FIG. 1

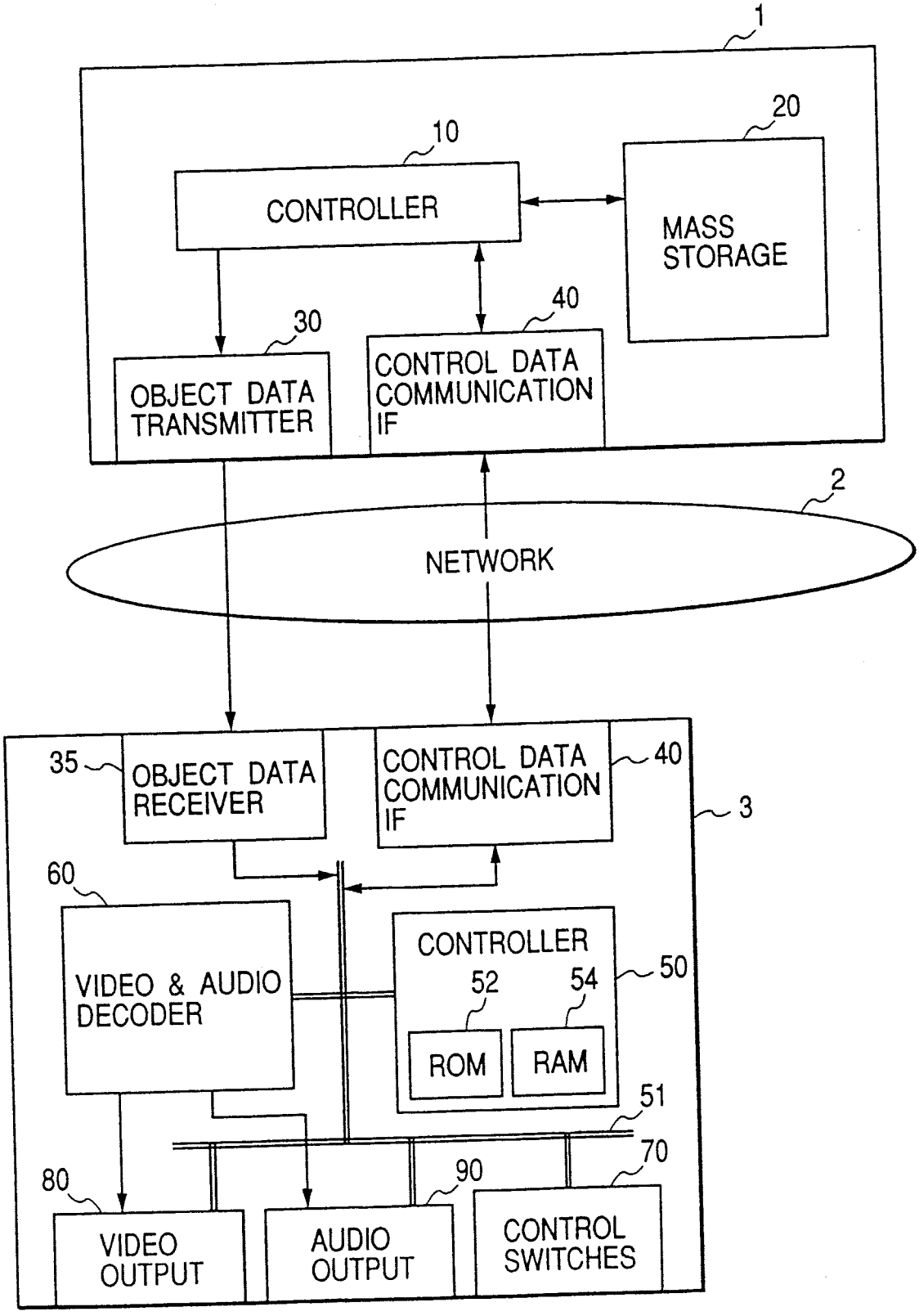

1
10
CONTROLLER
20
MASS STORAGE
30
OBJECT DATA TRANSMITTER
40
CONTROL DATA COMMUNICATION IF
2
NETWORK
35
OBJECT DATA RECEIVER
40
CONTROL DATA COMMUNICATION IF
3
60
VIDEO & AUDIO DECODER
CONTROLLER
52
54
50
ROM
RAM
51
70
80
90
VIDEO OUTPUT
AUDIO OUTPUT
CONTROL SWITCHES

FIG. 2

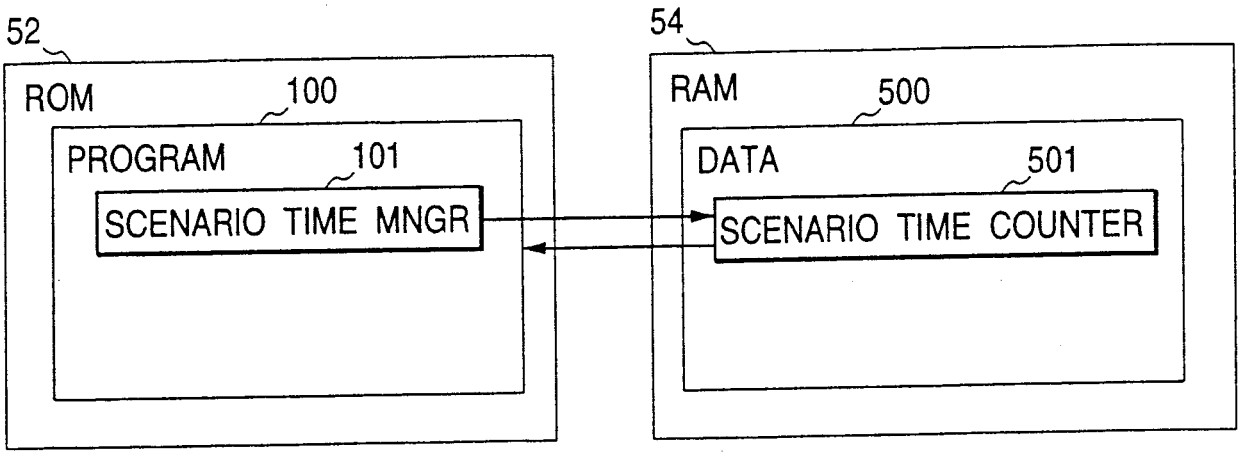


FIG. 3

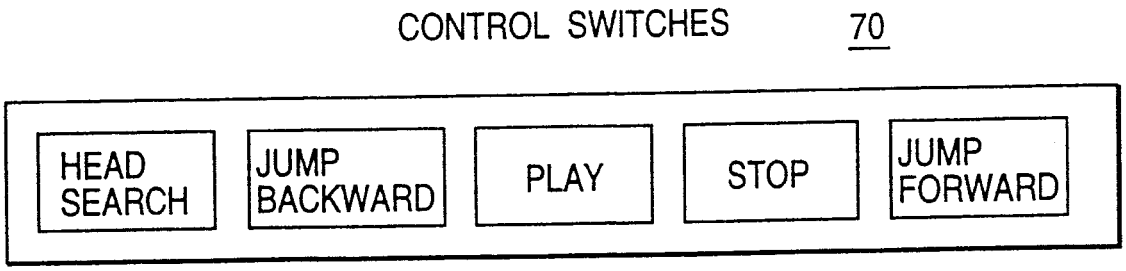


FIG. 4

OPERATED SWITCHES (OR ISSUED COMMAND)	THE VALUE (Ct) OF SCENARIO TIME COUNTER
PLAY	Ct+1 FOR EVERY FRAME PERIOD T DURING EXECUTION
JUMP FORWARD (JF)	Ct+Cj AFTER THE COMMAND EXECUTION
JUMP BACKWARD (JB)	Ct−Cj AFTER THE COMMAND EXECUTION
HEAD SEARCH (HS)	0 AFTER THE COMMAND EXECUTION
STOP	Ct AFTER THE COMMAND EXECUTION

(Cj IS A PREDETERMINED LEAP (OR JUMP) DISTANCE FOR FORWARD AND BACKWARD OPERATIONS)

FIG. 5

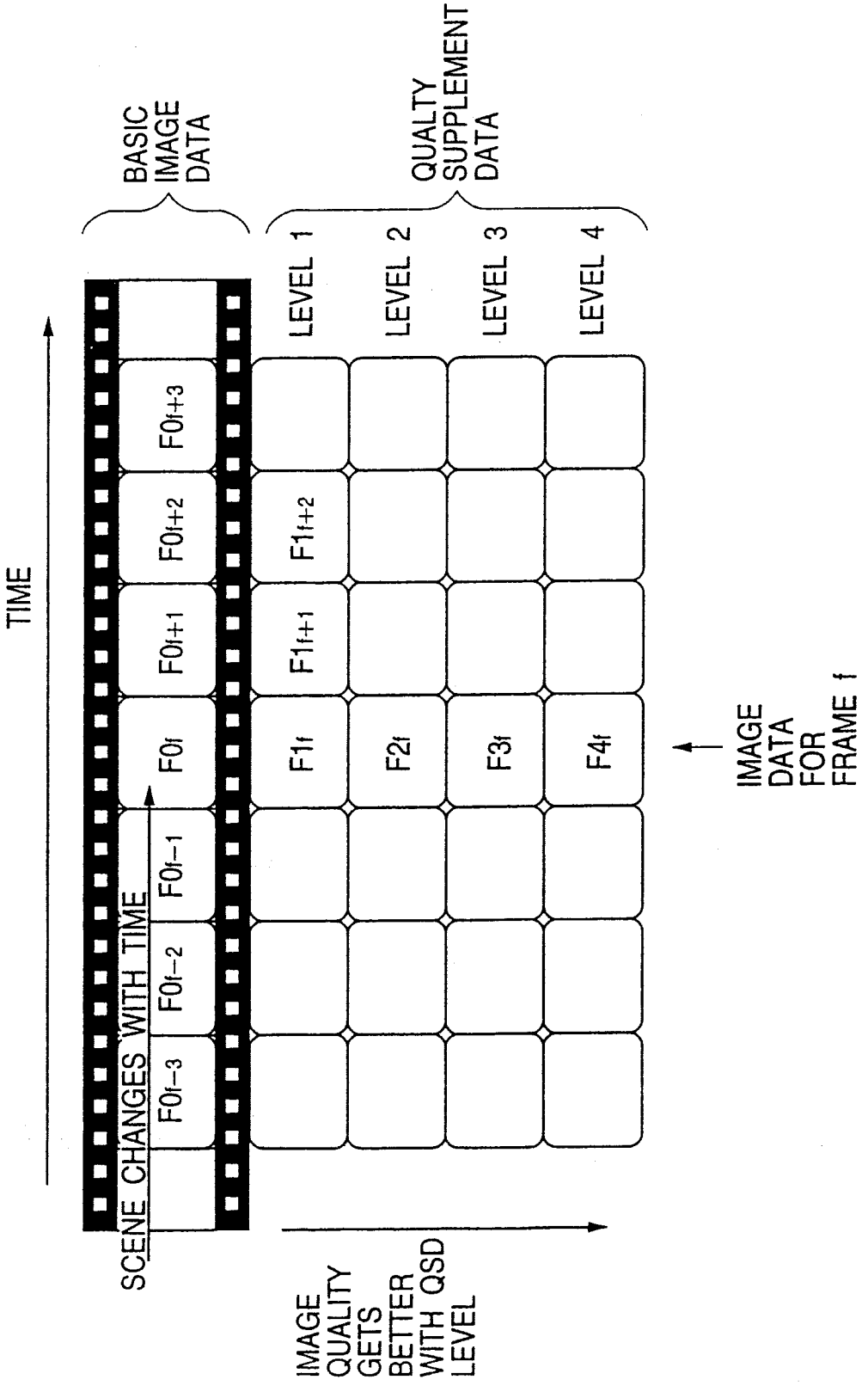

TIME
SCENE CHANGES WITH TIME
BASIC IMAGE DATA
QUALTY SUPPLEMENT DATA
LEVEL 1
LEVEL 2
LEVEL 3
LEVEL 4
F0f−3
F0f−2
F0f−1
F0f
F0f+1
F0f+2
F0f+3
F1f
F1f+1
F1f+2
F2f
F3f
F4f
IMAGE DATA FOR FRAME f
IMAGE QUALITY GETS BETTER WITH QSD LEVEL

FIG. 6

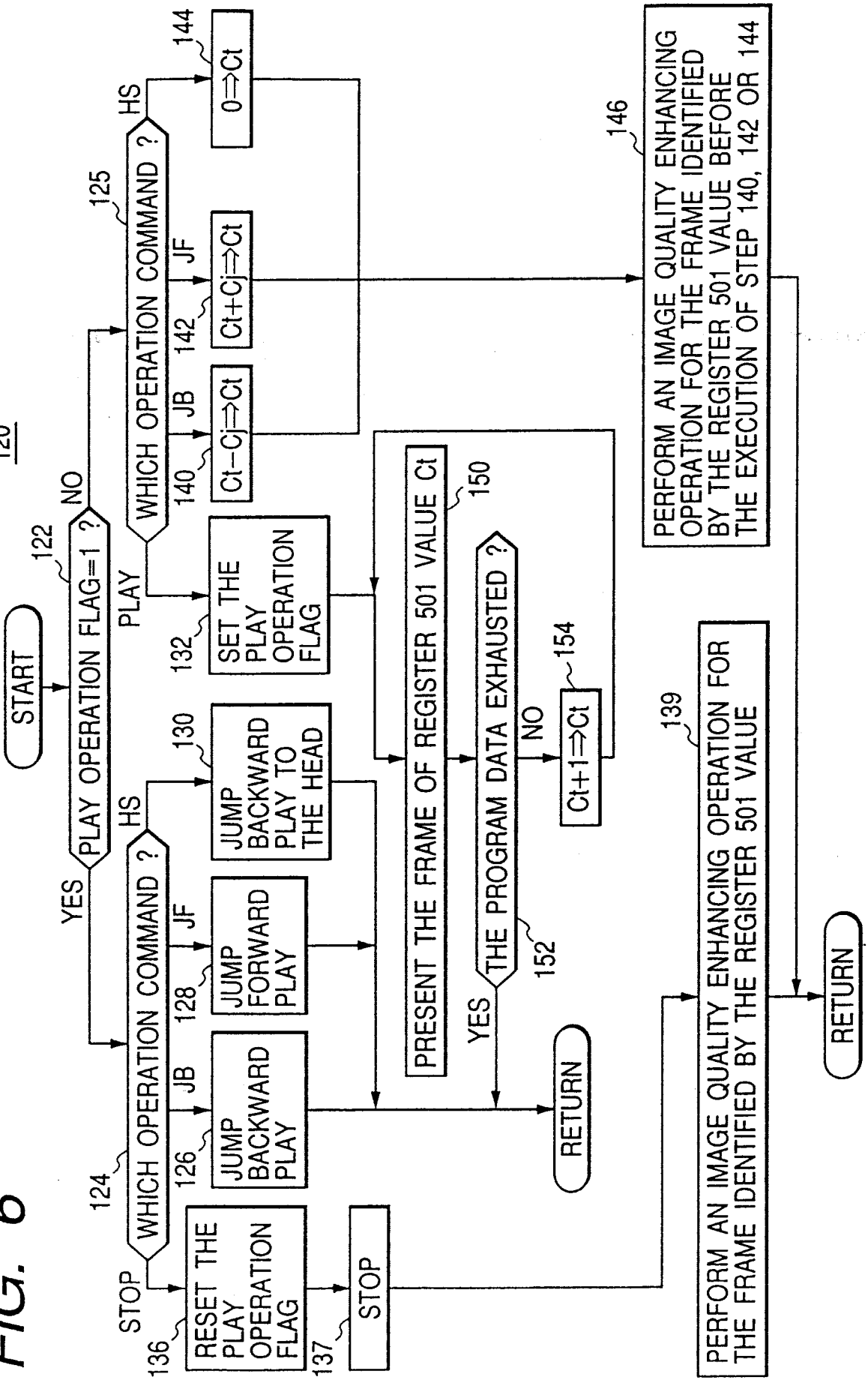

120
START
122
PLAY OPERATION FLAG=1 ?
YES
NO
124
WHICH OPERATION COMMAND ?
STOP
JB
JF
HS
126
JUMP BACKWARD PLAY
128
JUMP FORWARD PLAY
130
JUMP BACKWARD PLAY TO THE HEAD
136
RESET THE PLAY OPERATION FLAG
137
STOP
RETURN
PLAY
125
WHICH OPERATION COMMAND ?
132
SET THE PLAY OPERATION FLAG
140
Ct−Cj⇒Ct
142
Ct+Cj⇒Ct
144
0⇒Ct
PRESENT THE FRAME OF REGISTER 501 VALUE Ct
150
THE PROGRAM DATA EXHAUSTED ?
152
154
Ct+1⇒Ct
139
PERFORM AN IMAGE QUALITY ENHANCING OPERATION FOR THE FRAME IDENTIFIED BY THE REGISTER 501 VALUE
146
PERFORM AN IMAGE QUALITY ENHANCING OPERATION FOR THE FRAME IDENTIFIED BY THE REGISTER 501 VALUE BEFORE THE EXECUTION OF STEP 140, 142 OR 144
RETURN

FIG. 8

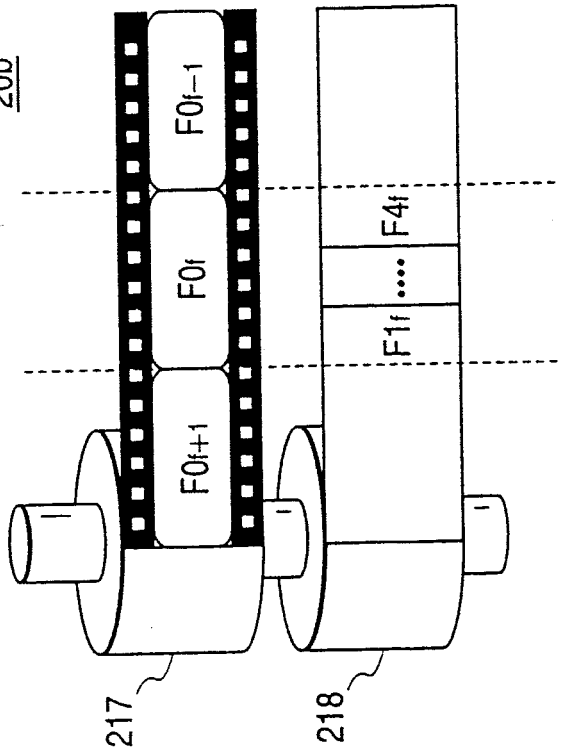

20b
F0f−1
F0f
F0f+1
F1f
F1f ···· F4f
217
218

FIG. 7

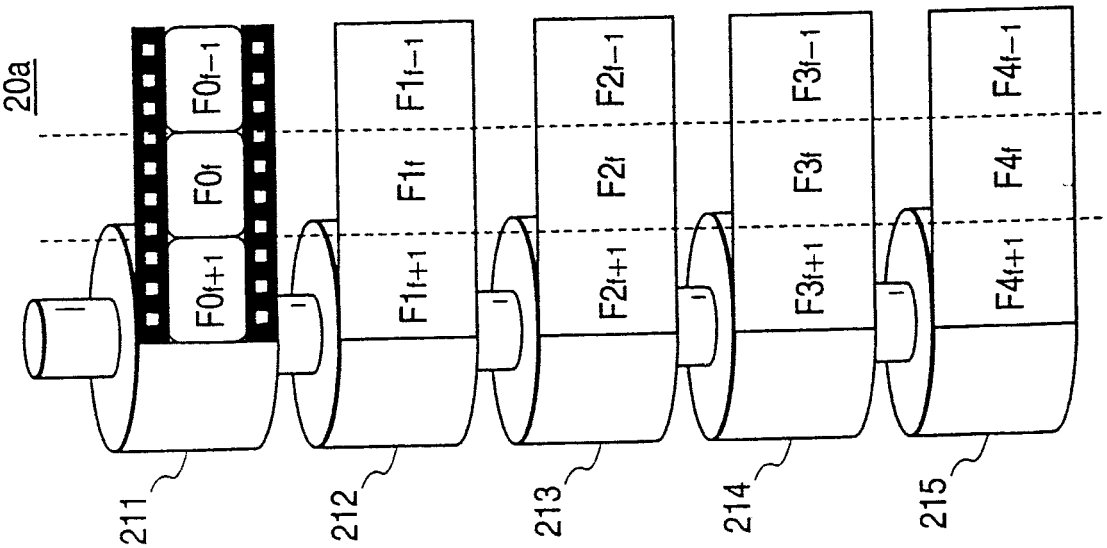

20a
F0f−1
F0f
F0f+1
F1f−1
F1f
F1f+1
F2f−1
F2f
F2f+1
F3f−1
F3f
F3f+1
F4f−1
F4f
F4f+1
211
212
213
214
215

FIG. 9

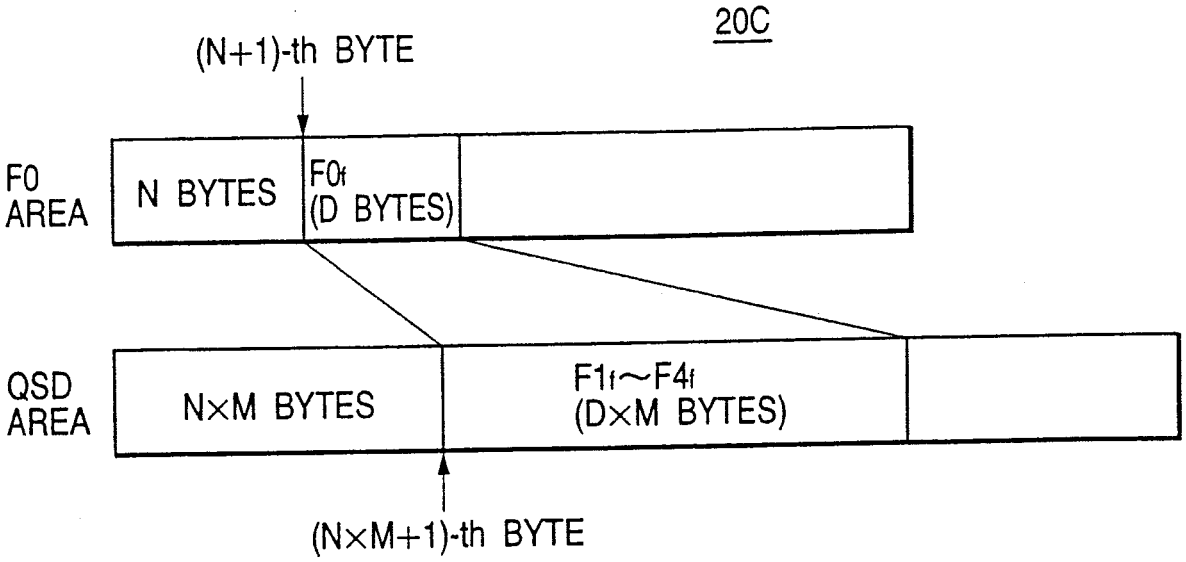


FIG. 10

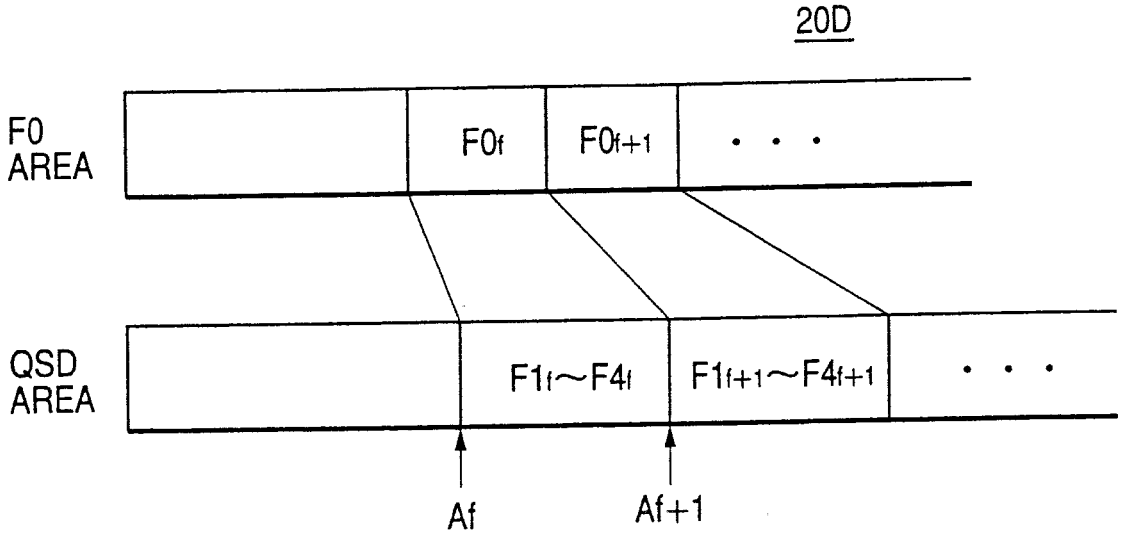


FIG. 11

FRAME NUMBER (f)	QSD ADDRESS (Af) FOR FRAME f

FIG. 12

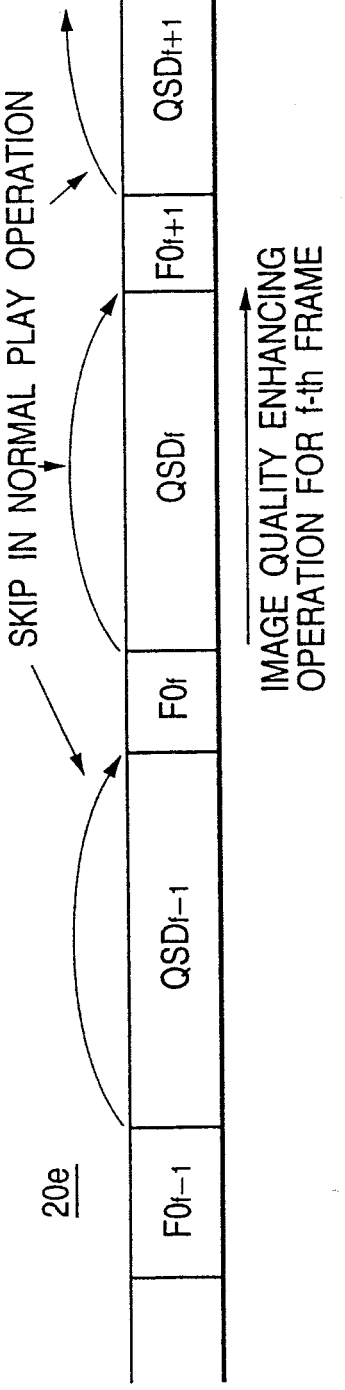

20e
F0f−1
QSDf−1
F0f
QSDf
F0f+1
QSDf+1
SKIP IN NORMAL PLAY OPERATION
IMAGE QUALITY ENHANCING OPERATION FOR f-th FRAME

FIG. 13

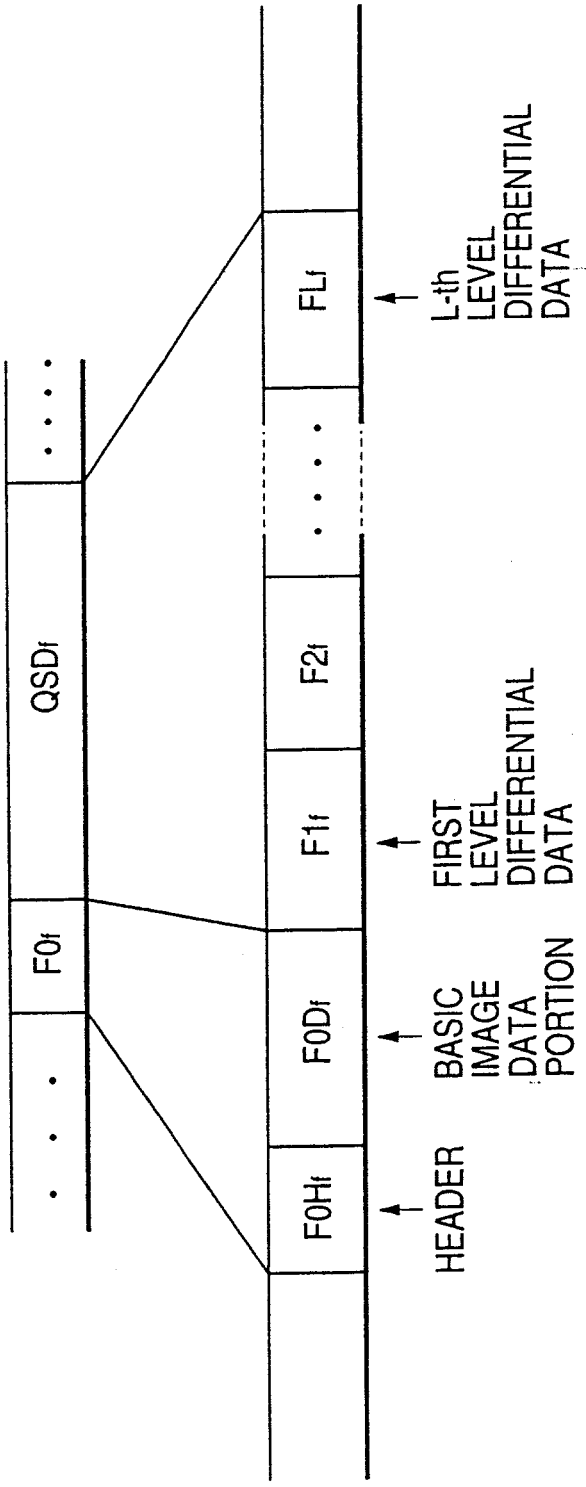

F0f
QSDf
F0Hf
F0Df
F1f
F2f
FLf
HEADER
BASIC IMAGE DATA PORTION
FIRST LEVEL DIFFERENTIAL DATA
L-th LEVEL DIFFERENTIAL DATA

FIG. 14

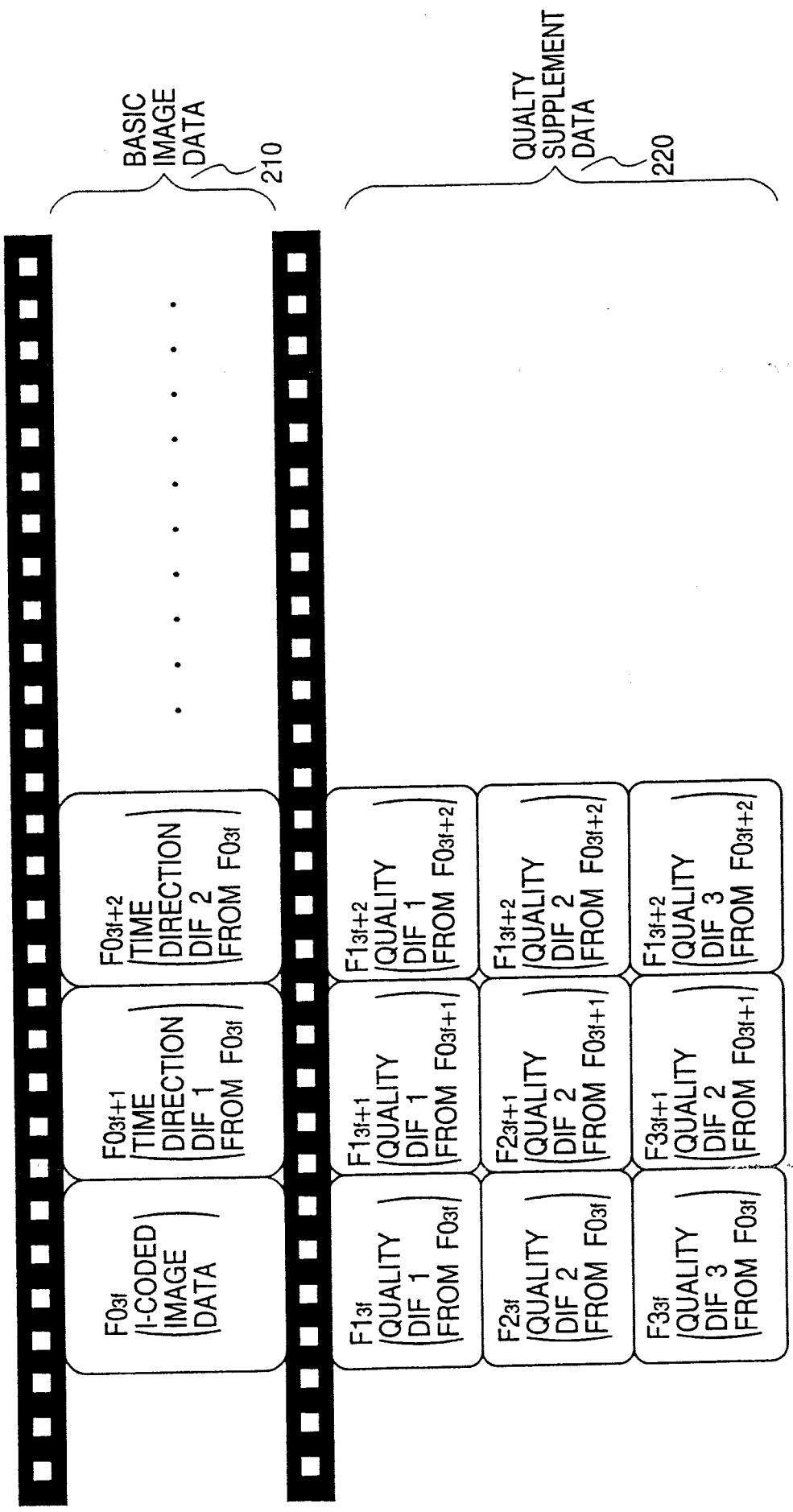

BASIC IMAGE DATA
210
QUALTY SUPPLEMENT DATA
220
F0 3f I-CODED IMAGE DATA
F0 3f+1 TIME DIRECTION DIF 1 FROM F0 3f
F0 3f+2 TIME DIRECTION DIF 2 FROM F0 3f
F1 3f QUALITY DIF 1 FROM F0 3f
F2 3f QUALITY DIF 2 FROM F0 3f
F3 3f QUALITY DIF 3 FROM F0 3f
F1 3f+1 QUALITY DIF 1 FROM F0 3f+1
F2 3f+1 QUALITY DIF 2 FROM F0 3f+1
F3 3f+1 QUALITY DIF 2 FROM F0 3f+1
F1 3f+2 QUALITY DIF 1 FROM F0 3f+2
F1 3f+2 QUALITY DIF 2 FROM F0 3f+2
F1 3f+2 QUALITY DIF 3 FROM F0 3f+2

FIG. 15

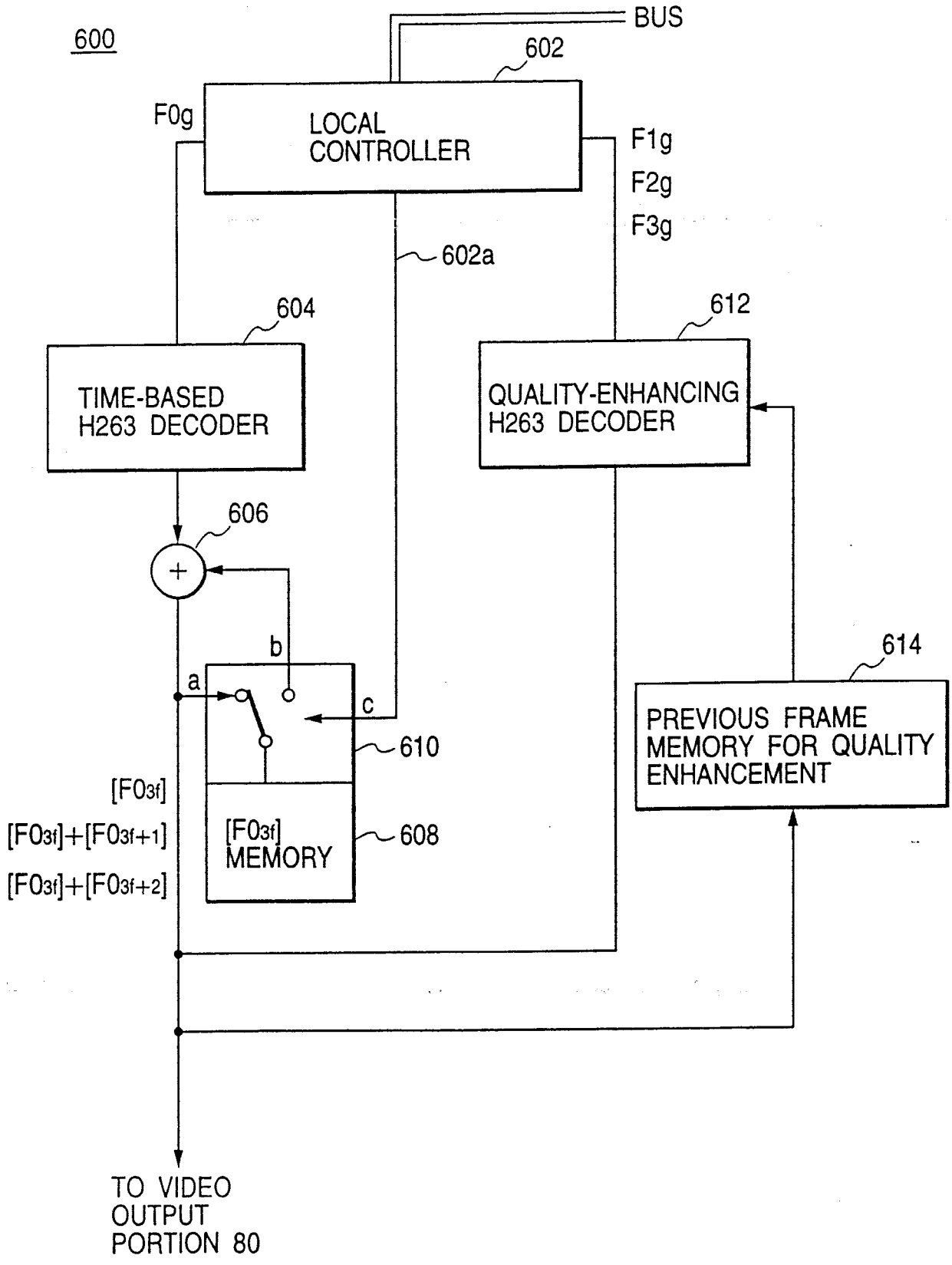

600
BUS
602
F0g
LOCAL CONTROLLER
F1g
F2g
F3g
602a
604
612
TIME-BASED H263 DECODER
QUALITY-ENHANCING H263 DECODER
606
b
a
c
610
614
PREVIOUS FRAME MEMORY FOR QUALITY ENHANCEMENT
[FO3f]
[FO3f]+[FO3f+1]
[FO3f]+[FO3f+2]
[FO3f] MEMORY
608
TO VIDEO OUTPUT PORTION 80

FIG. 16

SCENARIO DATA TABLE

OBJECT ID	KIND OF OBJECT	DISPLAY POSITION	DISPLAY SIZE	PRESENTATION START TIME (Ct VALUE=SCt)	PRESENTATION END TIME (Ct VALUE)
001	STILL	X=0, Y=0	800×600	0:00 (0)	3:25 (369000)
002	VIDEO	X=100, Y=100	400×300	0:00 (0)	3:25 (369000)
003	TEXT	X=20, Y=20	400×50	0:00 (0)	1:00 (108000)
004	TEXT	X=200, Y=500	500×50	1:00 (108000)	3:00 (324000)
005	STILL	X=600, Y=150	150×200	1:00 (108000)	2:00 (216000)
006	STILL	X=600, Y=450	100×100	2:30 (270000)	3:15 (351000)

FIG. 17

ACTIVE OBJECT TABLE

Ct VALUE	ACTIVE OBJECTS
0	001, 002, 003
108000	001, 002, 004, 005
216000	001, 002, 004
270000	001, 002, 004, 006
324000	001, 002, 006
351000	001, 002
369000	

22 June 2004

FIG. 18

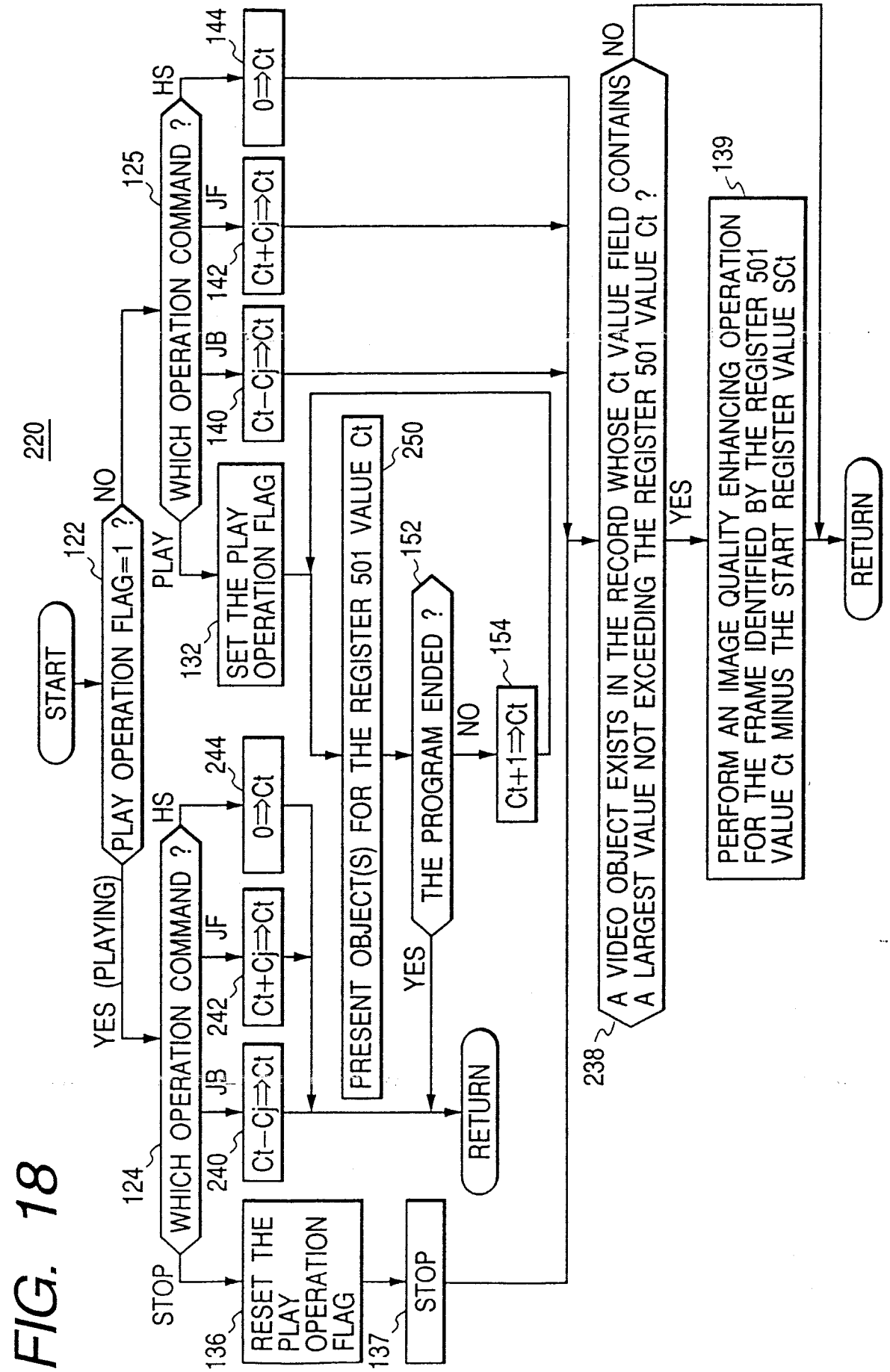

220
START
PLAY OPERATION FLAG=1 ?
122
NO
YES (PLAYING)
WHICH OPERATION COMMAND ?
124
HS
STOP
JB
240
JF
242
Ct−Cj⇒Ct
Ct+Cj⇒Ct
0⇒Ct
244
RESET THE PLAY OPERATION FLAG
136
STOP
137
RETURN
PLAY
WHICH OPERATION COMMAND ?
125
HS
JB
140
JF
142
Ct−Cj⇒Ct
Ct+Cj⇒Ct
0⇒Ct
144
SET THE PLAY OPERATION FLAG
132
PRESENT OBJECT(S) FOR THE REGISTER 501 VALUE Ct
250
THE PROGRAM ENDED ?
152
YES
NO
Ct+1⇒Ct
154
A VIDEO OBJECT EXISTS IN THE RECORD WHOSE Ct VALUE FIELD CONTAINS A LARGEST VALUE NOT EXCEEDING THE REGISTER 501 VALUE Ct ?
238
NO
YES
PERFORM AN IMAGE QUALITY ENHANCING OPERATION FOR THE FRAME IDENTIFIED BY THE REGISTER 501 VALUE Ct MINUS THE START REGISTER VALUE SCt
139
RETURN

FIG. 19

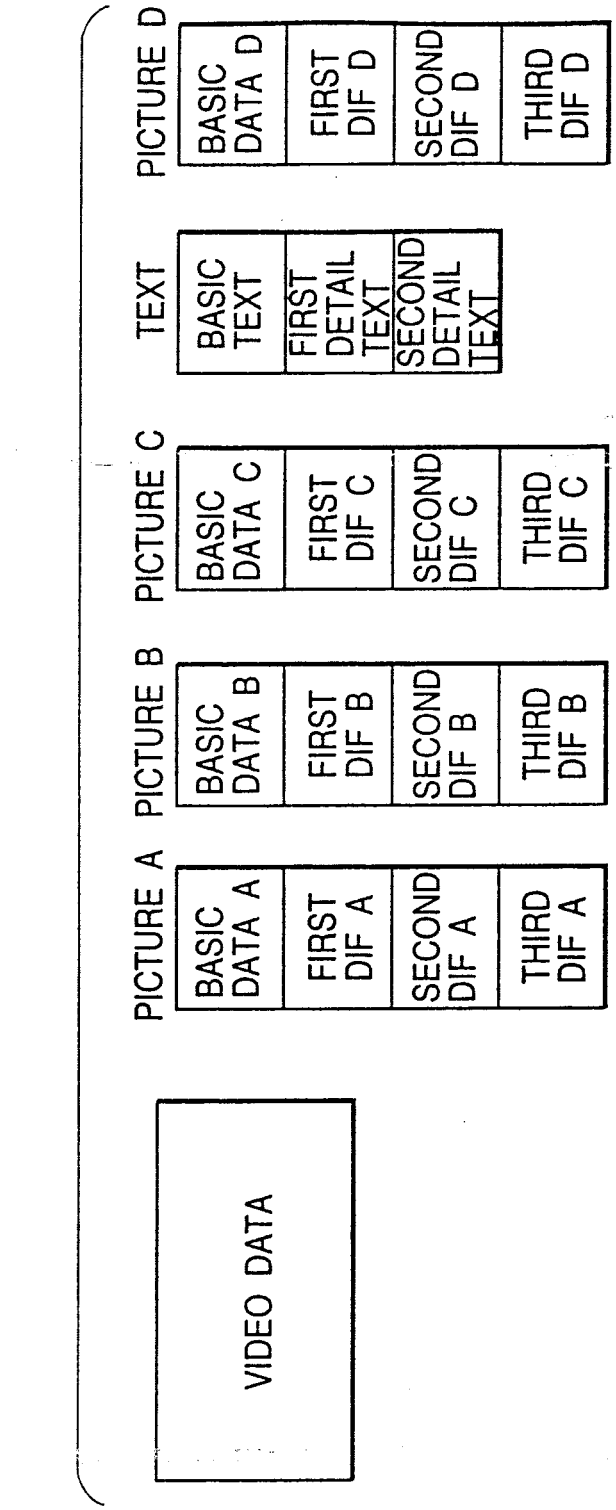

OBJECT DATA TO BE TRANSMITTED
VIDEO DATA
PICTURE A
BASIC DATA A
FIRST DIF A
SECOND DIF A
THIRD DIF A
PICTURE B
BASIC DATA B
FIRST DIF B
SECOND DIF B
THIRD DIF B
PICTURE C
BASIC DATA C
FIRST DIF C
SECOND DIF C
THIRD DIF C
TEXT
BASIC TEXT
FIRST DETAIL TEXT
SECOND DETAIL TEXT
PICTURE D
BASIC DATA D
FIRST DIF D
SECOND DIF D
THIRD DIF D

FIG. 20

SCENARIO
STOP COMMAND
SCENARIO TIME COUNT Ct
VIDEO DATA
PICTURE A
PICTURE B
PICTURE C
TEXT
PICTURE D

FIG. 21

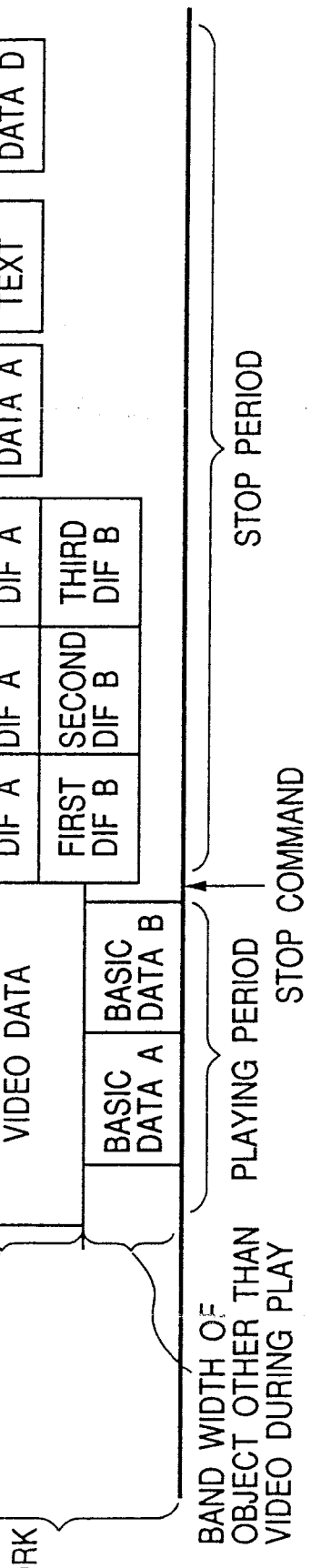

NETWORK BAND WIDTH
VIDEO DATA BAND WIDTH DURING PLAY
BAND WIDTH OF OBJECT OTHER THAN VIDEO DURING PLAY
QUALITY ENHANCING OPERATION
PRELOAD OPERATION
VIDEO DATA
BASIC DATA A
BASIC DATA B
FIRST DIF A
FIRST DIF B
SECOND DIF A
SECOND DIF B
THIRD DIF A
THIRD DIF B
BASIC DATA A
BASIC TEXT
BASIC DATA D
PLAYING PERIOD
STOP COMMAND
STOP PERIOD

FIG. 22

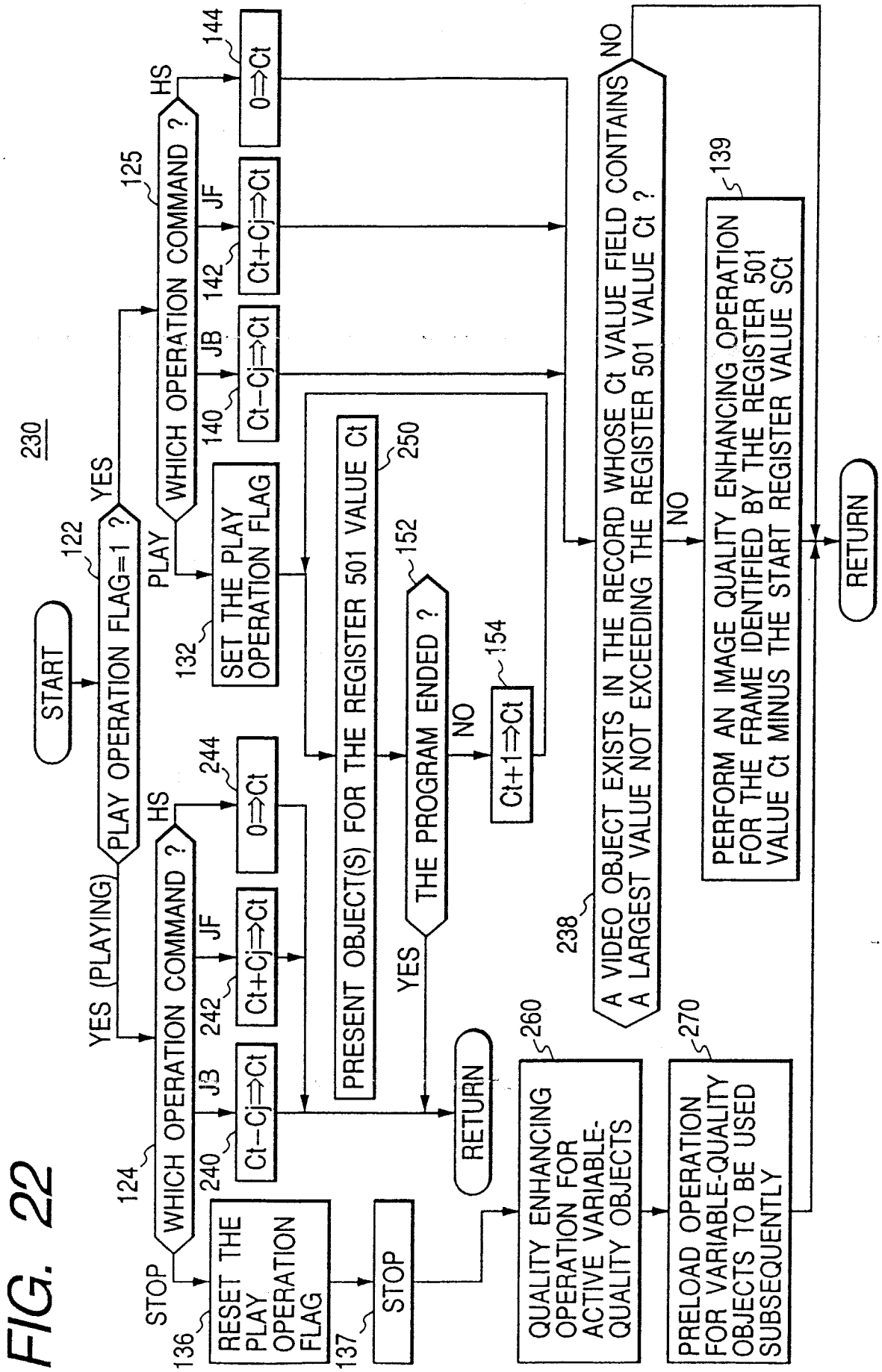

230
START
122
PLAY OPERATION FLAG=1 ?
YES (PLAYING)
YES
124
WHICH OPERATION COMMAND ?
STOP
HS
PLAY
J3
JB
JF
HS
136
RESET THE PLAY OPERATION FLAG
137
STOP
240
Ct−Cj⇒Ct
242
Ct+Cj⇒Ct
244
0⇒Ct
132
SET THE PLAY OPERATION FLAG
125
WHICH OPERATION COMMAND ?
140
Ct−Cj⇒Ct
142
Ct+Cj⇒Ct
144
0⇒Ct
250
PRESENT OBJECT(S) FOR THE REGISTER 501 VALUE Ct
152
THE PROGRAM ENDED ?
YES
NO
154
Ct+1⇒Ct
RETURN
260
QUALITY ENHANCING OPERATION FOR ACTIVE VARIABLE-QUALITY OBJECTS
270
PRELOAD OPERATION FOR VARIABLE-QUALITY OBJECTS TO BE USED SUBSEQUENTLY
238
A VIDEO OBJECT EXISTS IN THE RECORD WHOSE Ct VALUE FIELD CONTAINS A LARGEST VALUE NOT EXCEEDING THE REGISTER 501 VALUE Ct ?
NO
YES
139
PERFORM AN IMAGE QUALITY ENHANCING OPERATION FOR THE FRAME IDENTIFIED BY THE REGISTER 501 VALUE Ct MINUS THE START REGISTER VALUE SCt
RETURN

FIG. 23

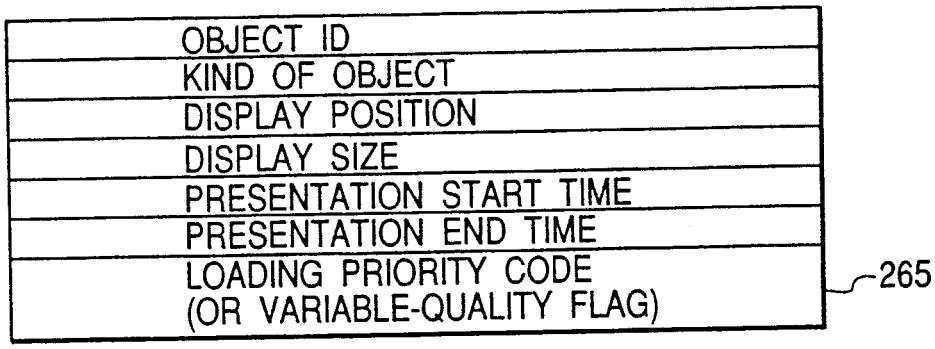
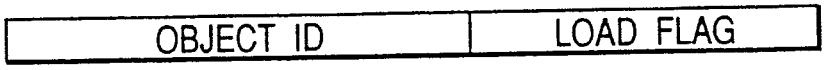

OBJECT ID
KIND OF OBJECT
DISPLAY POSITION
DISPLAY SIZE
PRESENTATION START TIME
PRESENTATION END TIME
LOADING PRIORITY CODE
(OR VARIABLE-QUALITY FLAG)
265

FIG. 24


OBJECT ID
LOAD FLAG