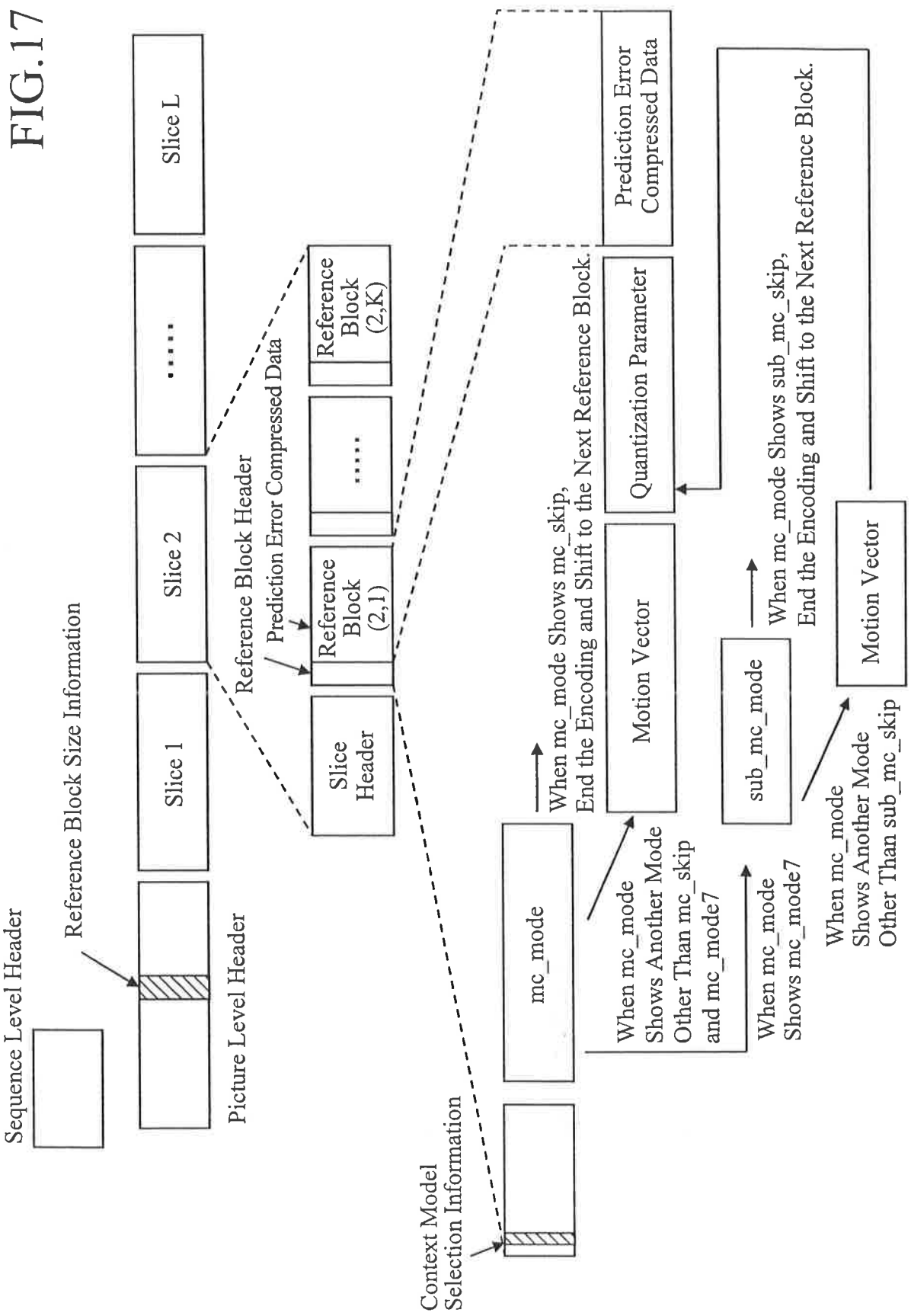

Sequence Level Header
Reference Block Size Information
Picture Level Header
Slice 1
Slice 2
.....
Slice L
Reference Block Header
Prediction Error Compressed Data
Slice Header
Reference Block (2,1)
.....
Reference Block (2,K)
Context Model Selection Information
mc_mode
When mc_mode Shows mc_skip, End the Encoding and Shift to the Next Reference Block.
When mc_mode Shows Another Mode Other Than mc_skip and mc_mode7
Motion Vector
Quantization Parameter
Prediction Error Compressed Data
When mc_mode Shows mc_mode7
sub_mc_mode
When mc_mode Shows sub_mc_skip, End the Encoding and Shift to the Next Reference Block.
When mc_mode Shows Another Mode Other Than sub_mc_skip
Motion Vector

FIG.18

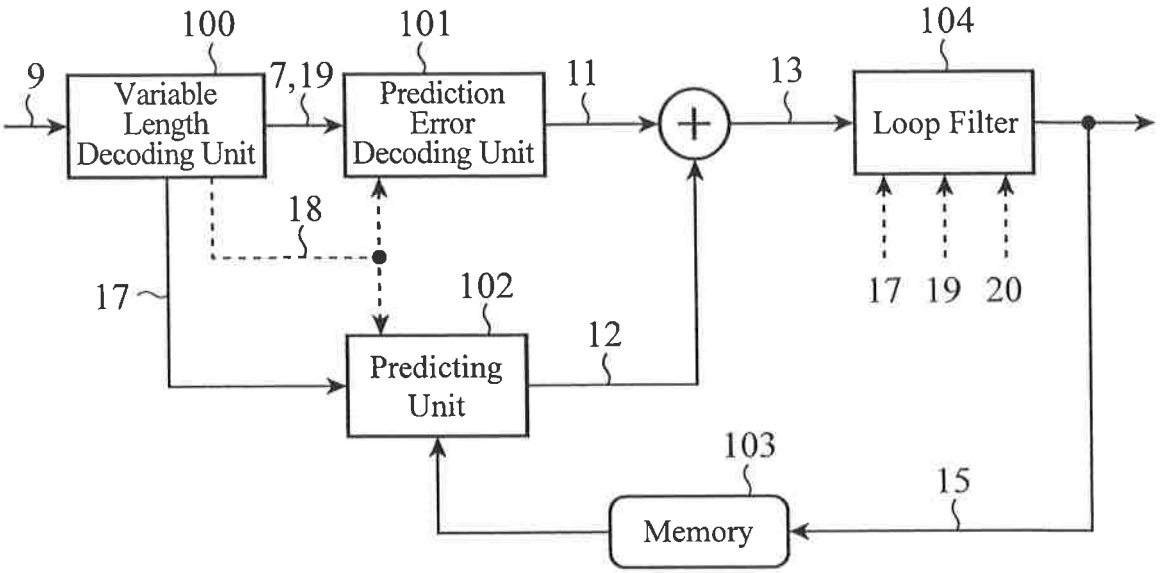

100
101
104
9
Variable Length Decoding Unit
7,19
Prediction Error Decoding Unit
11
13
Loop Filter
18
17
102
12
17 19 20
Predicting Unit
103
15
Memory

FIG.19

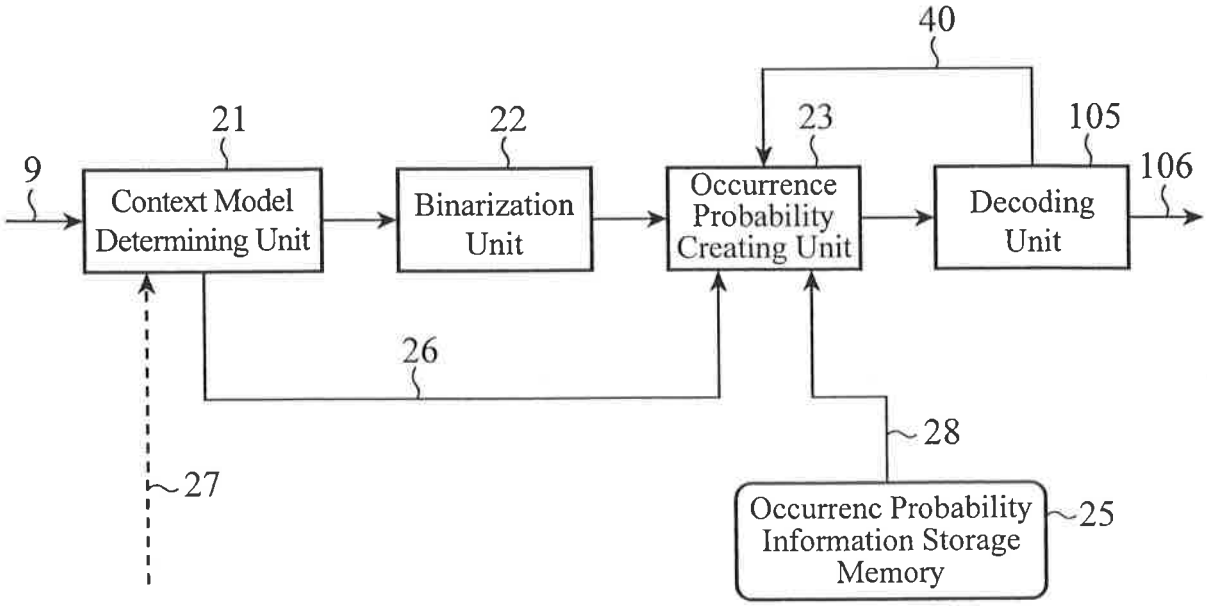

40
21
22
23
105
9
106
Context Model Determining Unit
Binarization Unit
Occurrence Probability Creating Unit
Decoding Unit
26
28
27
Occurrenc Probability Information Storage Memory
25

FIG.20

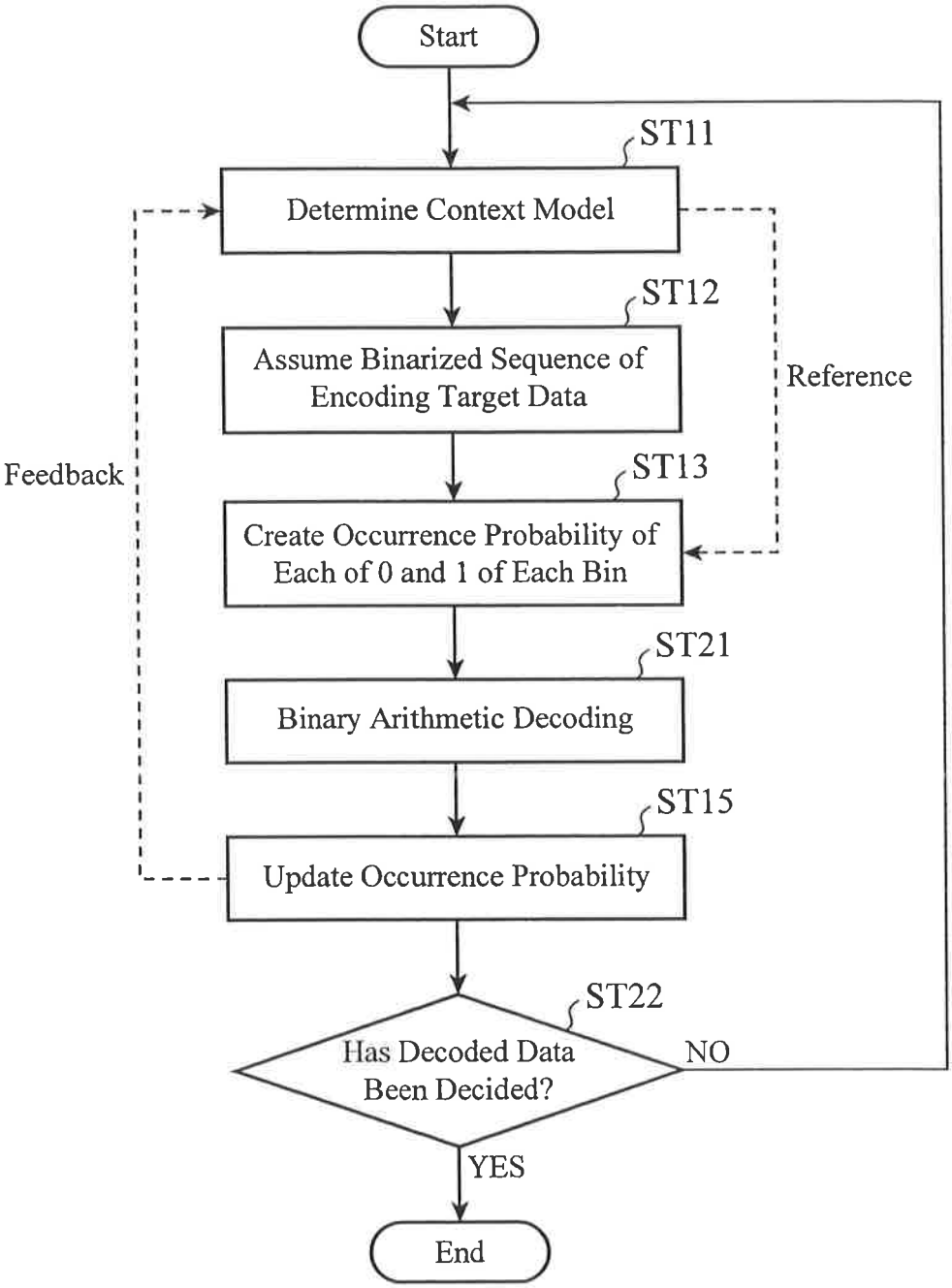

Start
ST11
Determine Context Model
ST12
Assume Binarized Sequence of Encoding Target Data
Reference
Feedback
ST13
Create Occurrence Probability of Each of 0 and 1 of Each Bin
ST21
Binary Arithmetic Decoding
ST15
Update Occurrence Probability
ST22
Has Decoded Data Been Decided?
NO
YES
End

FIG.21

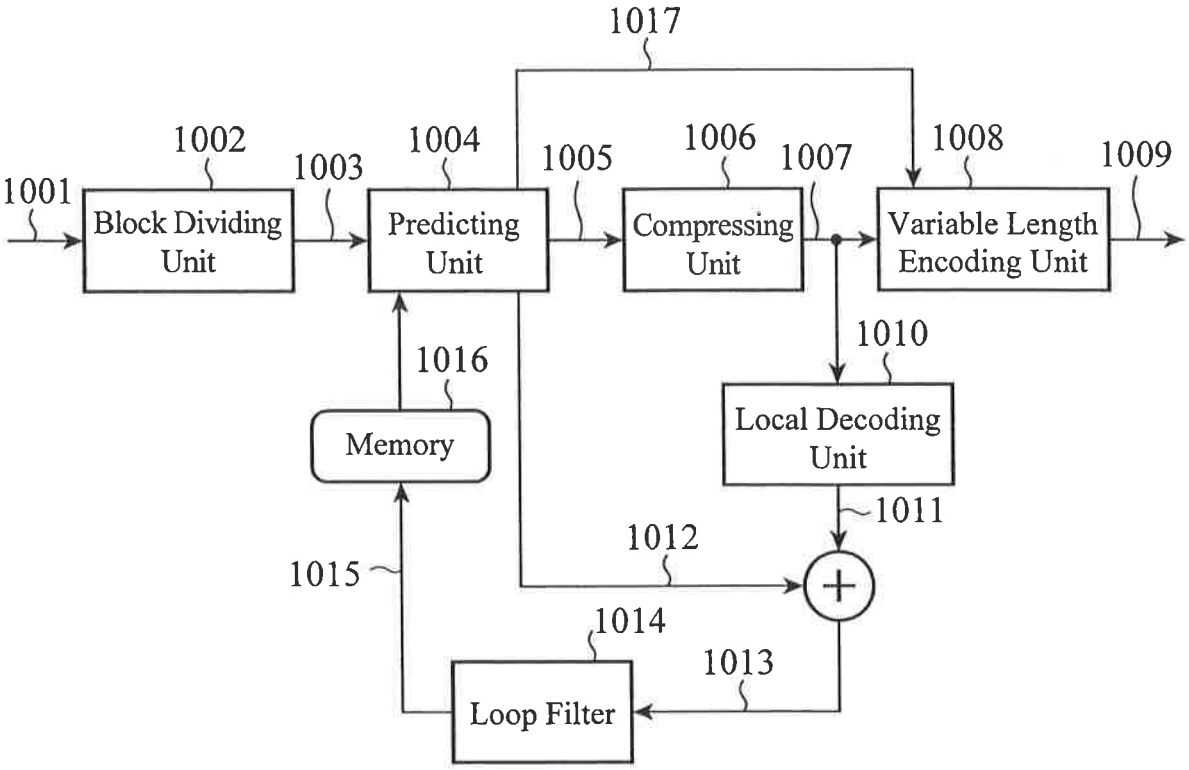

1017
1002
1004
1006
1008
1009
1001
1003
1005
1007
Block Dividing Unit
Predicting Unit
Compressing Unit
Variable Length Encoding Unit
1010
1016
Memory
Local Decoding Unit
1011
1012
1015
1014
1013
Loop Filter

FIG.22

