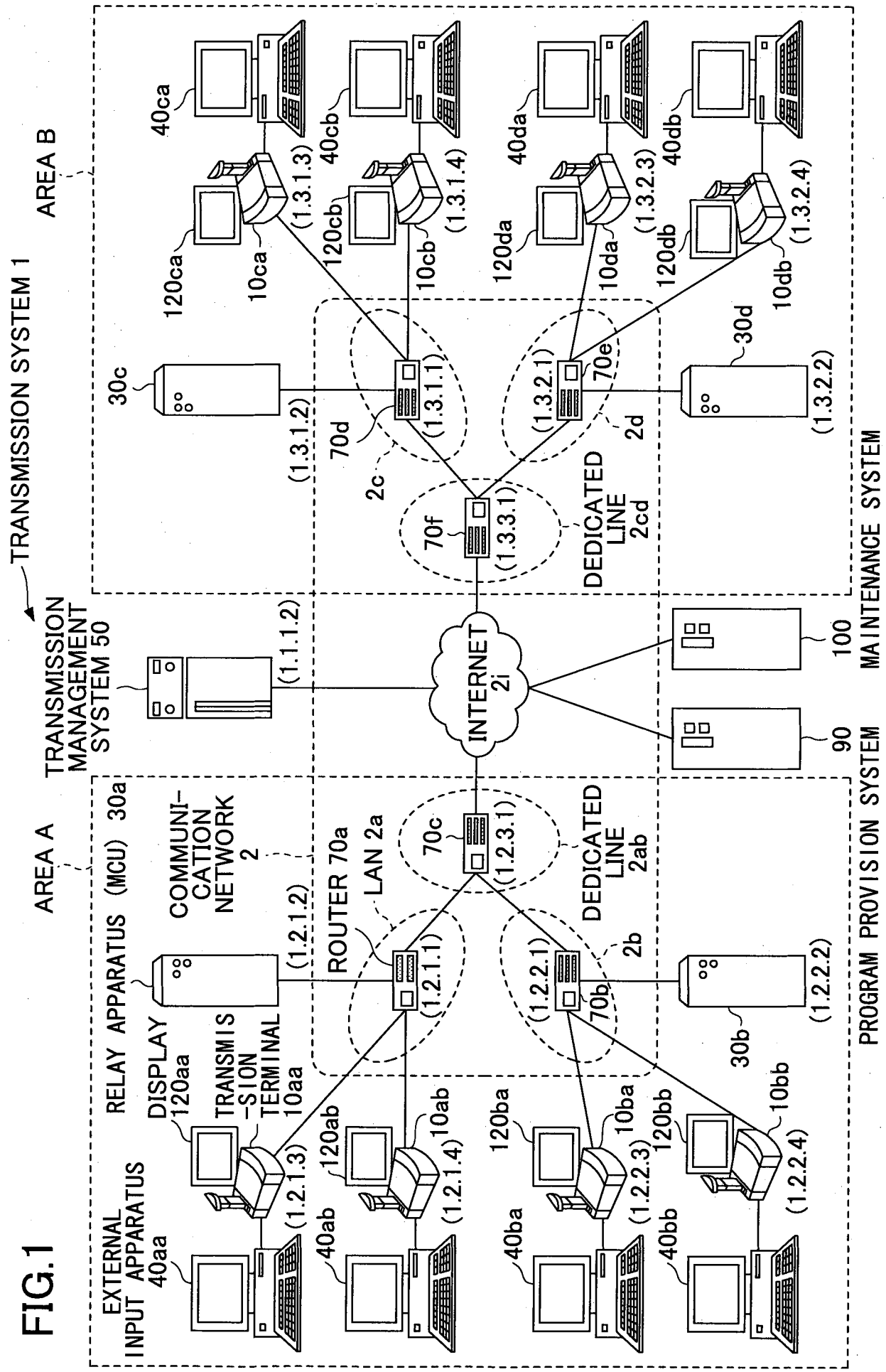
FIG.1


TRANSMISSION SYSTEM 1
AREA A
AREA B
TRANSMISSION MANAGEMENT SYSTEM 50
(1.1.1.2)
INTERNET 2i
100
MAINTENANCE SYSTEM
90
PROGRAM PROVISION SYSTEM
COMMUNI-CATION NETWORK 2
RELAY APPARATUS (MCU) 30a
(1.2.1.2)
ROUTER 70a
LAN 2a
70c
(1.2.3.1)
DEDICATED LINE 2ab
DEDICATED LINE 2cd
2b
2c
2d
70b
70d
70e
70f
(1.2.1.1)
(1.2.2.1)
(1.3.1.1)
(1.3.2.1)
(1.3.3.1)
30b
30c
30d
(1.2.2.2)
(1.3.1.2)
(1.3.2.2)
DISPLAY 120aa
TRANSMIS-SION TERMINAL 10aa
EXTERNAL INPUT APPARATUS 40aa
(1.2.1.3)
120ab
10ab
40ab
(1.2.1.4)
120ba
10ba
40ba
(1.2.2.3)
120bb
10bb
40bb
(1.2.2.4)
120ca
10ca
40ca
(1.3.1.3)
120cb
10cb
40cb
(1.3.1.4)
120da
10da
40da
(1.3.2.3)
120db
10db
40db
(1.3.2.4)

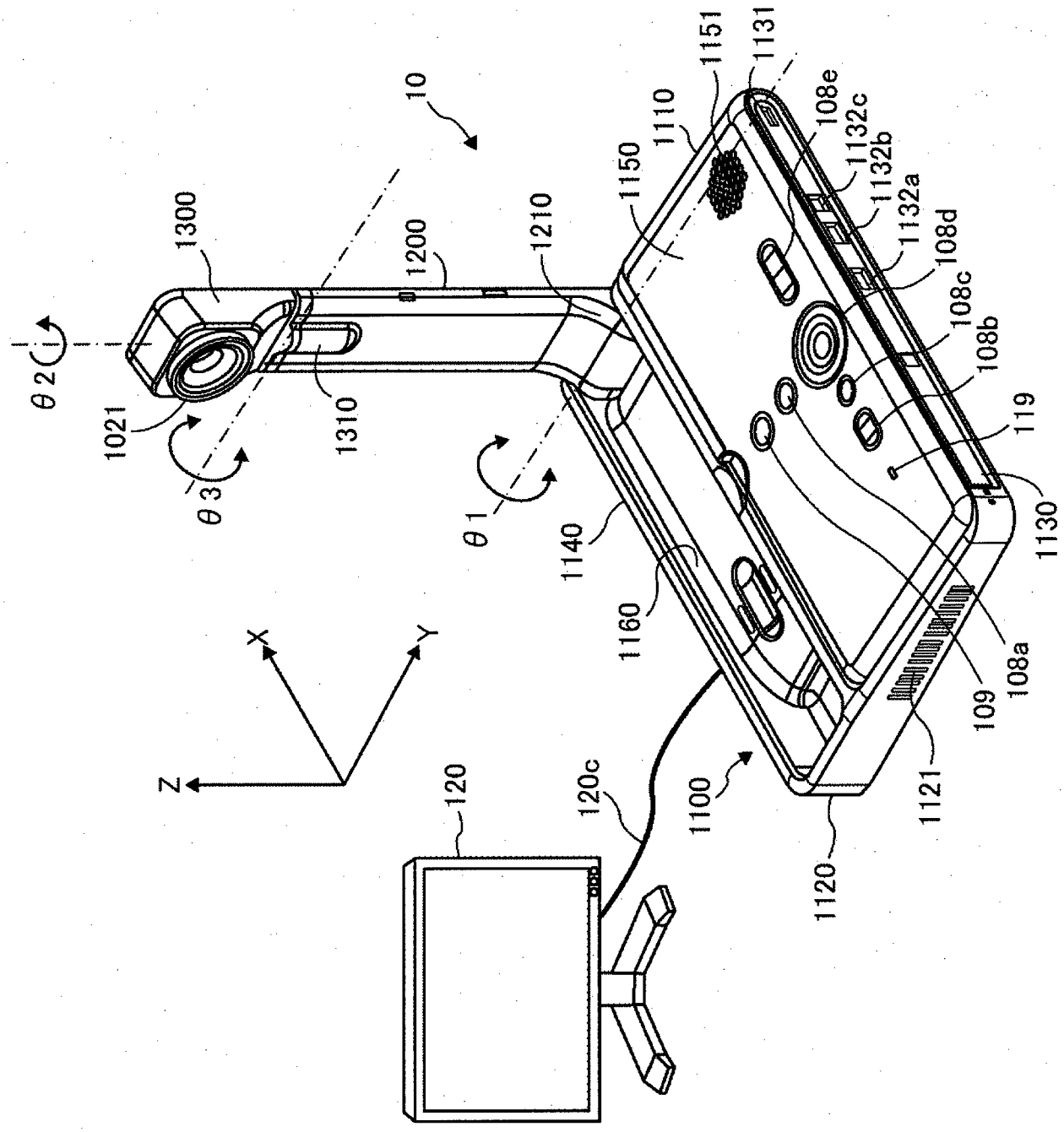

10
1300
1200
1210
1150
1110
1151
1131
108e
1132c
1132b
1132a
108d
108c
108b
119
1130
1021
1310
θ2
θ3
θ1
1140
1160
1100
1120
1121
109
108a
120
120c
X
Y
Z

FIG.2

FIG.3

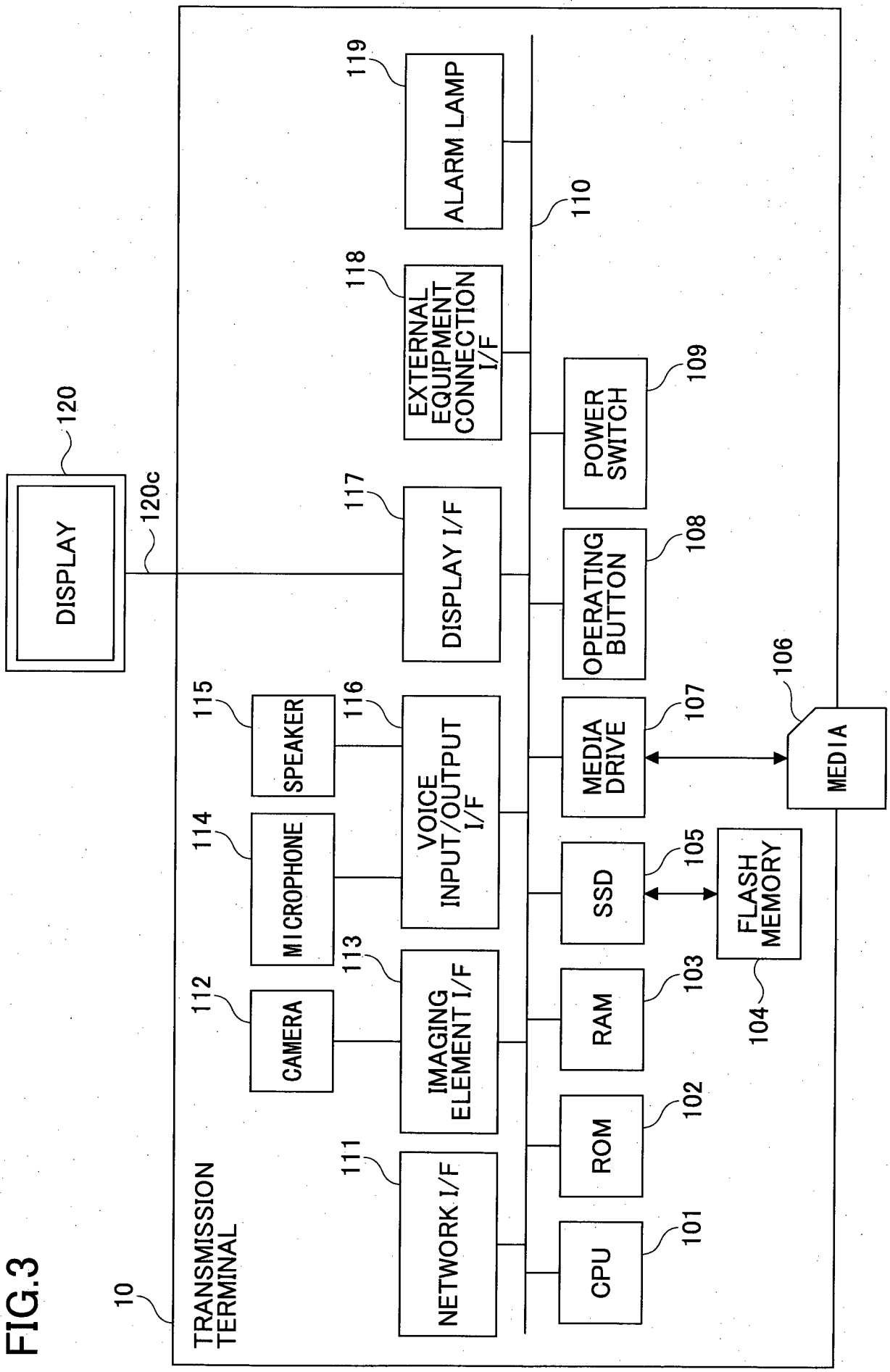

10
TRANSMISSION TERMINAL
CPU
101
ROM
102
RAM
103
FLASH MEMORY
104
SSD
105
MEDIA
106
MEDIA DRIVE
107
OPERATING BUTTON
108
POWER SWITCH
109
110
NETWORK I/F
111
CAMERA
112
IMAGING ELEMENT I/F
113
MICROPHONE
114
SPEAKER
115
VOICE INPUT/OUTPUT I/F
116
DISPLAY I/F
117
EXTERNAL EQUIPMENT CONNECTION I/F
118
ALARM LAMP
119
DISPLAY
120
120c

FIG.4

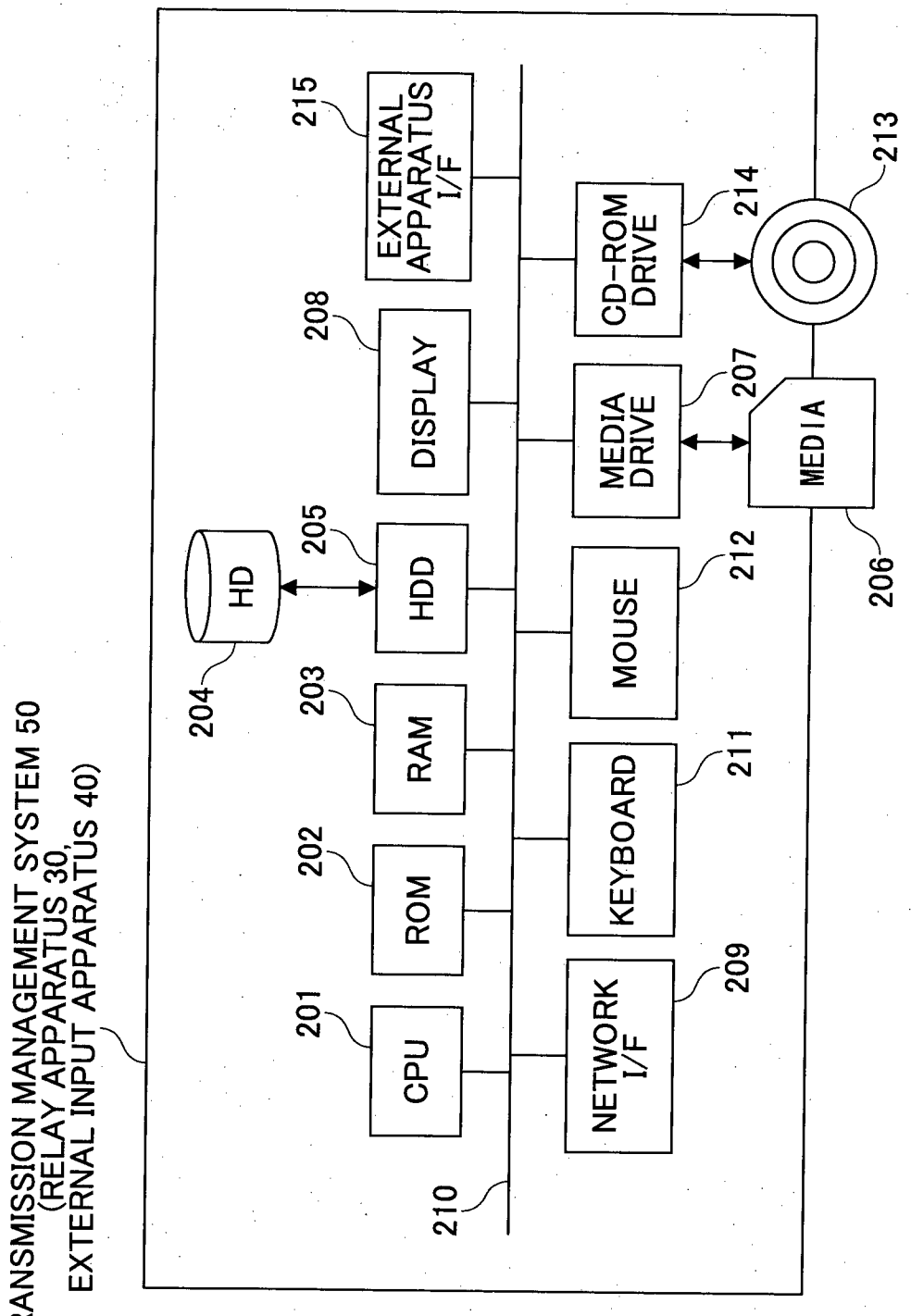
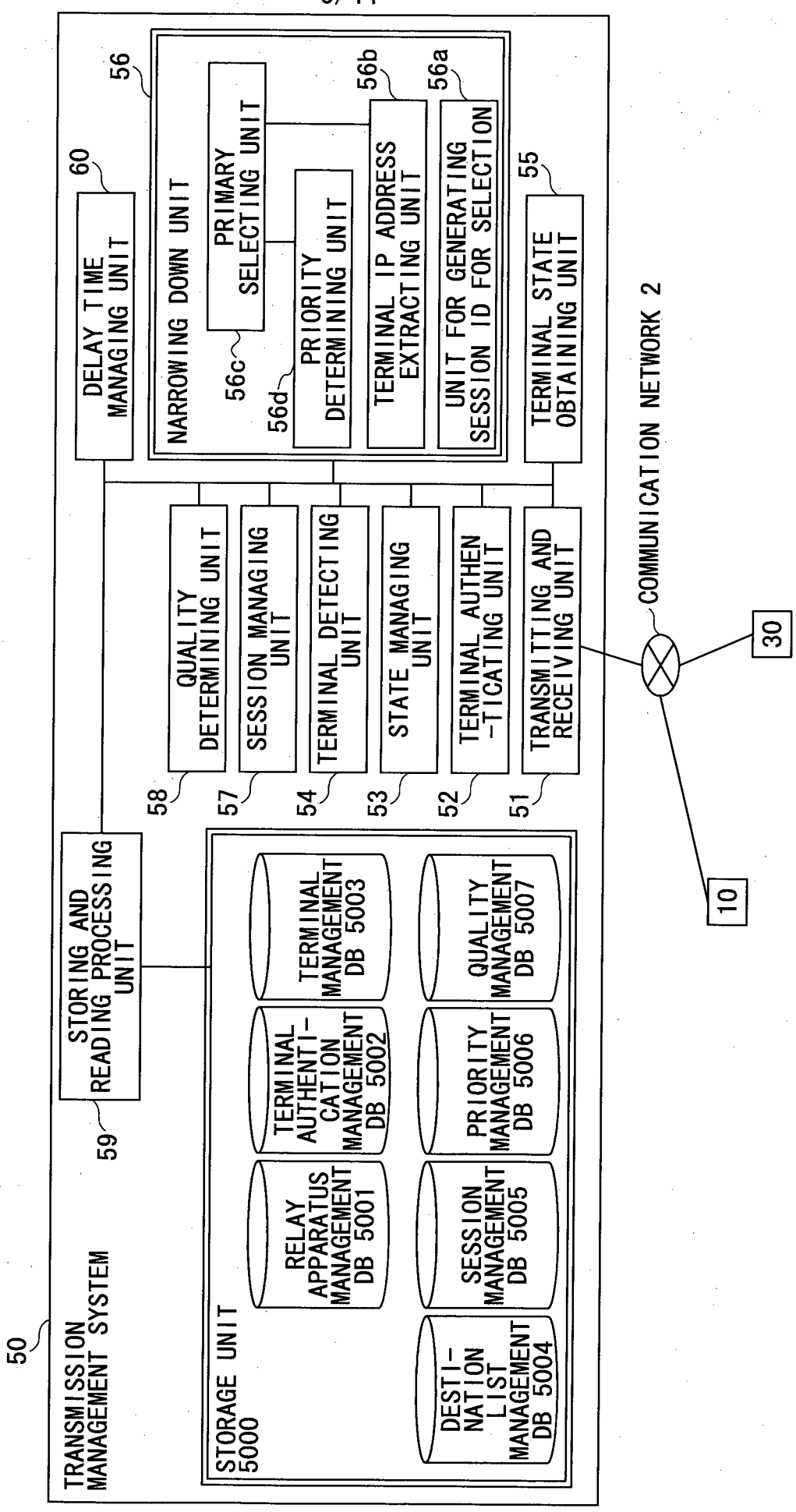

TRANSMISSION MANAGEMENT SYSTEM 50
(RELAY APPARATUS 30,
EXTERNAL INPUT APPARATUS 40)
CPU
201
ROM
202
RAM
203
HD
204
HDD
205
MEDIA
206
MEDIA DRIVE
207
DISPLAY
208
NETWORK I/F
209
210
KEYBOARD
211
MOUSE
212
213
CD-ROM DRIVE
214
EXTERNAL APPARATUS I/F
215

FIG.5A


50
TRANSMISSION MANAGEMENT SYSTEM
STORAGE UNIT 5000
RELAY APPARATUS MANAGEMENT DB 5001
TERMINAL AUTHENTI-CATION MANAGEMENT DB 5002
TERMINAL MANAGEMENT DB 5003
DESTI-NATION LIST MANAGEMENT DB 5004
SESSION MANAGEMENT DB 5005
PRIORITY MANAGEMENT DB 5006
QUALITY MANAGEMENT DB 5007
59
STORING AND READING PROCESSING UNIT
60
DELAY TIME MANAGING UNIT
56
NARROWING DOWN UNIT
56c
PRIMARY SELECTING UNIT
56d
PRIORITY DETERMINING UNIT
56b
TERMINAL IP ADDRESS EXTRACTING UNIT
56a
UNIT FOR GENERATING SESSION ID FOR SELECTION
55
TERMINAL STATE OBTAINING UNIT
58
QUALITY DETERMINING UNIT
57
SESSION MANAGING UNIT
54
TERMINAL DETECTING UNIT
53
STATE MANAGING UNIT
52
TERMINAL AUTHEN-TICATING UNIT
51
TRANSMITTING AND RECEIVING UNIT
COMMUNICATION NETWORK 2
10
30

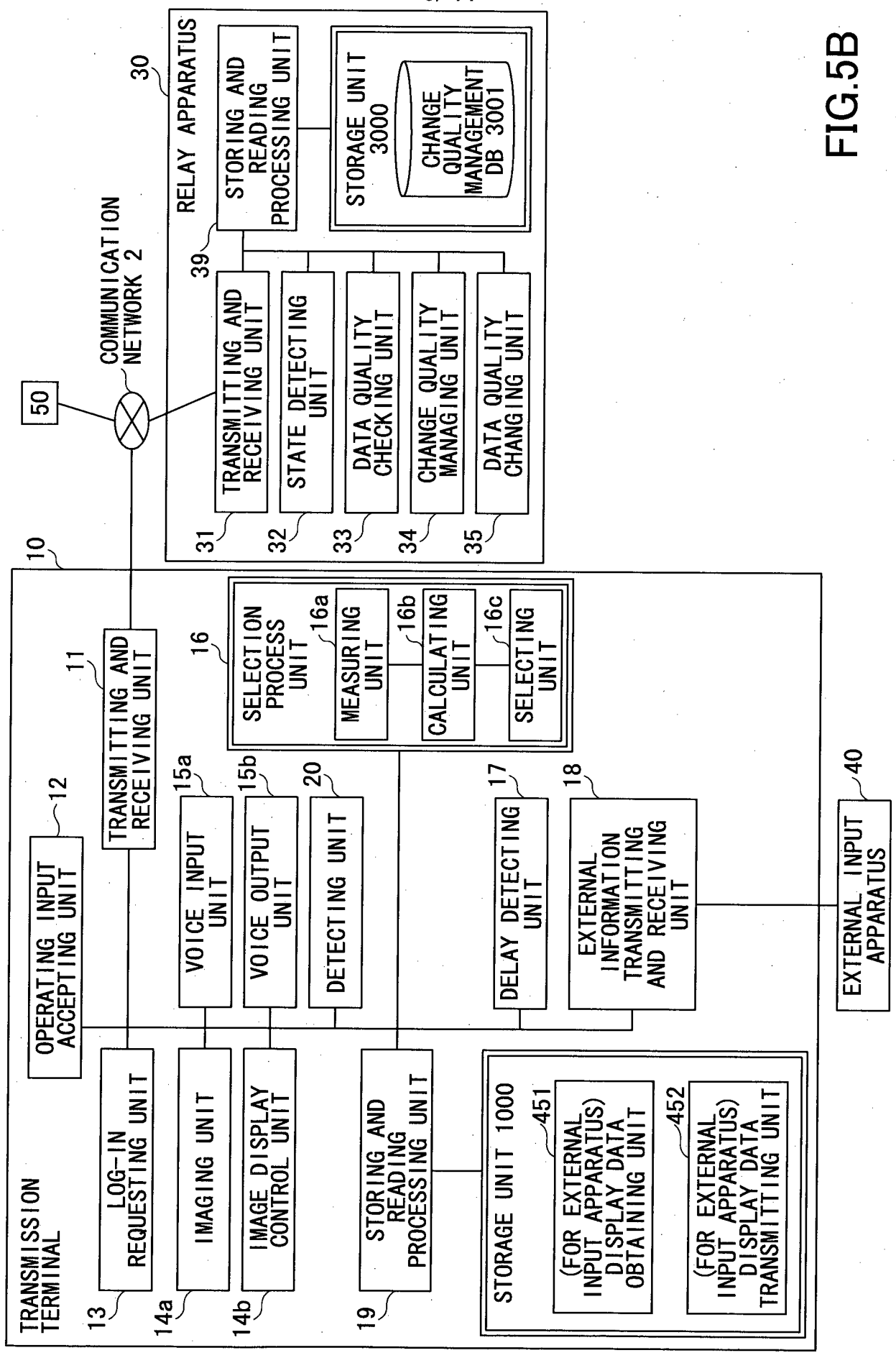

TRANSMISSION TERMINAL
10
OPERATING INPUT ACCEPTING UNIT
12
TRANSMITTING AND RECEIVING UNIT
11
LOG-IN REQUESTING UNIT
13
IMAGING UNIT
14a
IMAGE DISPLAY CONTROL UNIT
14b
VOICE INPUT UNIT
15a
VOICE OUTPUT UNIT
15b
DETECTING UNIT
20
SELECTION PROCESS UNIT
16
MEASURING UNIT
16a
CALCULATING UNIT
16b
SELECTING UNIT
16c
DELAY DETECTING UNIT
17
EXTERNAL INFORMATION TRANSMITTING AND RECEIVING UNIT
18
STORING AND READING PROCESSING UNIT
19
STORAGE UNIT 1000
(FOR EXTERNAL INPUT APPARATUS) DISPLAY DATA OBTAINING UNIT
451
(FOR EXTERNAL INPUT APPARATUS) DISPLAY DATA TRANSMITTING UNIT
452
EXTERNAL INPUT APPARATUS
40
50
COMMUNICATION NETWORK 2
RELAY APPARATUS
30
TRANSMITTING AND RECEIVING UNIT
31
STATE DETECTING UNIT
32
DATA QUALITY CHECKING UNIT
33
CHANGE QUALITY MANAGING UNIT
34
DATA QUALITY CHANGING UNIT
35
STORING AND READING PROCESSING UNIT
39
STORAGE UNIT 3000
CHANGE QUALITY MANAGEMENT DB 3001

FIG.5B

FIG.6A

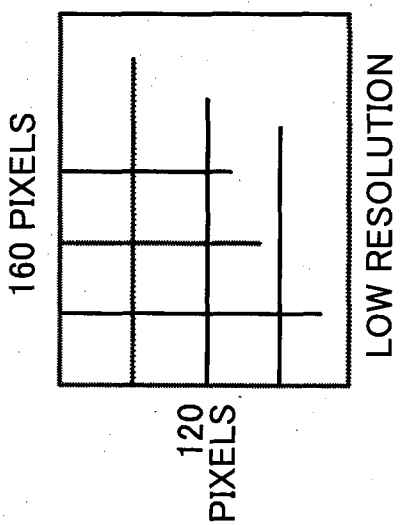


FIG.6B

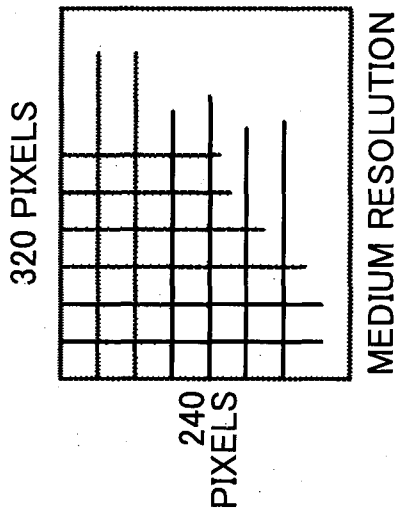


FIG.6C

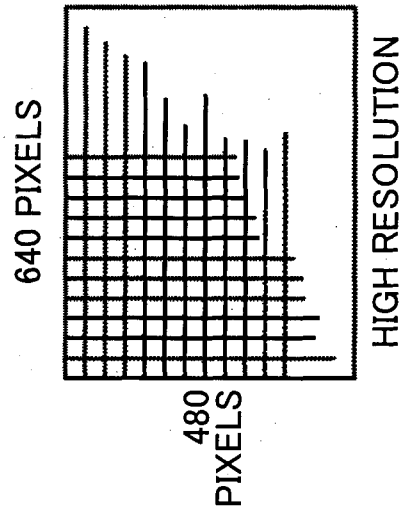


FIG.7

CHANGED QUALITY MANAGEMENT TABLE

IP ADDRESS OF RELAY DESTINATION TERMINAL	IMAGE QUALITY OF IMAGE DATA RELAYED (QUALITY OF IMAGE)
1.3.2.4	HIGH QUALITY
1.3.1.3	LOW QUALITY
1.3.4.3	MEDIUM QUALITY
...	...

FIG.8

RELAY APPARATUS MANAGEMENT TABLE

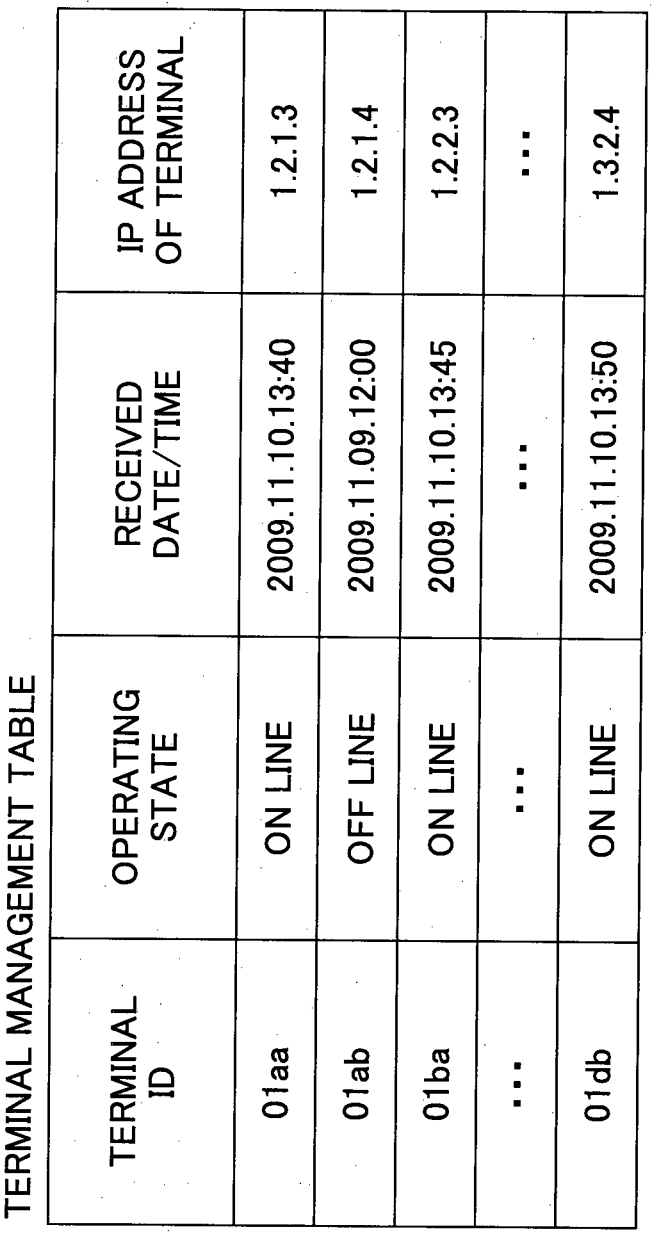
RELAY APPARATUS ID	OPERATING STATE	RECEIVED DATE/TIME	IP ADDRESS OF RELAY APPARATUS	MAXIMUM DATA TRANSMISSION SPEED (Mbps)
111a	ON LINE	2009.11.10.13:00	1.2.1.2	100
111b	ON LINE	2009.11.10.13:10	1.2.2.2	1000
111c	OFF LINE	2009.11.10.13:20	1.3.1.2	100
111d	ON LINE	2009.11.10.13:30	1.3.2.2	10

FIG.9

TERMINAL AUTHENTICATION MANAGEMENT TABLE

TERMINAL ID	PASSWORD
01aa	aaaa
01ab	abab
01ba	baba
...	...

FIG.10



TERMINAL MANAGEMENT TABLE

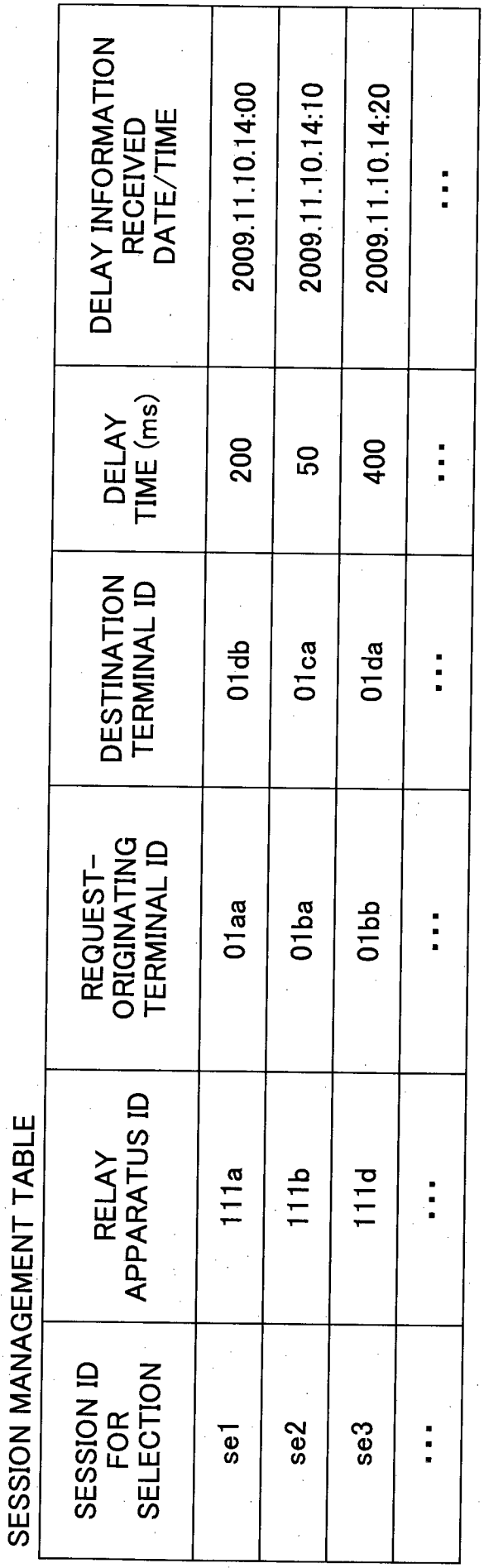
TERMINAL ID	OPERATING STATE	RECEIVED DATE/TIME	IP ADDRESS OF TERMINAL
01aa	ON LINE	2009.11.10.13:40	1.2.1.3
01ab	OFF LINE	2009.11.09.12:00	1.2.1.4
01ba	ON LINE	2009.11.10.13:45	1.2.2.3
...	...	...	...
01db	ON LINE	2009.11.10.13:50	1.3.2.4

FIG.11

DESTINATION LIST MANAGEMENT TABLE

REQUEST-ORIGINATING TERMINAL ID	DESTINATION TERMINAL ID
01aa	01ab,01ba,01db
01ab	01aa,01ba,01ca
01ba	01aa,01ab,01cb,01da
...	...
01db	01aa,01ab,01da

FIG.12



SESSION MANAGEMENT TABLE

SESSION ID FOR SELECTION	RELAY APPARATUS ID	REQUEST-ORIGINATING TERMINAL ID	DESTINATION TERMINAL ID	DELAY TIME (ms)	DELAY INFORMATION RECEIVED DATE/TIME
se1	111a	01aa	01db	200	2009.11.10.14:00
se2	111b	01ba	01ca	50	2009.11.10.14:10
se3	111d	01bb	01da	400	2009.11.10.14:20
...	...	...	...	...	...

FIG.13

ADDRESS PRIORITY MANAGEMENT TABLE

SAME/DIFFERENT PORTIONS OF DOT ADDRESS	ADDRESS PRIORITY
SAME. SAME. SAME. DIFFERENT	5
SAME. SAME. DIFFERENT.-	3
SAME. DIFFERENT.-.-	1
DIFFERENT.-.-.-	0

FIG.14

TRANSMISSION SPEED PRIORITY MANAGEMENT TABLE

MAXIMUM DATA TRANSMISSION SPEED (Mbps) AT RELAY APPARATUS	TRANSMISSION SPEED PRIORITY
1000～	5
100～1000	3
10～100	1
～10	0

FIG.15

QUALITY MANAGEMENT TABLE

DELAY TIME (ms)	IMAGE QUALITY OF IMAGE DATA (QUALITY OF IMAGE)
0～100	HIGH IMAGE QUALITY
100～300	MEDIUM IMAGE QUALITY
300～500	LOW IMAGE QUALITY
500～	(HALF)

FIG.16

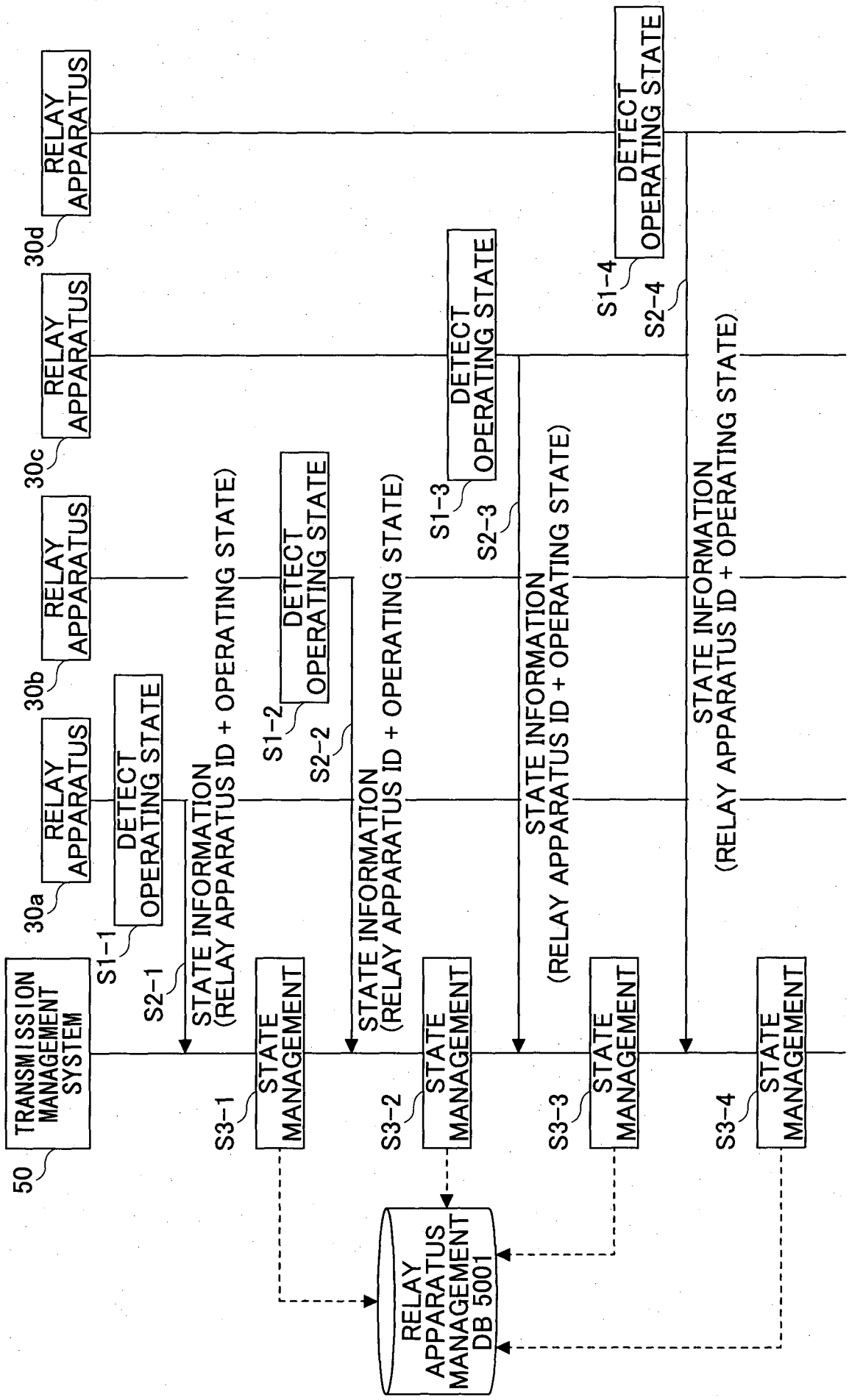
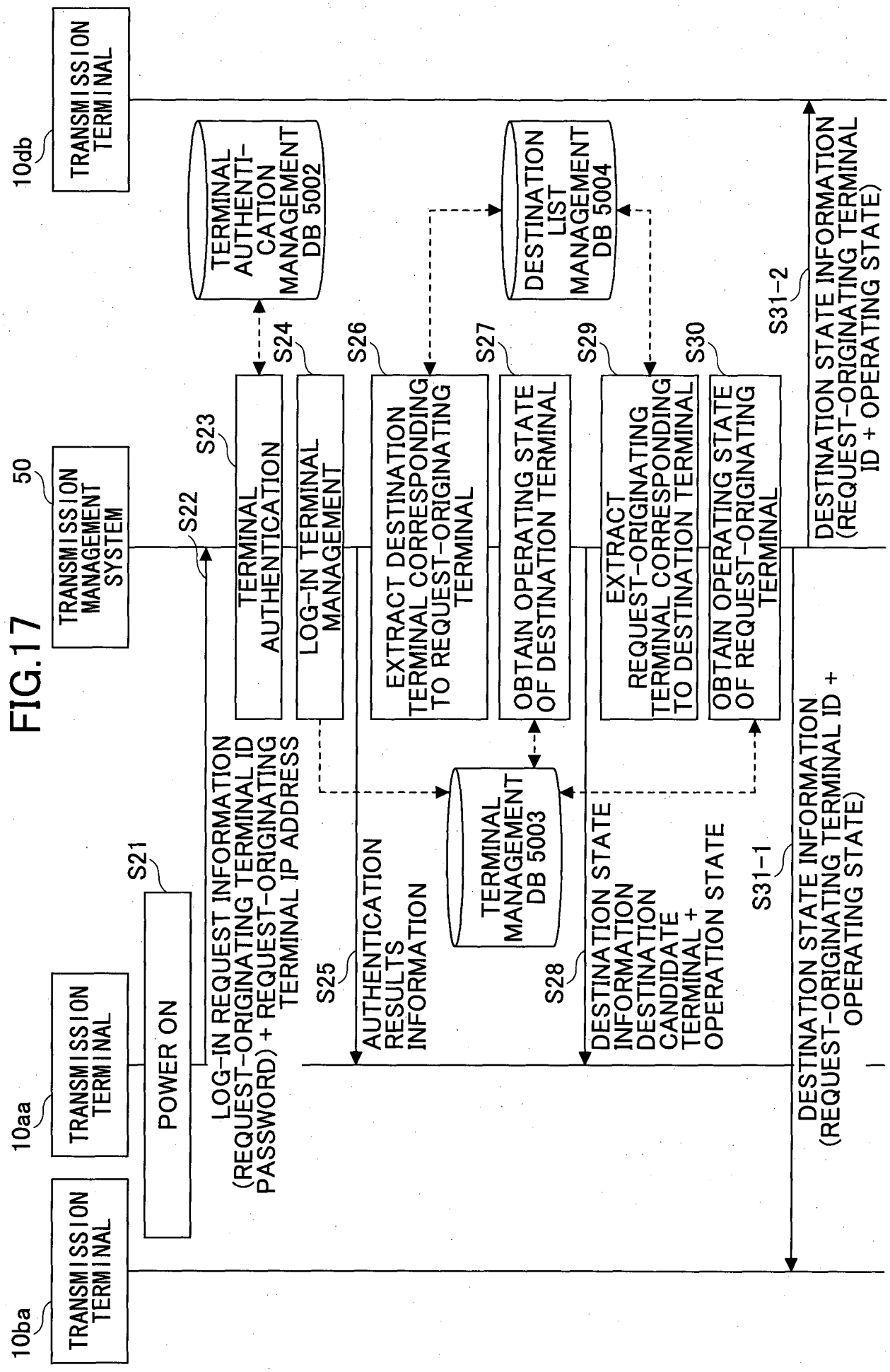

TRANSMISSION MANAGEMENT SYSTEM
50
RELAY APPARATUS
30a
30b
30c
30d
DETECT OPERATING STATE
S1-1
S1-2
S1-3
S1-4
STATE INFORMATION (RELAY APPARATUS ID + OPERATING STATE)
S2-1
S2-2
S2-3
S2-4
STATE MANAGEMENT
S3-1
S3-2
S3-3
S3-4
RELAY APPARATUS MANAGEMENT DB 5001

FIG.17


10ba
TRANSMISSION TERMINAL
10aa
TRANSMISSION TERMINAL
10db
TRANSMISSION TERMINAL
50
TRANSMISSION MANAGEMENT SYSTEM
TERMINAL AUTHENTI-CATION MANAGEMENT DB 5002
DESTINATION LIST MANAGEMENT DB 5004
TERMINAL MANAGEMENT DB 5003
S21
POWER ON
S22
LOG-IN REQUEST INFORMATION (REQUEST-ORIGINATING TERMINAL ID PASSWORD) + REQUEST-ORIGINATING TERMINAL IP ADDRESS
S23
TERMINAL AUTHENTICATION
S24
LOG-IN TERMINAL MANAGEMENT
S25
AUTHENTICATION RESULTS INFORMATION
S26
EXTRACT DESTINATION TERMINAL CORRESPONDING TO REQUEST-ORIGINATING TERMINAL
S27
OBTAIN OPERATING STATE OF DESTINATION TERMINAL
S28
DESTINATION STATE INFORMATION DESTINATION CANDIDATE TERMINAL + OPERATION STATE
S29
EXTRACT REQUEST-ORIGINATING TERMINAL CORRESPONDING TO DESTINATION TERMINAL
S30
OBTAIN OPERATING STATE OF REQUEST-ORIGINATING TERMINAL
S31-1
DESTINATION STATE INFORMATION (REQUEST-ORIGINATING TERMINAL ID + OPERATING STATE)
S31-2
DESTINATION STATE INFORMATION (REQUEST-ORIGINATING TERMINAL ID + OPERATING STATE)

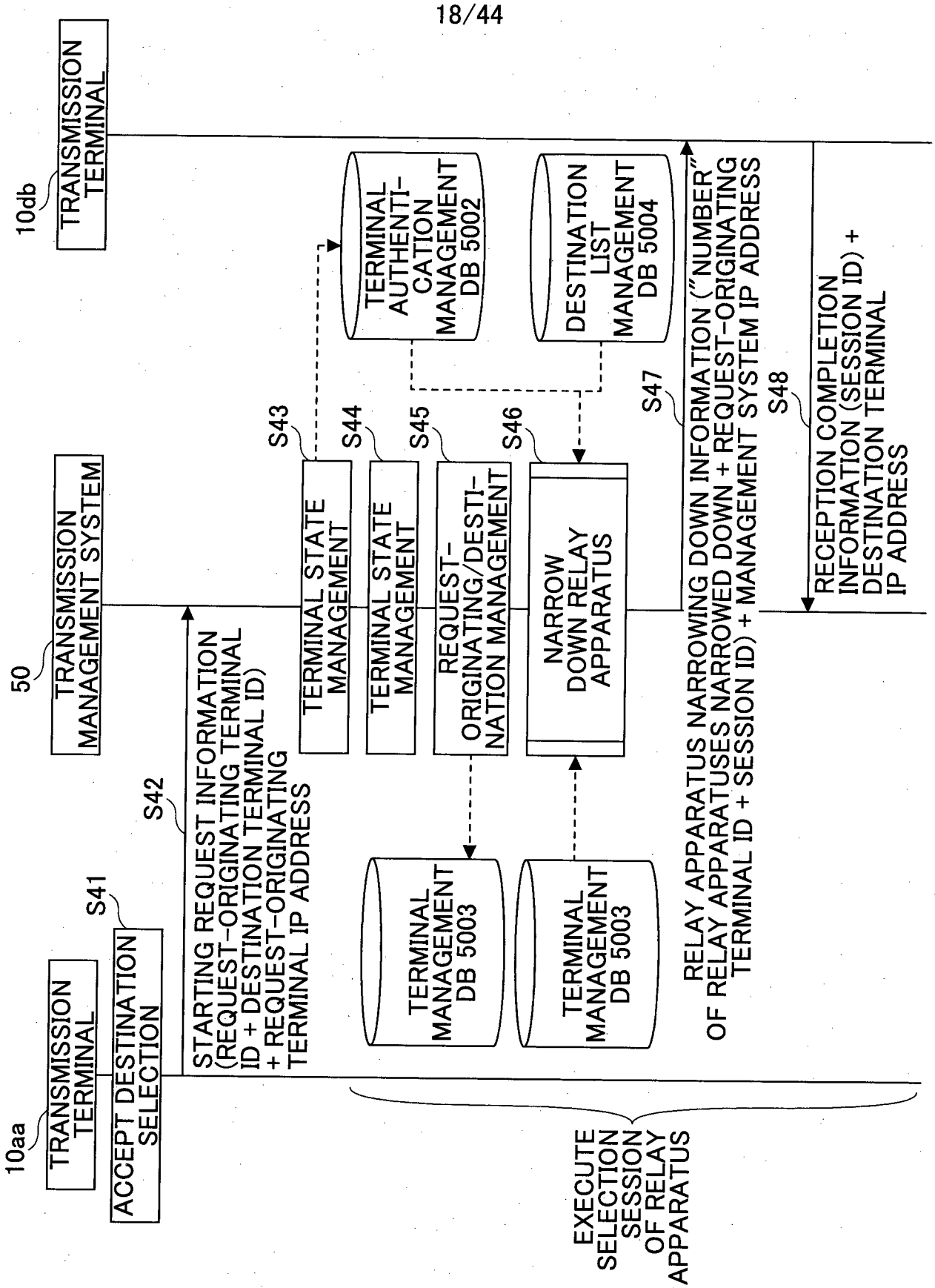

10aa
TRANSMISSION TERMINAL
ACCEPT DESTINATION SELECTION
S41
S42
STARTING REQUEST INFORMATION (REQUEST-ORIGINATING TERMINAL ID + DESTINATION TERMINAL ID) + REQUEST-ORIGINATING TERMINAL IP ADDRESS
50
TRANSMISSION MANAGEMENT SYSTEM
10db
TRANSMISSION TERMINAL
S43
TERMINAL STATE MANAGEMENT
S44
TERMINAL STATE MANAGEMENT
S45
REQUEST-ORIGINATING/DESTINATION MANAGEMENT
S46
NARROW DOWN RELAY APPARATUS
TERMINAL AUTHENTICATION MANAGEMENT DB 5002
DESTINATION LIST MANAGEMENT DB 5004
TERMINAL MANAGEMENT DB 5003
TERMINAL MANAGEMENT DB 5003
S47
RELAY APPARATUS NARROWING DOWN INFORMATION ("NUMBER" OF RELAY APPARATUSES NARROWED DOWN + REQUEST-ORIGINATING TERMINAL ID + SESSION ID) + MANAGEMENT SYSTEM IP ADDRESS
S48
RECEPTION COMPLETION INFORMATION (SESSION ID) + DESTINATION TERMINAL IP ADDRESS
EXECUTE SELECTION SESSION OF RELAY APPARATUS

FIG.18

FIG.19

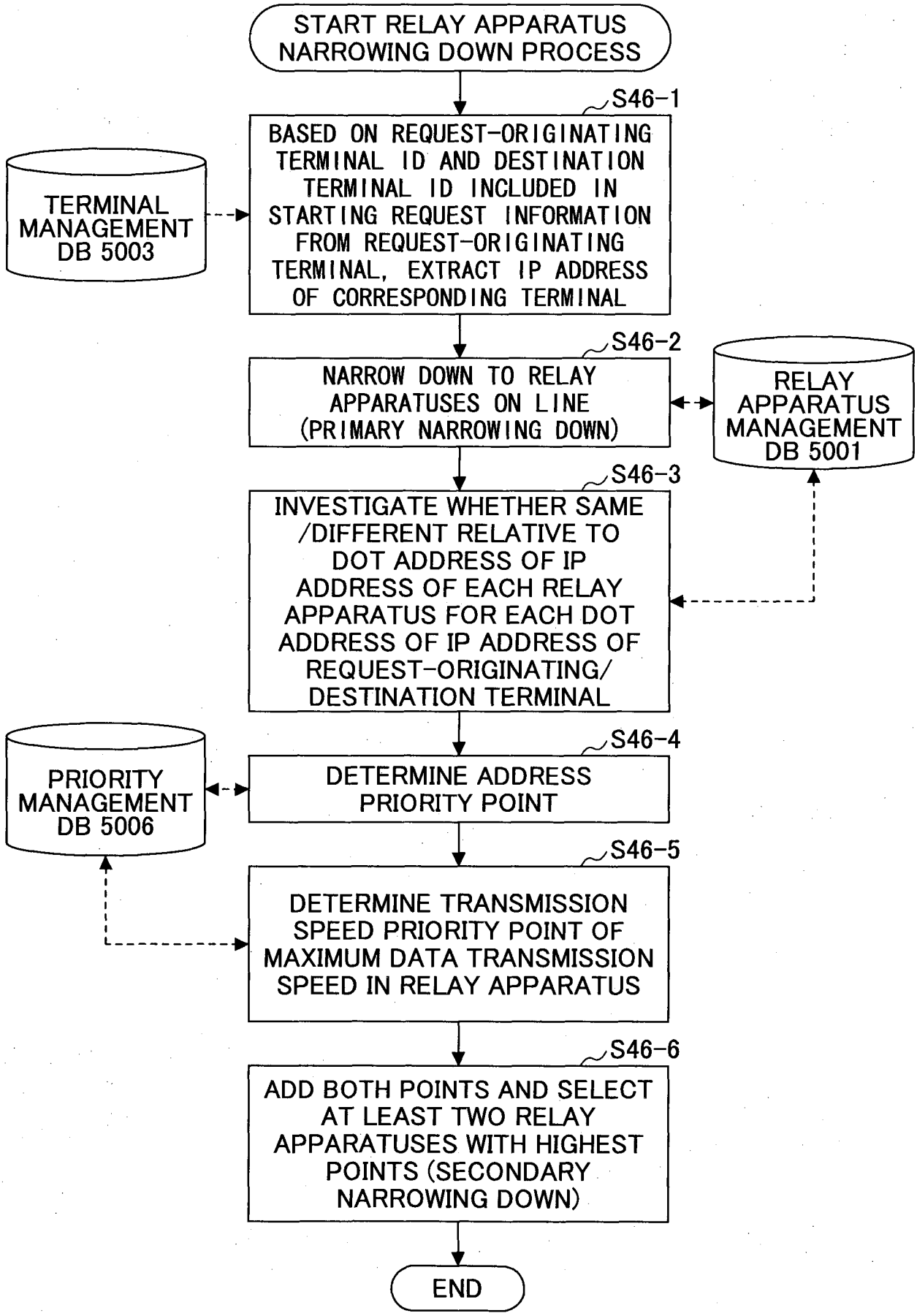

START RELAY APPARATUS NARROWING DOWN PROCESS
S46-1
BASED ON REQUEST-ORIGINATING TERMINAL ID AND DESTINATION TERMINAL ID INCLUDED IN STARTING REQUEST INFORMATION FROM REQUEST-ORIGINATING TERMINAL, EXTRACT IP ADDRESS OF CORRESPONDING TERMINAL
TERMINAL MANAGEMENT DB 5003
S46-2
NARROW DOWN TO RELAY APPARATUSES ON LINE (PRIMARY NARROWING DOWN)
RELAY APPARATUS MANAGEMENT DB 5001
S46-3
INVESTIGATE WHETHER SAME /DIFFERENT RELATIVE TO DOT ADDRESS OF IP ADDRESS OF EACH RELAY APPARATUS FOR EACH DOT ADDRESS OF IP ADDRESS OF REQUEST-ORIGINATING/ DESTINATION TERMINAL
S46-4
DETERMINE ADDRESS PRIORITY POINT
PRIORITY MANAGEMENT DB 5006
S46-5
DETERMINE TRANSMISSION SPEED PRIORITY POINT OF MAXIMUM DATA TRANSMISSION SPEED IN RELAY APPARATUS
S46-6
ADD BOTH POINTS AND SELECT AT LEAST TWO RELAY APPARATUSES WITH HIGHEST POINTS (SECONDARY NARROWING DOWN)
END

FIG.20

RELAY APPARATUS ID	ADDRESS PRIORITY		TRANSMISSION SPEED PRIORITY POINT	COMBINED POINT
	POINT FOR TERMINAL 10aa	POINT FOR TERMINAL 10bd		
111a	5	1	3	8
111b	3	1	5	8
111c	–	–	–	–
111d	1	5	1	6

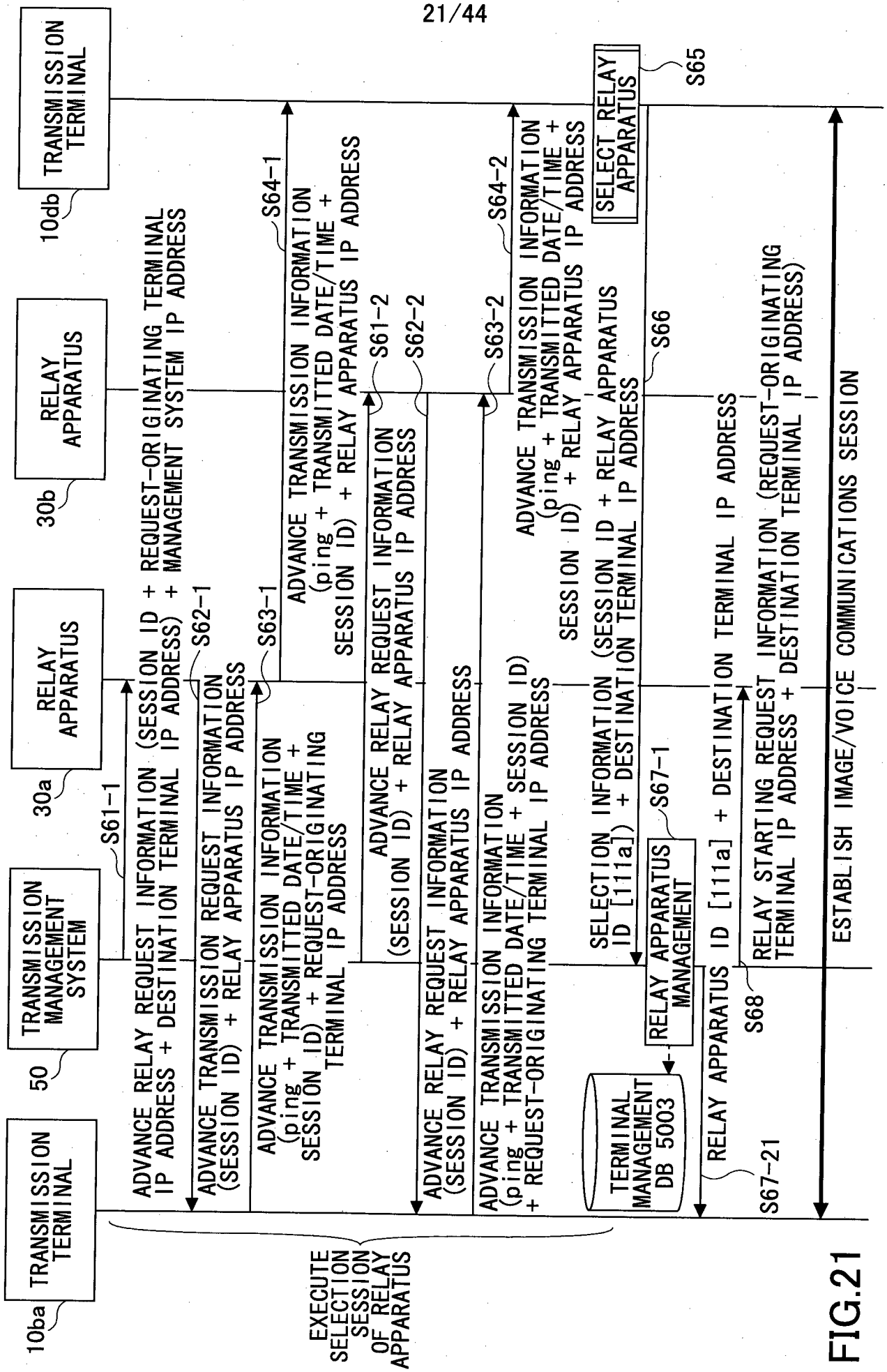

10ba
TRANSMISSION TERMINAL
50
TRANSMISSION MANAGEMENT SYSTEM
30a
RELAY APPARATUS
30b
RELAY APPARATUS
10db
TRANSMISSION TERMINAL
EXECUTE SELECTION SESSION OF RELAY APPARATUS
S61-1
ADVANCE RELAY REQUEST INFORMATION (SESSION ID + REQUEST-ORIGINATING TERMINAL IP ADDRESS + DESTINATION TERMINAL IP ADDRESS) + MANAGEMENT SYSTEM IP ADDRESS
S62-1
ADVANCE TRANSMISSION REQUEST INFORMATION (SESSION ID) + RELAY APPARATUS IP ADDRESS
S63-1
ADVANCE TRANSMISSION INFORMATION (ping + TRANSMITTED DATE/TIME + SESSION ID) + REQUEST-ORIGINATING TERMINAL IP ADDRESS
S64-1
ADVANCE TRANSMISSION INFORMATION (ping + TRANSMITTED DATE/TIME + SESSION ID) + RELAY APPARATUS IP ADDRESS
S61-2
ADVANCE RELAY REQUEST INFORMATION (SESSION ID) + RELAY APPARATUS IP ADDRESS
S62-2
ADVANCE RELAY REQUEST INFORMATION (SESSION ID) + RELAY APPARATUS IP ADDRESS
S63-2
ADVANCE TRANSMISSION INFORMATION (ping + TRANSMITTED DATE/TIME + SESSION ID) + REQUEST-ORIGINATING TERMINAL IP ADDRESS
S64-2
ADVANCE TRANSMISSION INFORMATION (ping + TRANSMITTED DATE/TIME + SESSION ID) + RELAY APPARATUS IP ADDRESS
SELECT RELAY APPARATUS
S65
S66
SELECTION INFORMATION (SESSION ID + RELAY APPARATUS ID [111a]) + DESTINATION TERMINAL IP ADDRESS
S67-1
RELAY APPARATUS MANAGEMENT
TERMINAL MANAGEMENT DB 5003
S67-21
RELAY APPARATUS ID [111a] + DESTINATION TERMINAL IP ADDRESS
S68
RELAY STARTING REQUEST INFORMATION (REQUEST-ORIGINATING TERMINAL IP ADDRESS + DESTINATION TERMINAL IP ADDRESS)
ESTABLISH IMAGE/VOICE COMMUNICATIONS SESSION

FIG.21

FIG.22

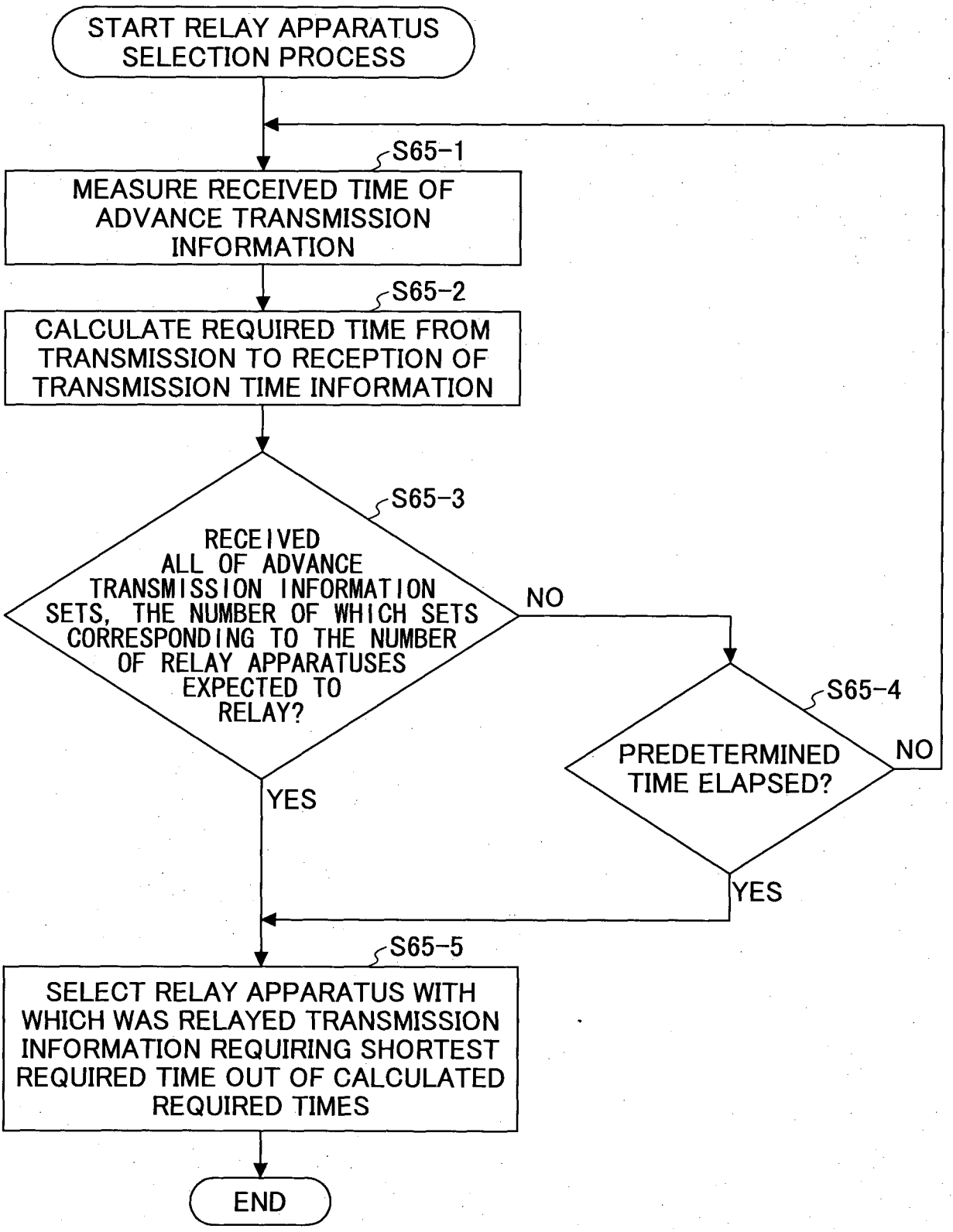

START RELAY APPARATUS SELECTION PROCESS
S65-1
MEASURE RECEIVED TIME OF ADVANCE TRANSMISSION INFORMATION
S65-2
CALCULATE REQUIRED TIME FROM TRANSMISSION TO RECEPTION OF TRANSMISSION TIME INFORMATION
S65-3
RECEIVED ALL OF ADVANCE TRANSMISSION INFORMATION SETS, THE NUMBER OF WHICH SETS CORRESPONDING TO THE NUMBER OF RELAY APPARATUSES EXPECTED TO RELAY?
NO
YES
S65-4
PREDETERMINED TIME ELAPSED?
NO
YES
S65-5
SELECT RELAY APPARATUS WITH WHICH WAS RELAYED TRANSMISSION INFORMATION REQUIRING SHORTEST REQUIRED TIME OUT OF CALCULATED REQUIRED TIMES
END

FIG.23

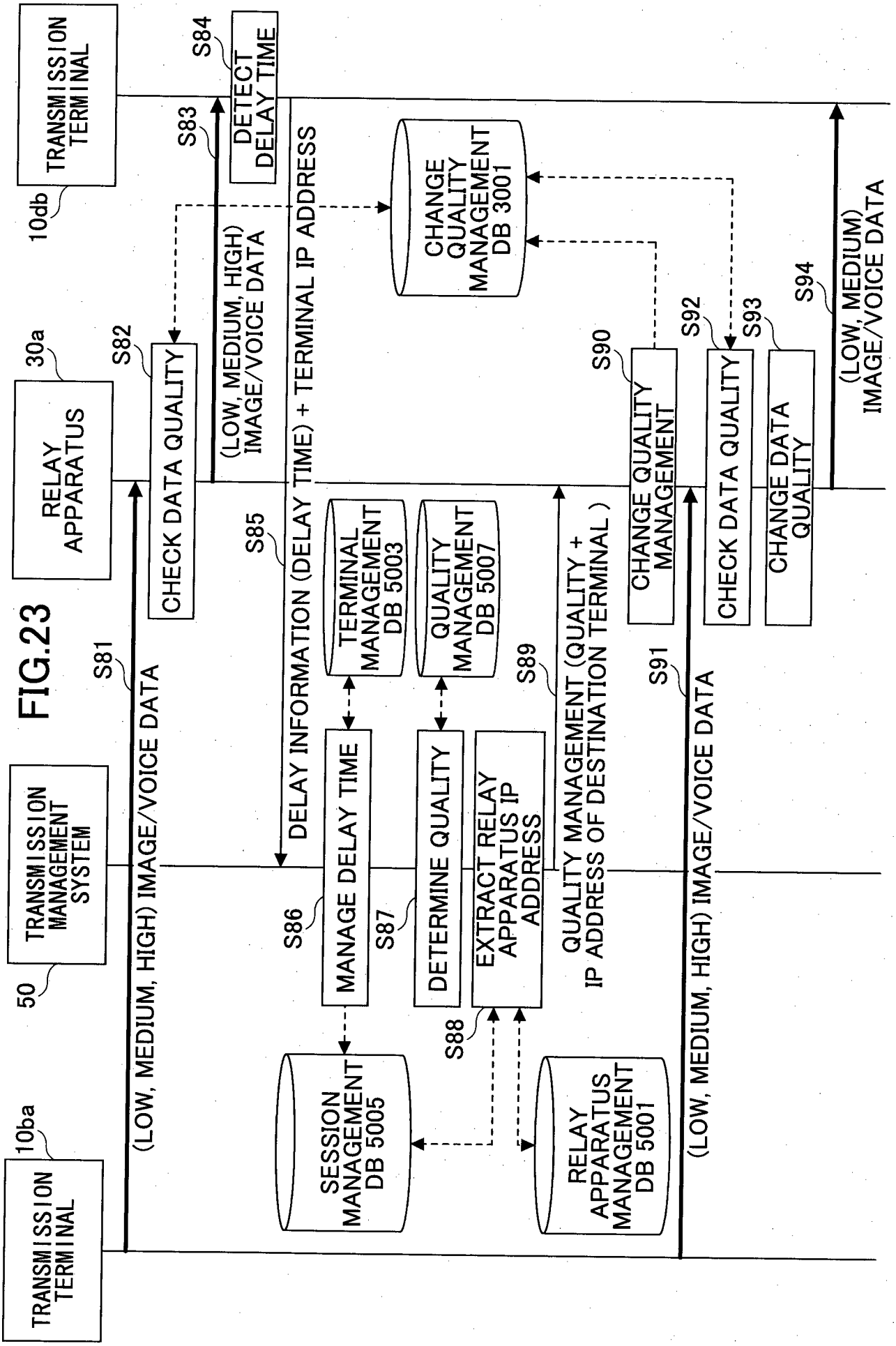
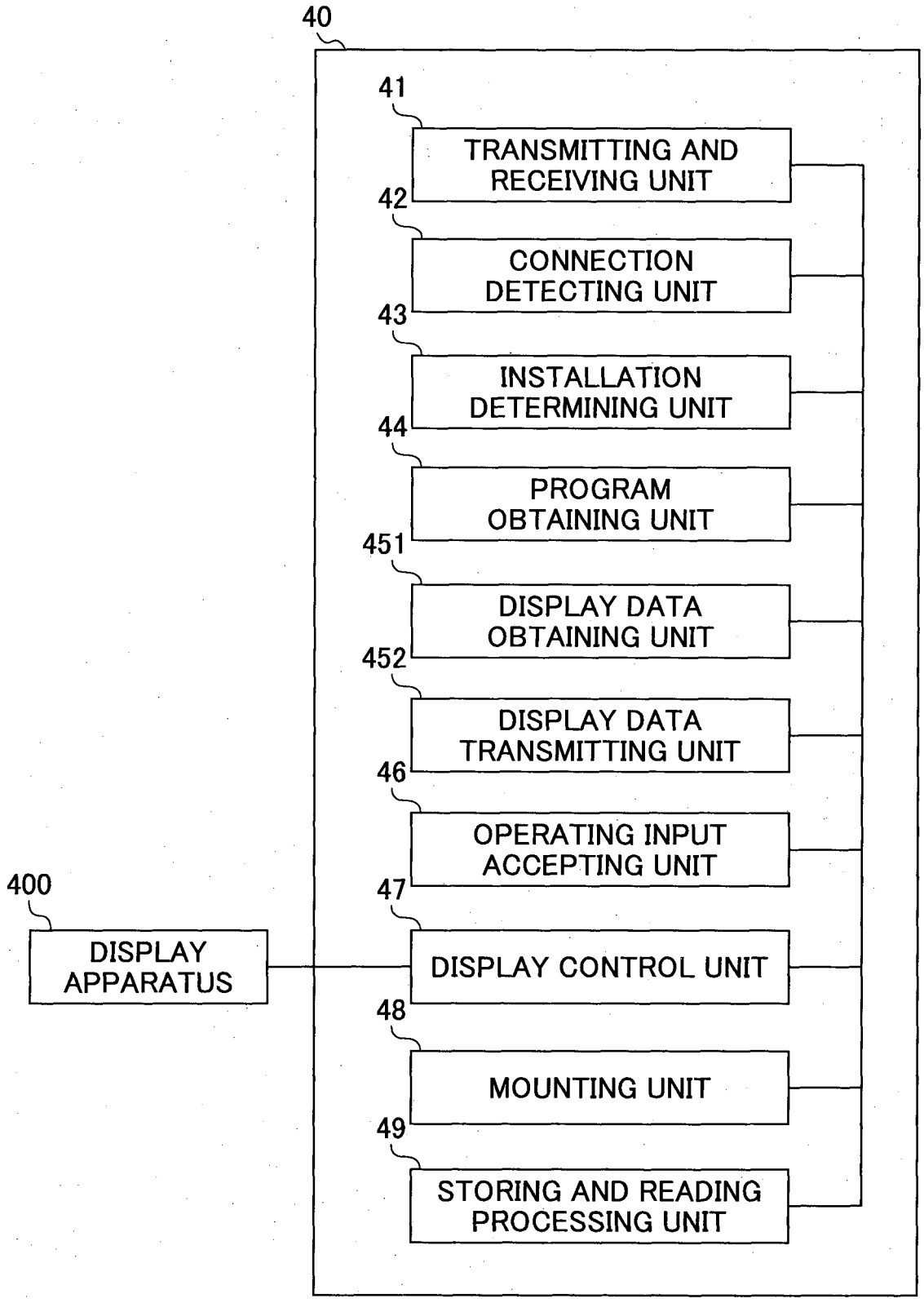

TRANSMISSION TERMINAL
10ba
(LOW, MEDIUM, HIGH) IMAGE/VOICE DATA
S81
TRANSMISSION MANAGEMENT SYSTEM
50
RELAY APPARATUS
30a
CHECK DATA QUALITY
S82
(LOW, MEDIUM, HIGH) IMAGE/VOICE DATA
S83
TRANSMISSION TERMINAL
10db
DETECT DELAY TIME
S84
DELAY INFORMATION (DELAY TIME) + TERMINAL IP ADDRESS
S85
MANAGE DELAY TIME
S86
DETERMINE QUALITY
S87
EXTRACT RELAY APPARATUS IP ADDRESS
S88
QUALITY MANAGEMENT (QUALITY + IP ADDRESS OF DESTINATION TERMINAL)
S89
CHANGE QUALITY MANAGEMENT
S90
(LOW, MEDIUM, HIGH) IMAGE/VOICE DATA
S91
CHECK DATA QUALITY
S92
CHANGE DATA QUALITY
S93
(LOW, MEDIUM) IMAGE/VOICE DATA
S94
SESSION MANAGEMENT DB 5005
TERMINAL MANAGEMENT DB 5003
QUALITY MANAGEMENT DB 5007
RELAY APPARATUS MANAGEMENT DB 5001
CHANGE QUALITY MANAGEMENT DB 3001

FIG.24


40
41
TRANSMITTING AND RECEIVING UNIT
42
CONNECTION DETECTING UNIT
43
INSTALLATION DETERMINING UNIT
44
PROGRAM OBTAINING UNIT
451
DISPLAY DATA OBTAINING UNIT
452
DISPLAY DATA TRANSMITTING UNIT
46
OPERATING INPUT ACCEPTING UNIT
47
DISPLAY CONTROL UNIT
48
MOUNTING UNIT
49
STORING AND READING PROCESSING UNIT
400
DISPLAY APPARATUS

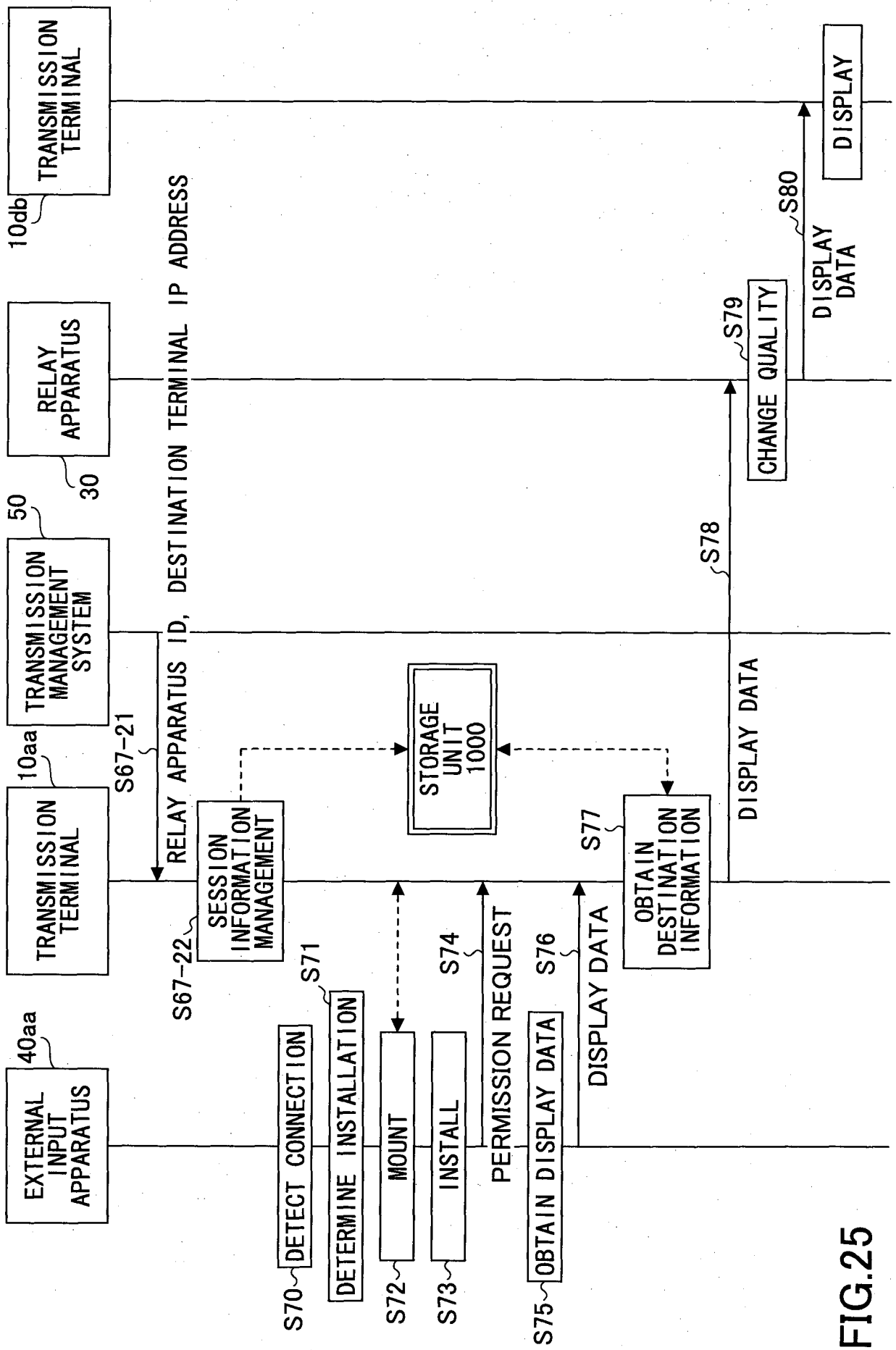

EXTERNAL INPUT APPARATUS
40aa
TRANSMISSION TERMINAL
10aa
TRANSMISSION MANAGEMENT SYSTEM
50
RELAY APPARATUS
30
TRANSMISSION TERMINAL
10db
DETECT CONNECTION
S70
DETERMINE INSTALLATION
S71
MOUNT
S72
INSTALL
S73
PERMISSION REQUEST
S74
OBTAIN DISPLAY DATA
S75
DISPLAY DATA
S76
OBTAIN DESTINATION INFORMATION
S77
DISPLAY DATA
S78
CHANGE QUALITY
S79
DISPLAY DATA
S80
DISPLAY
SESSION INFORMATION MANAGEMENT
S67-22
RELAY APPARATUS ID, DESTINATION TERMINAL IP ADDRESS
S67-21
STORAGE UNIT 1000

FIG.25

FIG.26

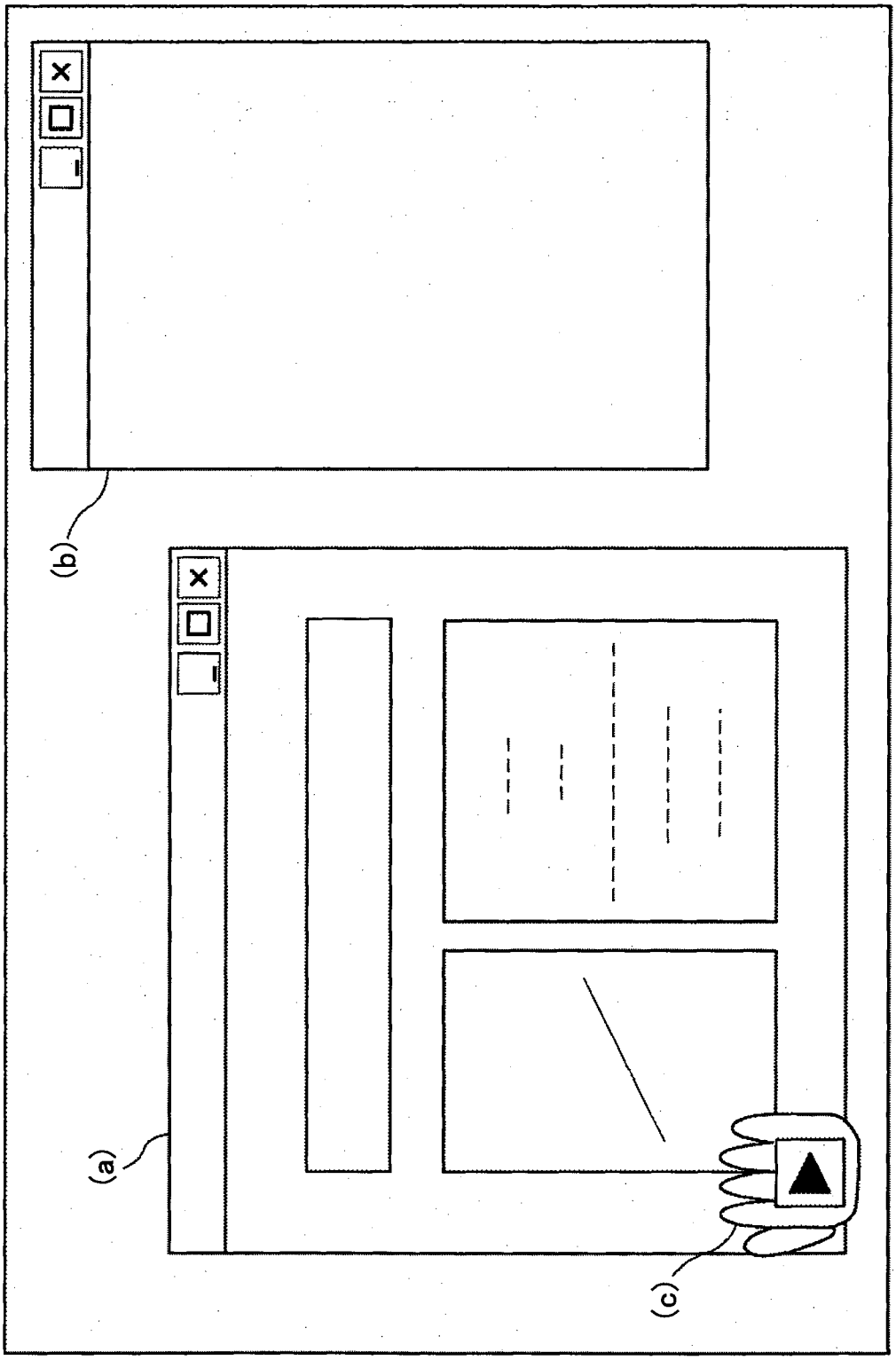


FIG.27

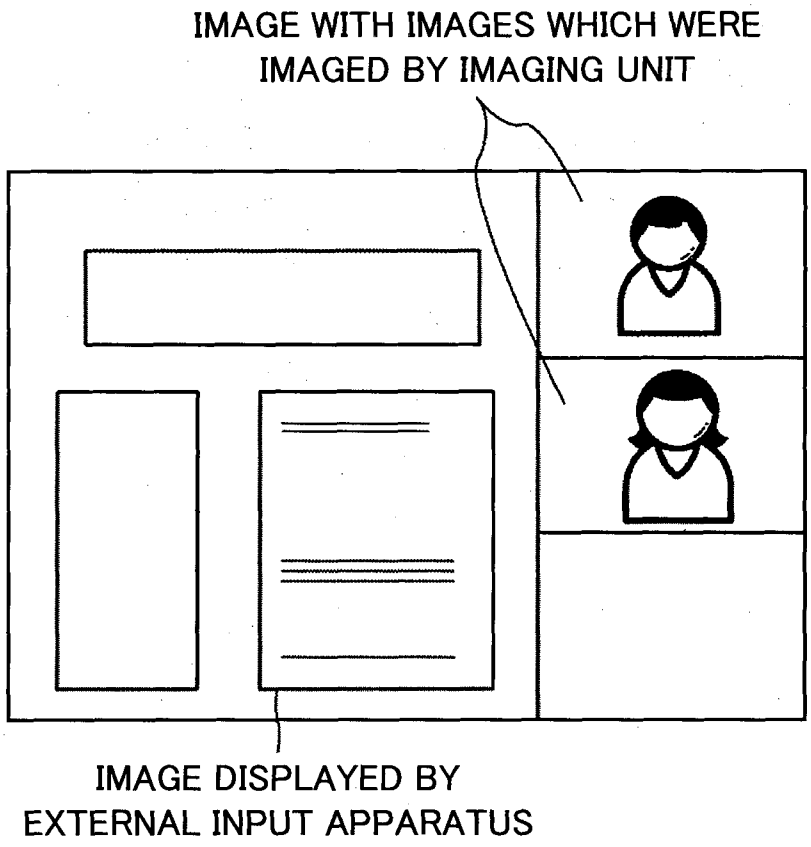


IMAGE WITH IMAGES WHICH WERE IMAGED BY IMAGING UNIT
IMAGE DISPLAYED BY EXTERNAL INPUT APPARATUS

FIG.28

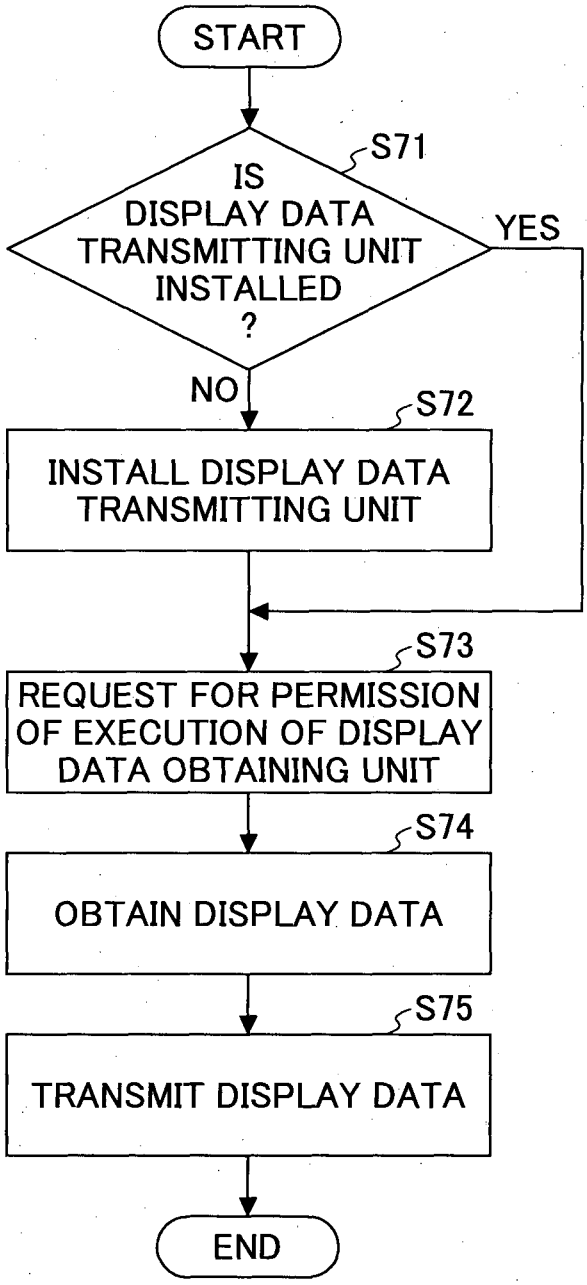

START
S71
IS DISPLAY DATA TRANSMITTING UNIT INSTALLED ?
YES
NO
S72
INSTALL DISPLAY DATA TRANSMITTING UNIT
S73
REQUEST FOR PERMISSION OF EXECUTION OF DISPLAY DATA OBTAINING UNIT
S74
OBTAIN DISPLAY DATA
S75
TRANSMIT DISPLAY DATA
END

FIG.29

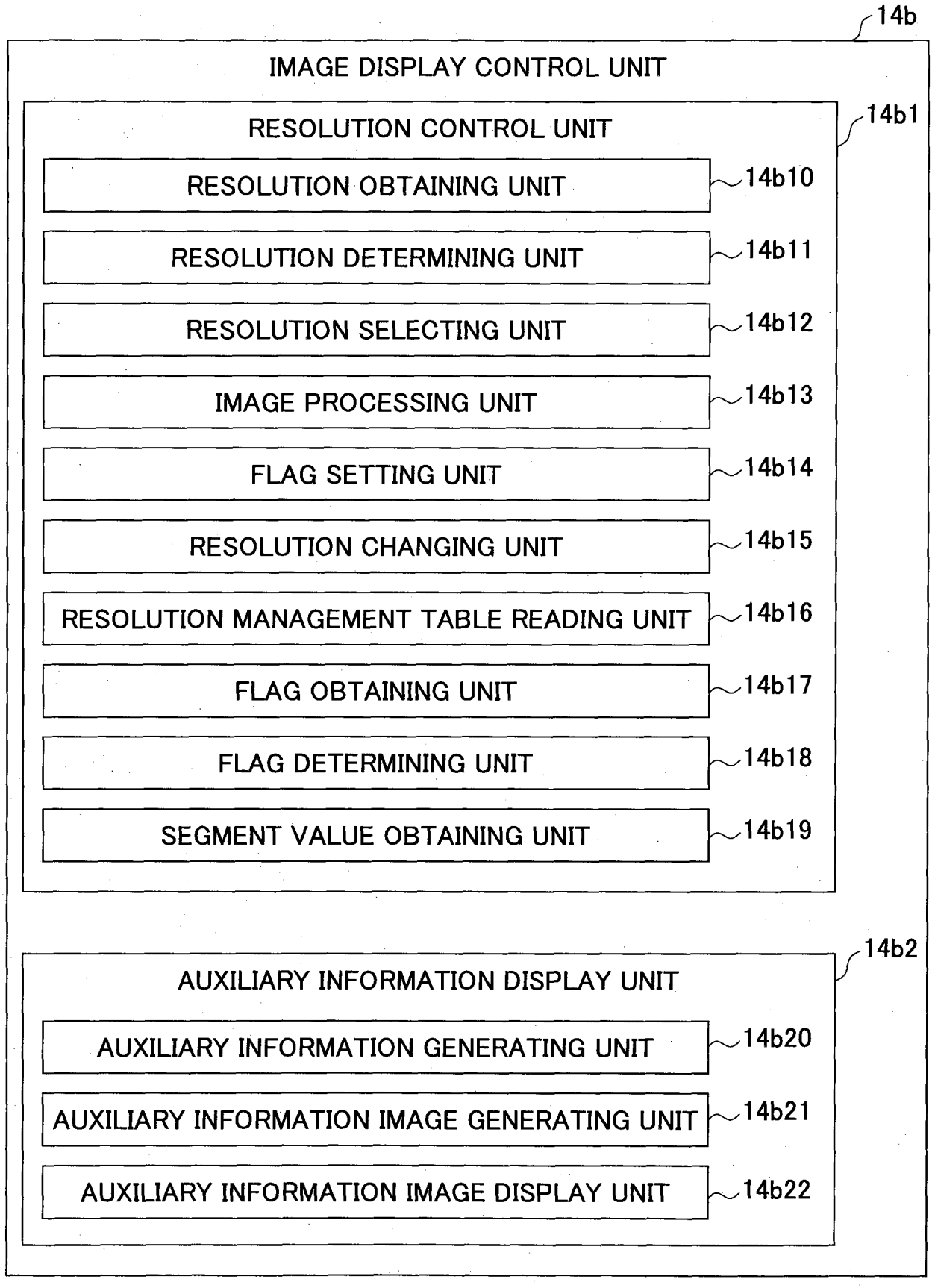

14b
IMAGE DISPLAY CONTROL UNIT
14b1
RESOLUTION CONTROL UNIT
RESOLUTION OBTAINING UNIT
14b10
RESOLUTION DETERMINING UNIT
14b11
RESOLUTION SELECTING UNIT
14b12
IMAGE PROCESSING UNIT
14b13
FLAG SETTING UNIT
14b14
RESOLUTION CHANGING UNIT
14b15
RESOLUTION MANAGEMENT TABLE READING UNIT
14b16
FLAG OBTAINING UNIT
14b17
FLAG DETERMINING UNIT
14b18
SEGMENT VALUE OBTAINING UNIT
14b19
14b2
AUXILIARY INFORMATION DISPLAY UNIT
AUXILIARY INFORMATION GENERATING UNIT
14b20
AUXILIARY INFORMATION IMAGE GENERATING UNIT
14b21
AUXILIARY INFORMATION IMAGE DISPLAY UNIT
14b22

FIG.30

CURRENTLY DISPLAYED RESOLUTION :	width:1280 height:720(16:9 RATIO)
DISPLAYABLE RESOLUTIONS :	width: 640 height:480(4:3 RATIO) width: 800 height:600(4:3 RATIO) width:1024 height:768(4:3 RATIO) width:1152 height:864(4:3 RATIO) width:1280 height:720(16:9 RATIO) width:1280 height:768(5:3 RATIO) width:1280 height:800(8:5 RATIO)
overlap FLAG :	false
SEGMENT POSITION :	—
AUXILIARY INFORMATION DISPLAY POSITION :	—
DISPLAY CONTENTS :	—
:	

FIG.31A

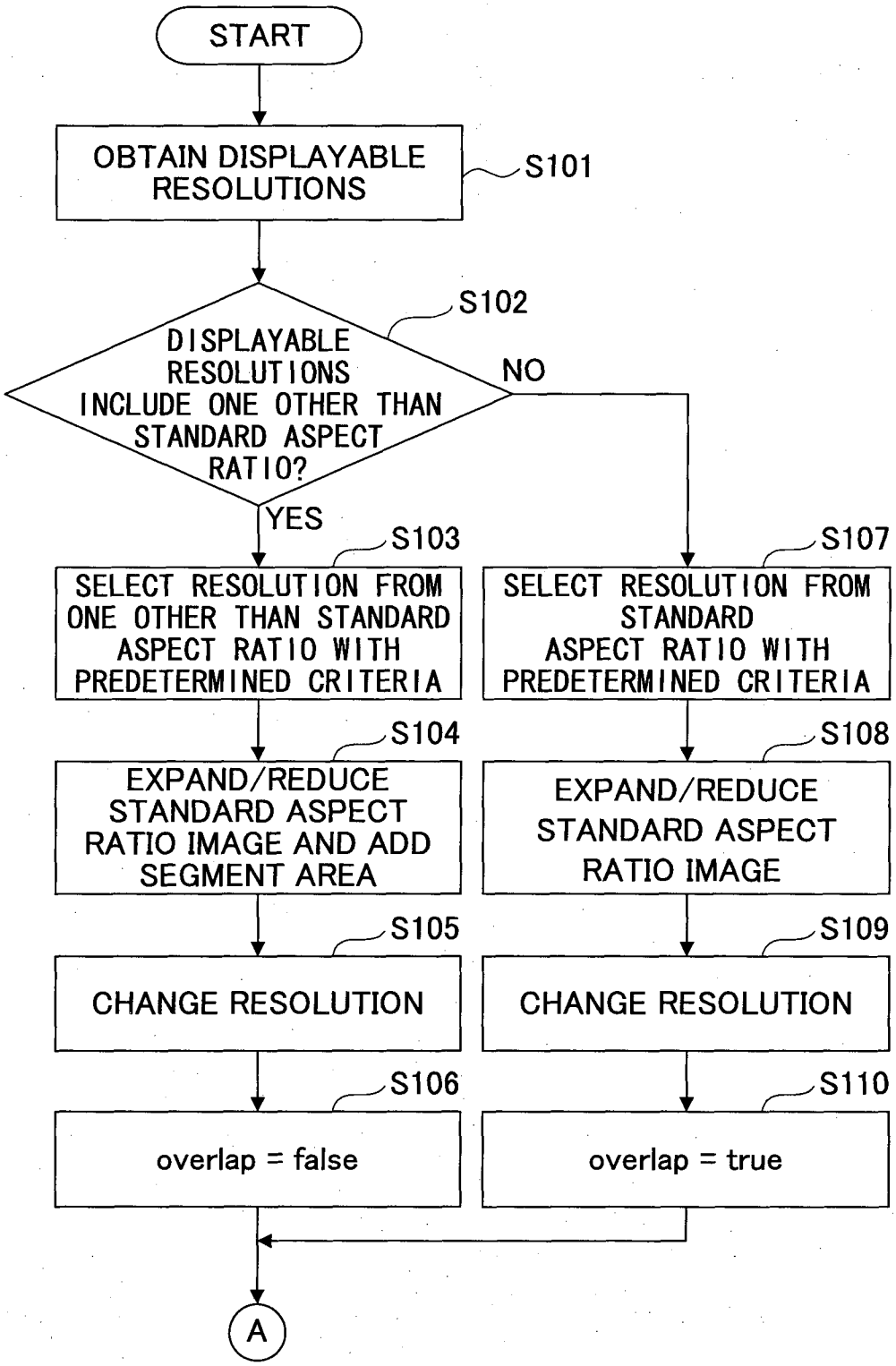

START
OBTAIN DISPLAYABLE RESOLUTIONS
S101
S102
DISPLAYABLE RESOLUTIONS INCLUDE ONE OTHER THAN STANDARD ASPECT RATIO?
NO
YES
S103
SELECT RESOLUTION FROM ONE OTHER THAN STANDARD ASPECT RATIO WITH PREDETERMINED CRITERIA
S104
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE AND ADD SEGMENT AREA
S105
CHANGE RESOLUTION
S106
overlap = false
S107
SELECT RESOLUTION FROM STANDARD ASPECT RATIO WITH PREDETERMINED CRITERIA
S108
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE
S109
CHANGE RESOLUTION
S110
overlap = true
A

FIG.31B

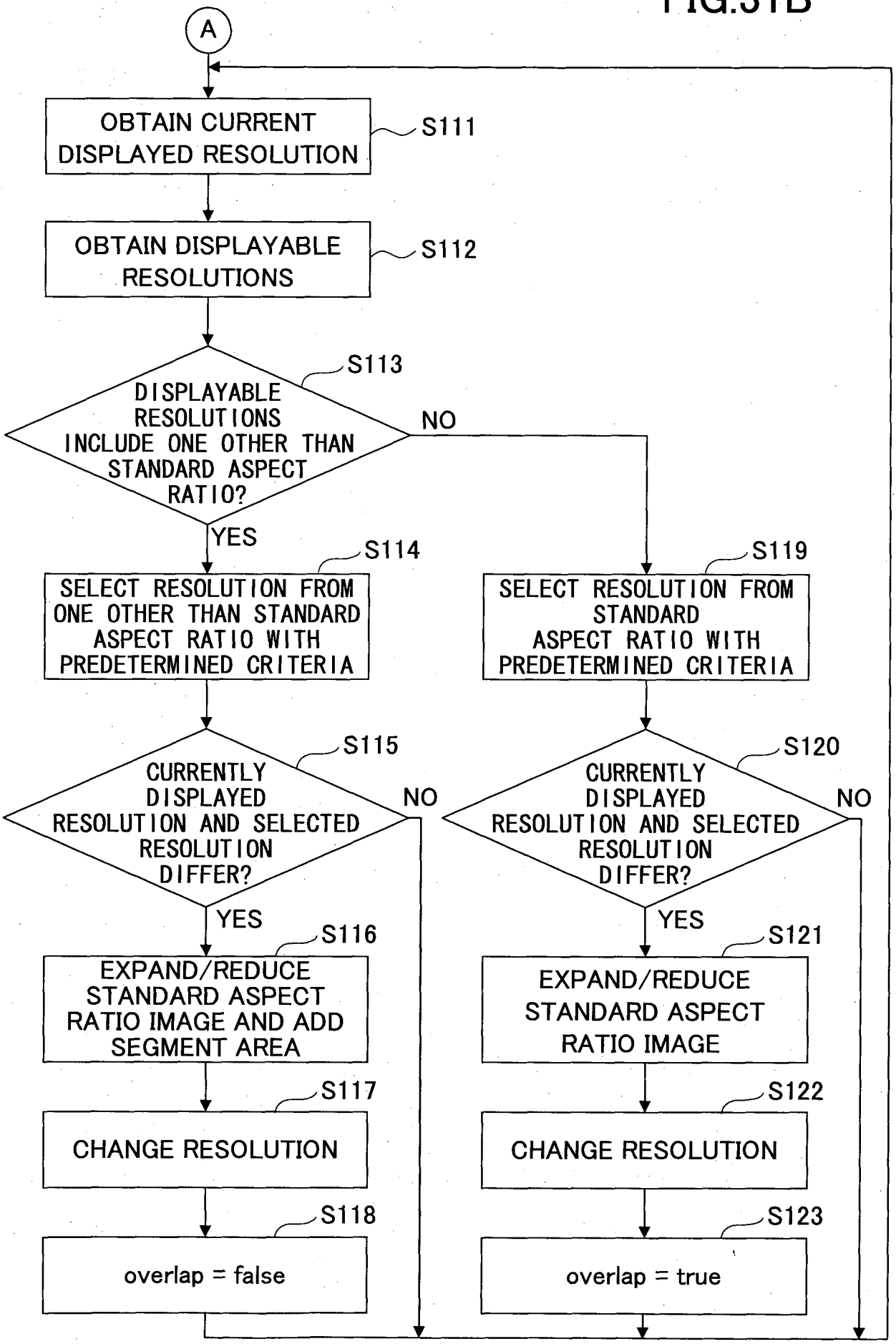

A
OBTAIN CURRENT DISPLAYED RESOLUTION
S111
OBTAIN DISPLAYABLE RESOLUTIONS
S112
S113
DISPLAYABLE RESOLUTIONS INCLUDE ONE OTHER THAN STANDARD ASPECT RATIO?
NO
YES
S114
SELECT RESOLUTION FROM ONE OTHER THAN STANDARD ASPECT RATIO WITH PREDETERMINED CRITERIA
S119
SELECT RESOLUTION FROM STANDARD ASPECT RATIO WITH PREDETERMINED CRITERIA
S115
CURRENTLY DISPLAYED RESOLUTION AND SELECTED RESOLUTION DIFFER?
NO
YES
S120
CURRENTLY DISPLAYED RESOLUTION AND SELECTED RESOLUTION DIFFER?
NO
YES
S116
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE AND ADD SEGMENT AREA
S121
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE
S117
CHANGE RESOLUTION
S122
CHANGE RESOLUTION
S118
overlap = false
S123
overlap = true

FIG.32B

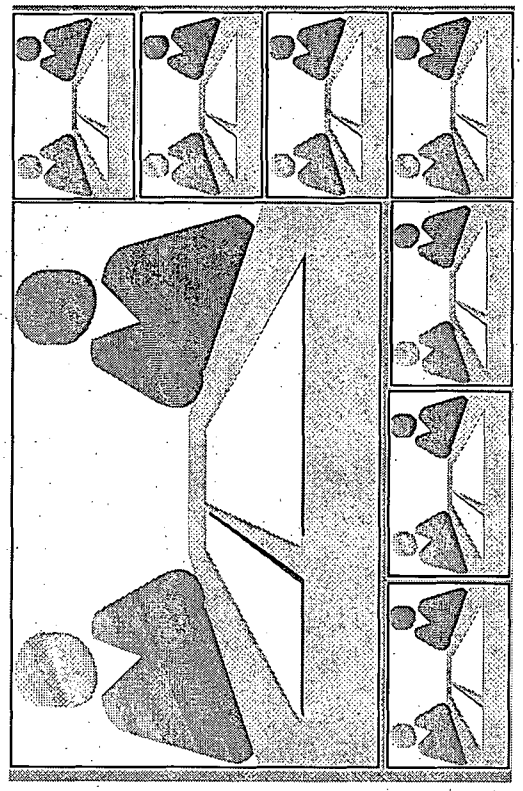


FIG.32A

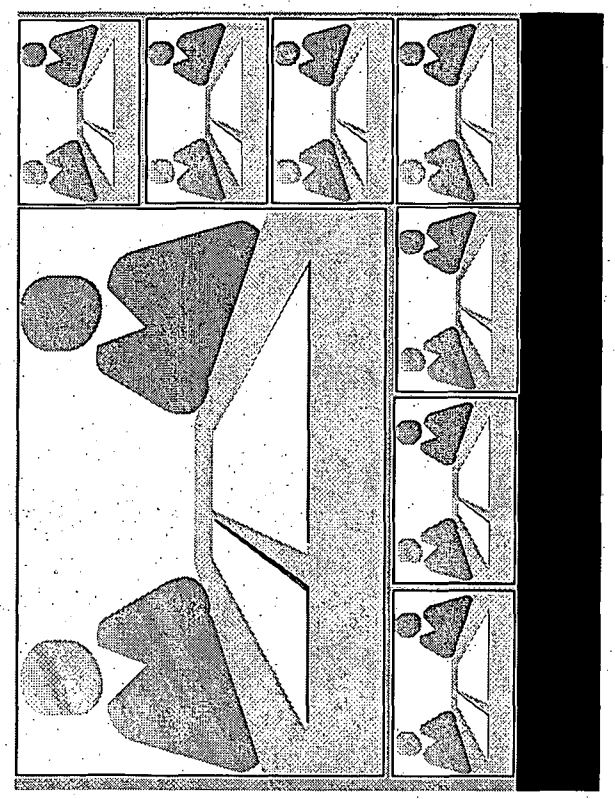


FIG.33

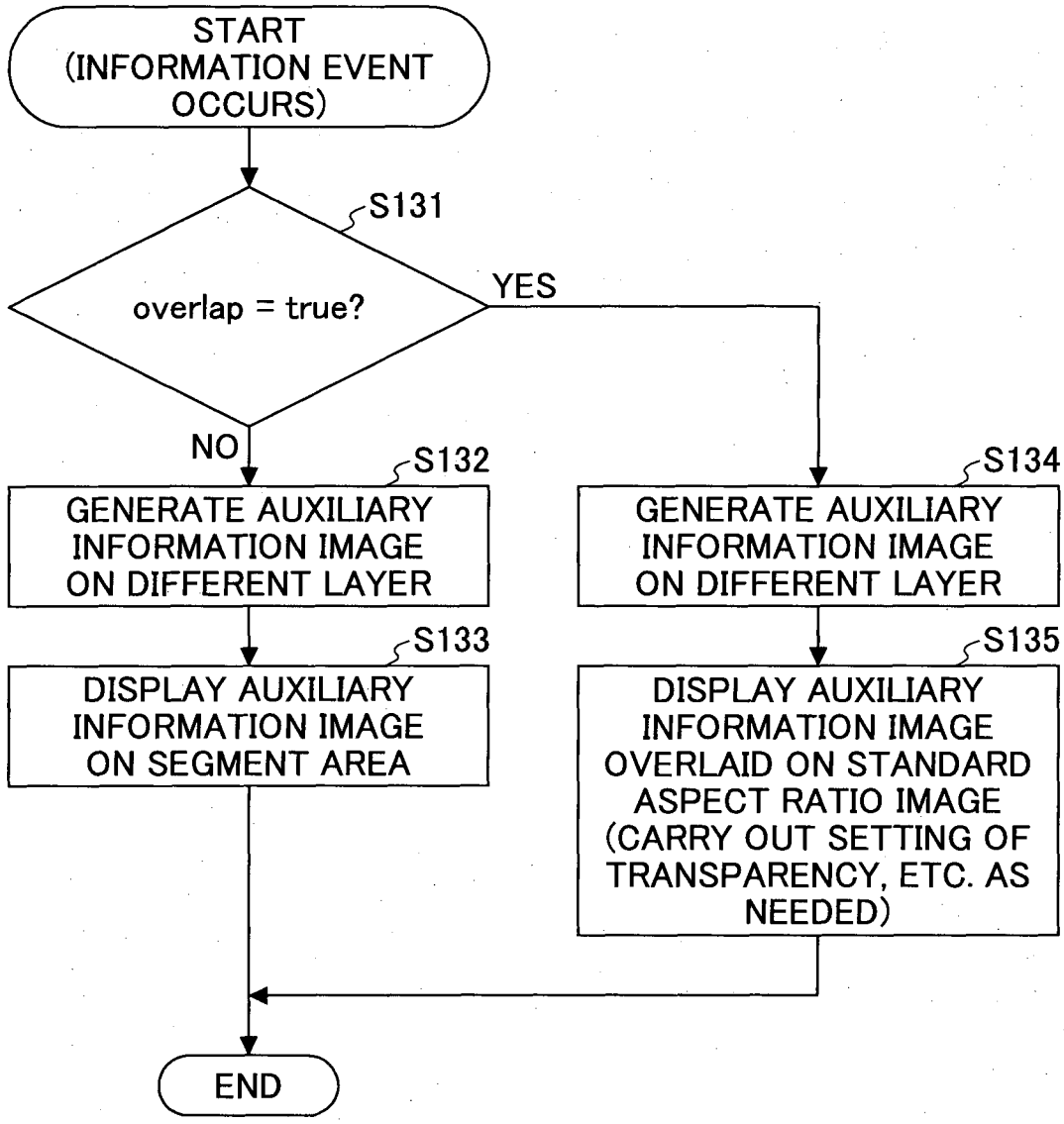

START
(INFORMATION EVENT
OCCURS)
S131
overlap = true?
YES
NO
S132
GENERATE AUXILIARY
INFORMATION IMAGE
ON DIFFERENT LAYER
S133
DISPLAY AUXILIARY
INFORMATION IMAGE
ON SEGMENT AREA
S134
GENERATE AUXILIARY
INFORMATION IMAGE
ON DIFFERENT LAYER
S135
DISPLAY AUXILIARY
INFORMATION IMAGE
OVERLAID ON STANDARD
ASPECT RATIO IMAGE
(CARRY OUT SETTING OF
TRANSPARENCY, ETC. AS
NEEDED)
END

FIG.34A

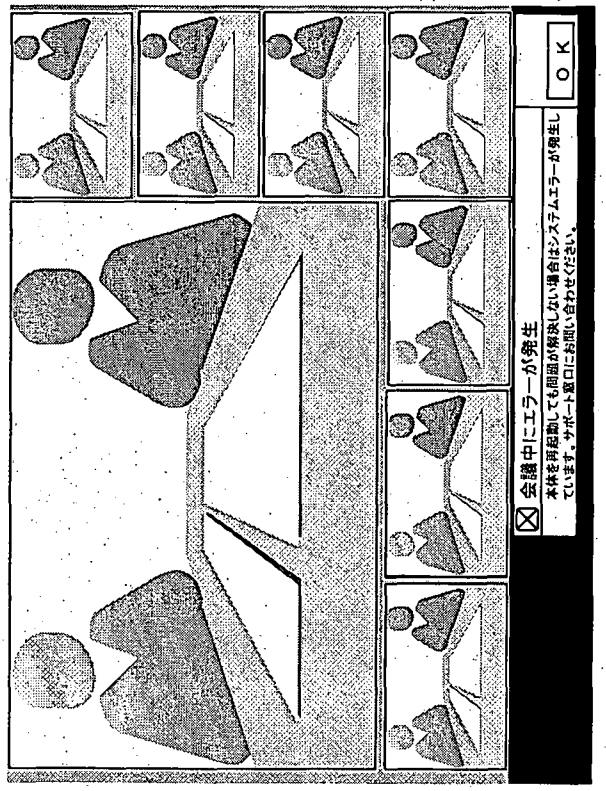


FIG.34B

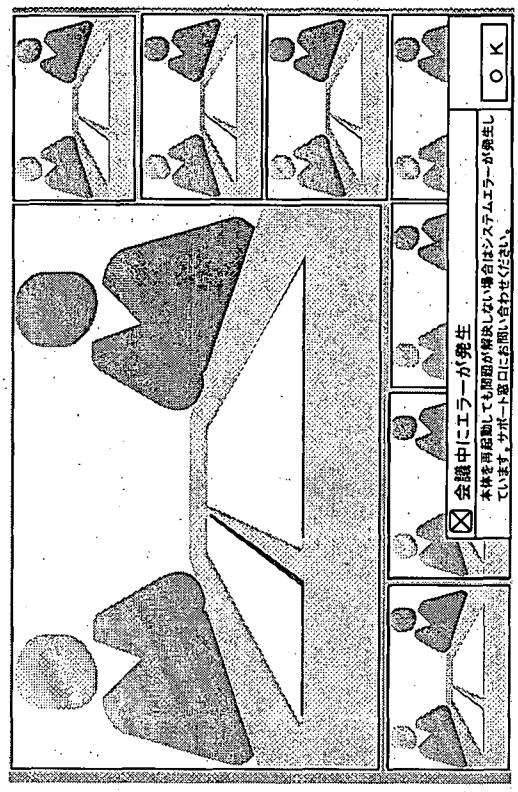


FIG.35A

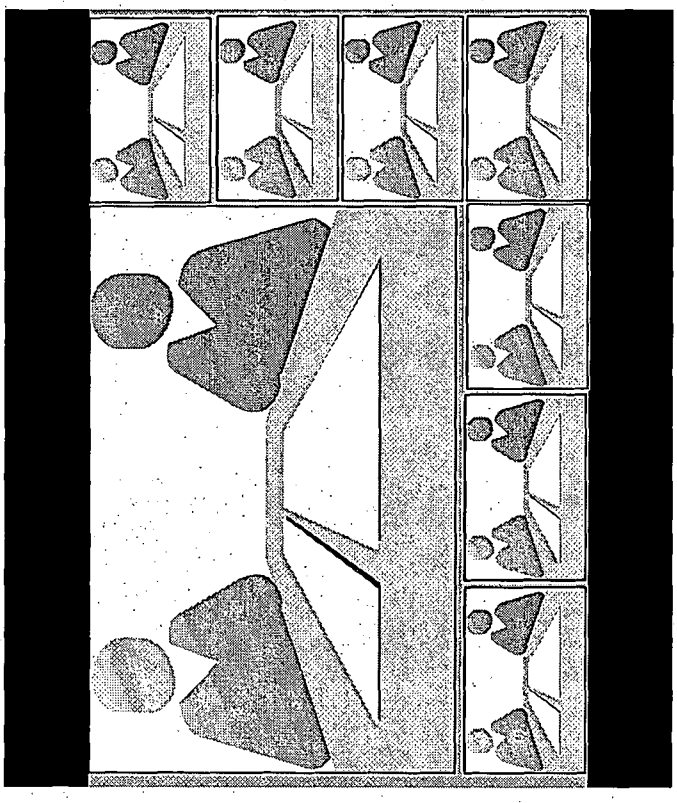


FIG.35B

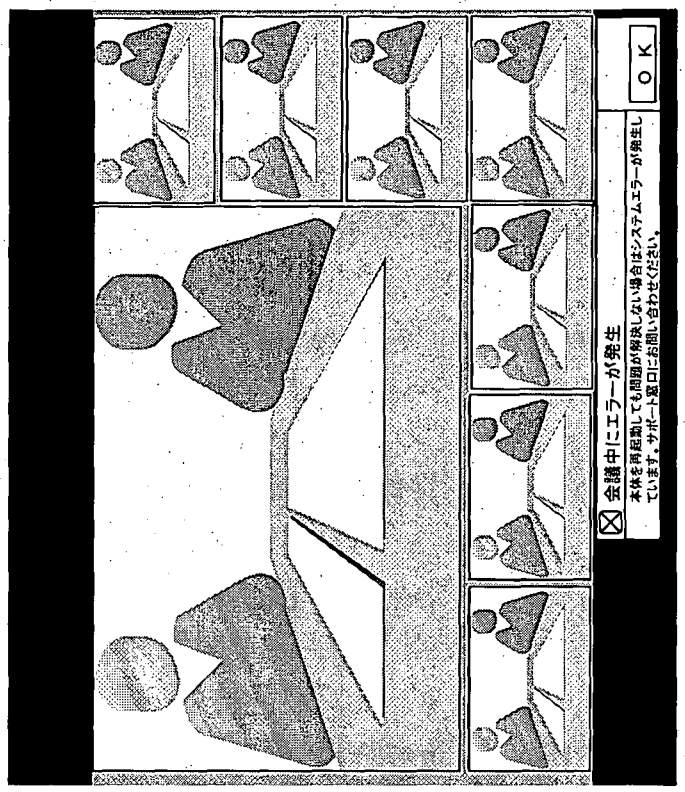


FIG.36

ITEM NAME	RESOLUTION	overlap	SEGMENT VALUE
resolution1	width:1280, height:800	false	width:1280, height:80, position: lower
resolution2	width:1280, height:720	true	NA
resolution3	width:1024, height:768	false	width:1024, height:96, position: both

FIG.37

ITEM NAME	RESOLUTION	overlap	SEGMENT VALUE
resolution1	width:1280, height:800	false	width:1280, height:80, position: lower
resolution2	width:1024, height:768	false	width:1024, height:96, position: both
resolution3	width:1280, height:720	true	NA

FIG.38A

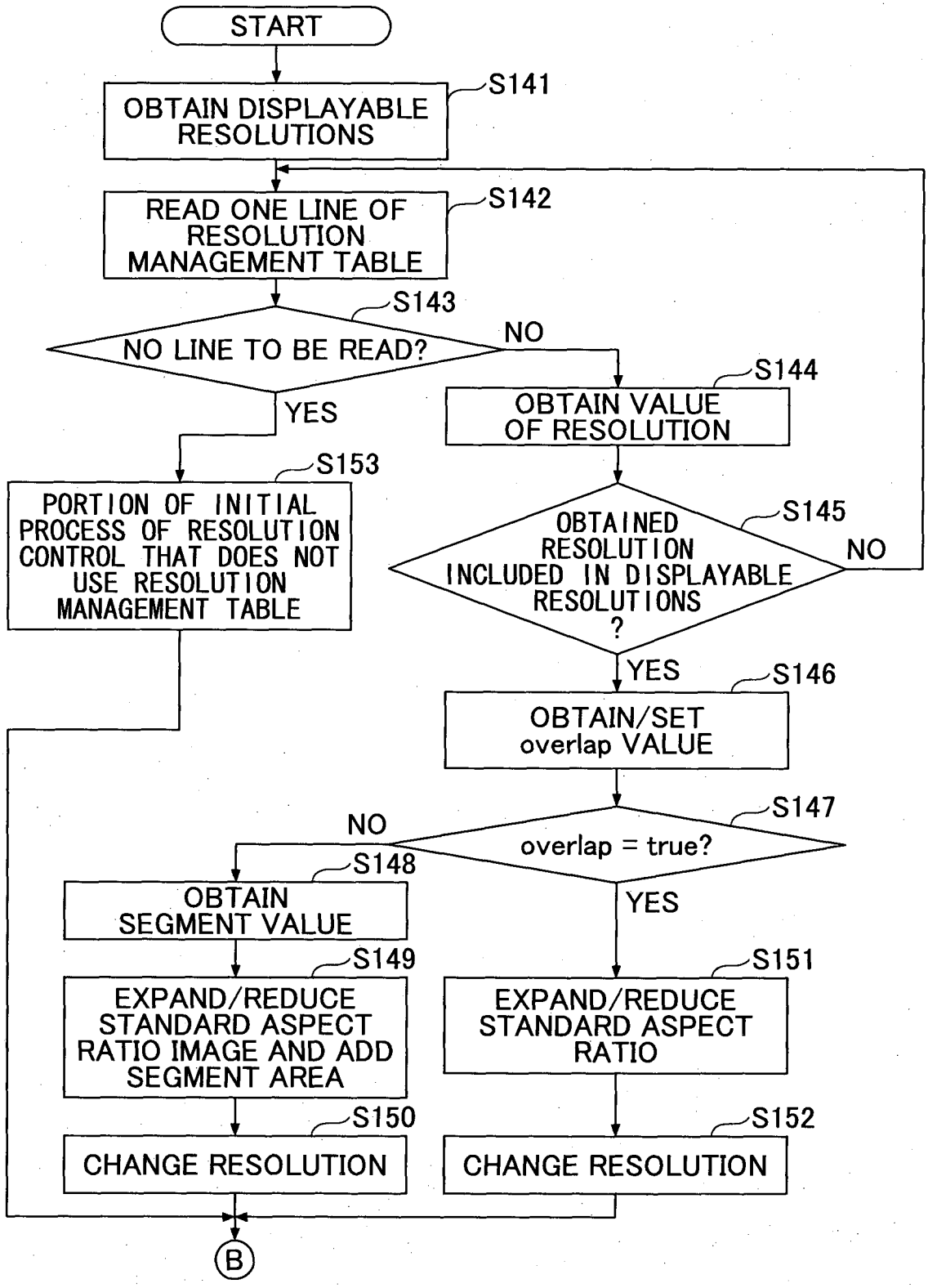

START
OBTAIN DISPLAYABLE RESOLUTIONS
S141
READ ONE LINE OF RESOLUTION MANAGEMENT TABLE
S142
S143
NO LINE TO BE READ?
NO
YES
S144
OBTAIN VALUE OF RESOLUTION
S153
PORTION OF INITIAL PROCESS OF RESOLUTION CONTROL THAT DOES NOT USE RESOLUTION MANAGEMENT TABLE
S145
OBTAINED RESOLUTION INCLUDED IN DISPLAYABLE RESOLUTIONS ?
NO
YES
S146
OBTAIN/SET overlap VALUE
S147
overlap = true?
NO
YES
S148
OBTAIN SEGMENT VALUE
S149
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE AND ADD SEGMENT AREA
S150
CHANGE RESOLUTION
S151
EXPAND/REDUCE STANDARD ASPECT RATIO
S152
CHANGE RESOLUTION
B

FIG.38B

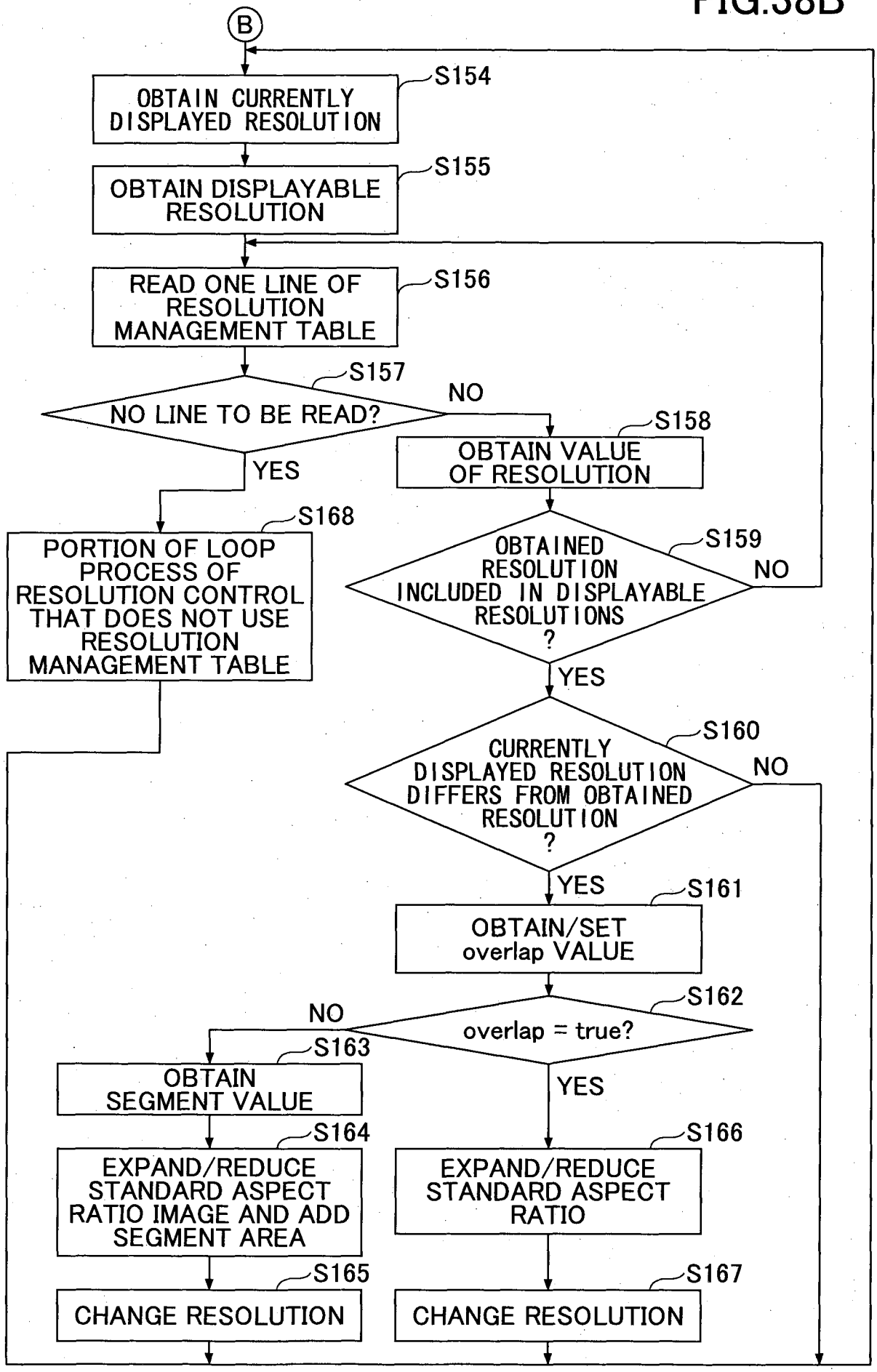

B
OBTAIN CURRENTLY DISPLAYED RESOLUTION
S154
OBTAIN DISPLAYABLE RESOLUTION
S155
READ ONE LINE OF RESOLUTION MANAGEMENT TABLE
S156
NO LINE TO BE READ?
S157
NO
YES
OBTAIN VALUE OF RESOLUTION
S158
PORTION OF LOOP PROCESS OF RESOLUTION CONTROL THAT DOES NOT USE RESOLUTION MANAGEMENT TABLE
S168
OBTAINED RESOLUTION INCLUDED IN DISPLAYABLE RESOLUTIONS ?
S159
NO
YES
CURRENTLY DISPLAYED RESOLUTION DIFFERS FROM OBTAINED RESOLUTION ?
S160
NO
YES
OBTAIN/SET overlap VALUE
S161
overlap = true?
S162
NO
YES
OBTAIN SEGMENT VALUE
S163
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE AND ADD SEGMENT AREA
S164
EXPAND/REDUCE STANDARD ASPECT RATIO
S166
CHANGE RESOLUTION
S165
CHANGE RESOLUTION
S167

FIG.39

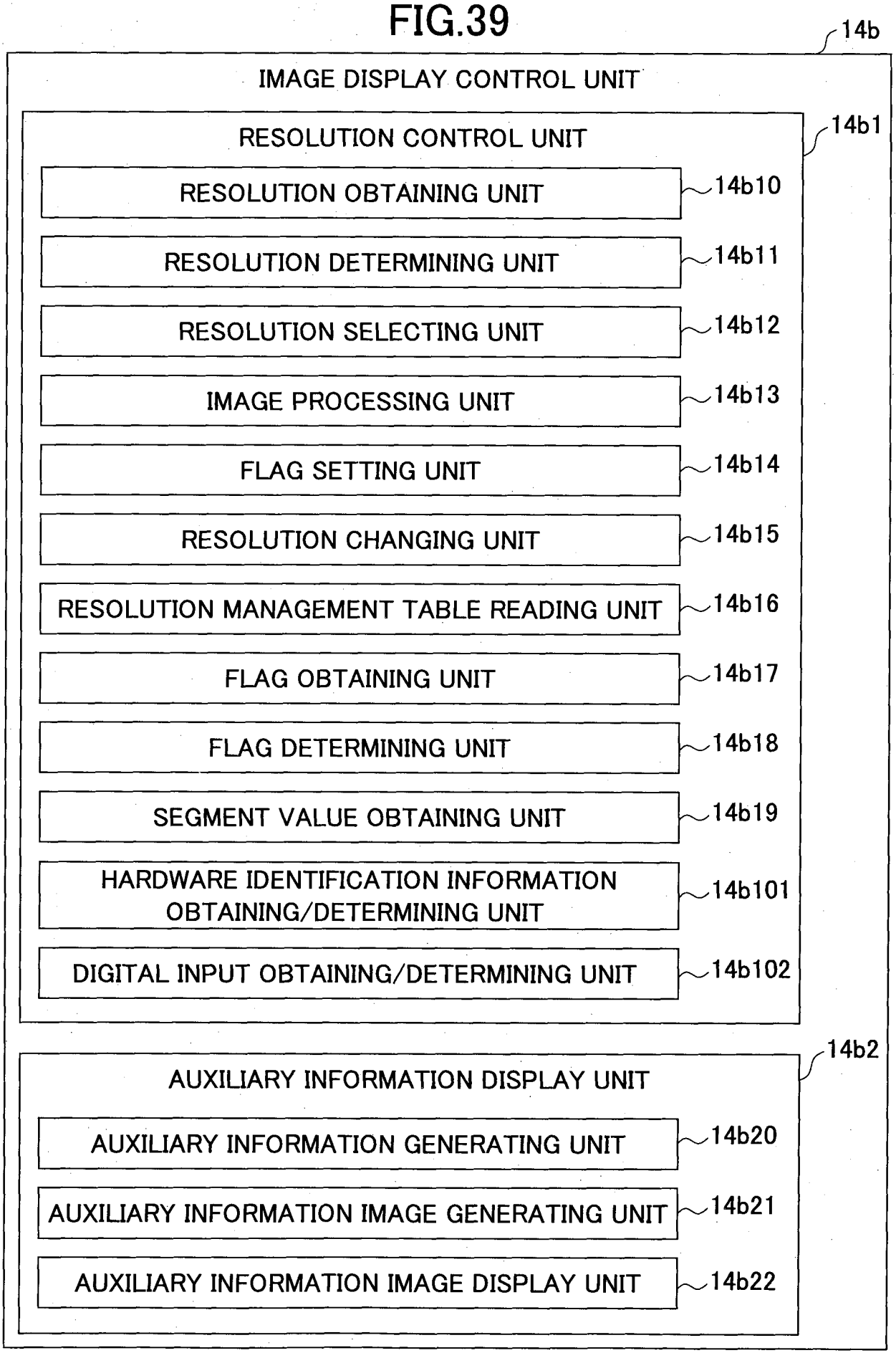

14b
IMAGE DISPLAY CONTROL UNIT
14b1
RESOLUTION CONTROL UNIT
RESOLUTION OBTAINING UNIT
14b10
RESOLUTION DETERMINING UNIT
14b11
RESOLUTION SELECTING UNIT
14b12
IMAGE PROCESSING UNIT
14b13
FLAG SETTING UNIT
14b14
RESOLUTION CHANGING UNIT
14b15
RESOLUTION MANAGEMENT TABLE READING UNIT
14b16
FLAG OBTAINING UNIT
14b17
FLAG DETERMINING UNIT
14b18
SEGMENT VALUE OBTAINING UNIT
14b19
HARDWARE IDENTIFICATION INFORMATION OBTAINING/DETERMINING UNIT
14b101
DIGITAL INPUT OBTAINING/DETERMINING UNIT
14b102
14b2
AUXILIARY INFORMATION DISPLAY UNIT
AUXILIARY INFORMATION GENERATING UNIT
14b20
AUXILIARY INFORMATION IMAGE GENERATING UNIT
14b21
AUXILIARY INFORMATION IMAGE DISPLAY UNIT
14b22

FIG.40

CURRENTLY DISPLAYED RESOLUTION :	width:1280 height:720(16:9 RATIO)
DISPLAYABLE RESOLUTIONS :	width: 640 height:480(4:3 RATIO) width: 800 height:600(4:3 RATIO) width:1024 height:768(4:3 RATIO) width:1152 height:864(4:3 RATIO) width:1280 height:720(16:9 RATIO) width:1280 height:768(5:3 RATIO) width:1280 height:800(8:5 RATIO)
overlap FLAG :	false
SEGMENT POSITION :	—
AUXILIARY INFORMATION DISPLAY POSITION :	—
DISPLAY CONTENTS :	—
DIGITAL INPUT (digital) :	true
RECOMMENDED RESOLUTION :	width:1280 height:720(16:9 RATIO)
HARDWARE IDENTIFICATION INFORMATION :	TV
:	

FIG.41A

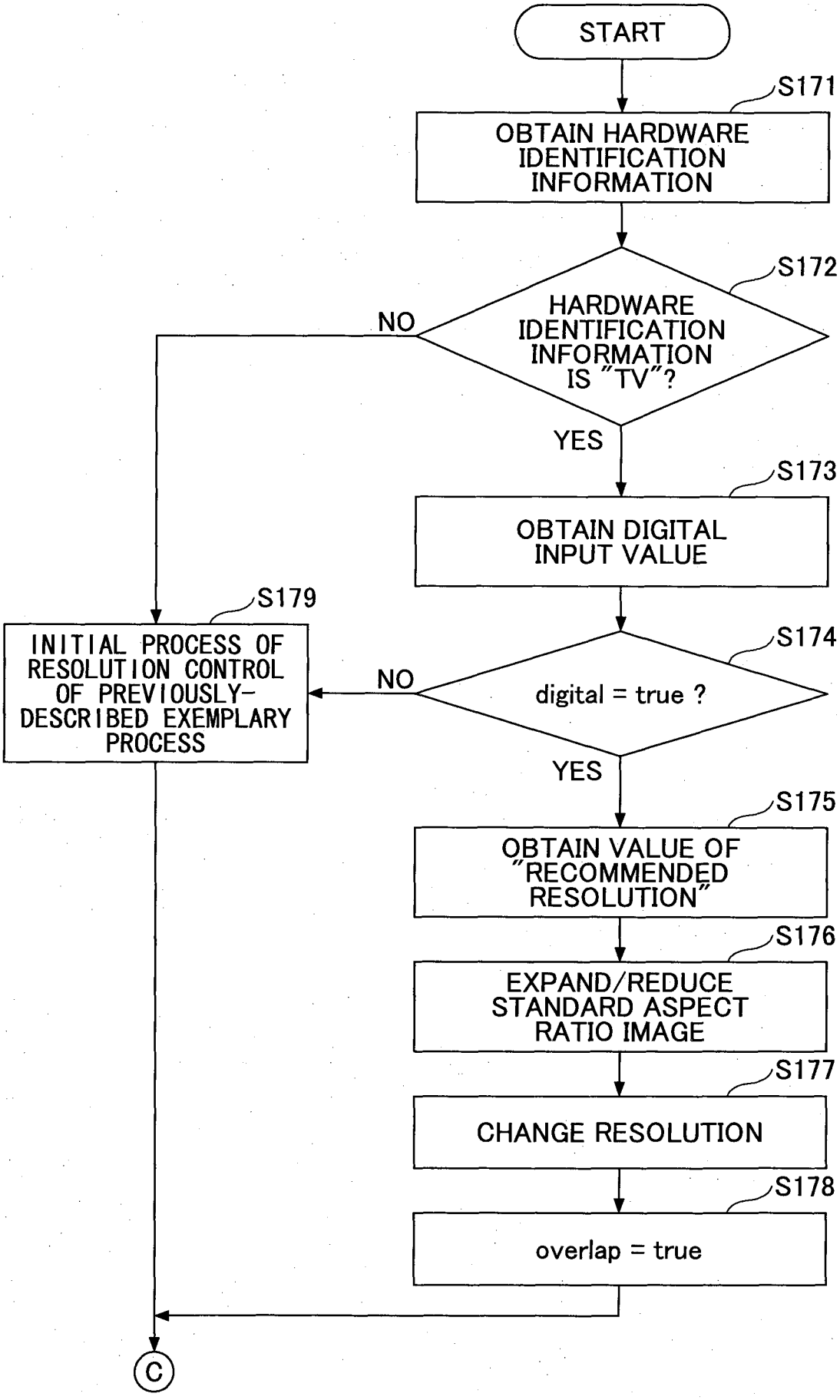
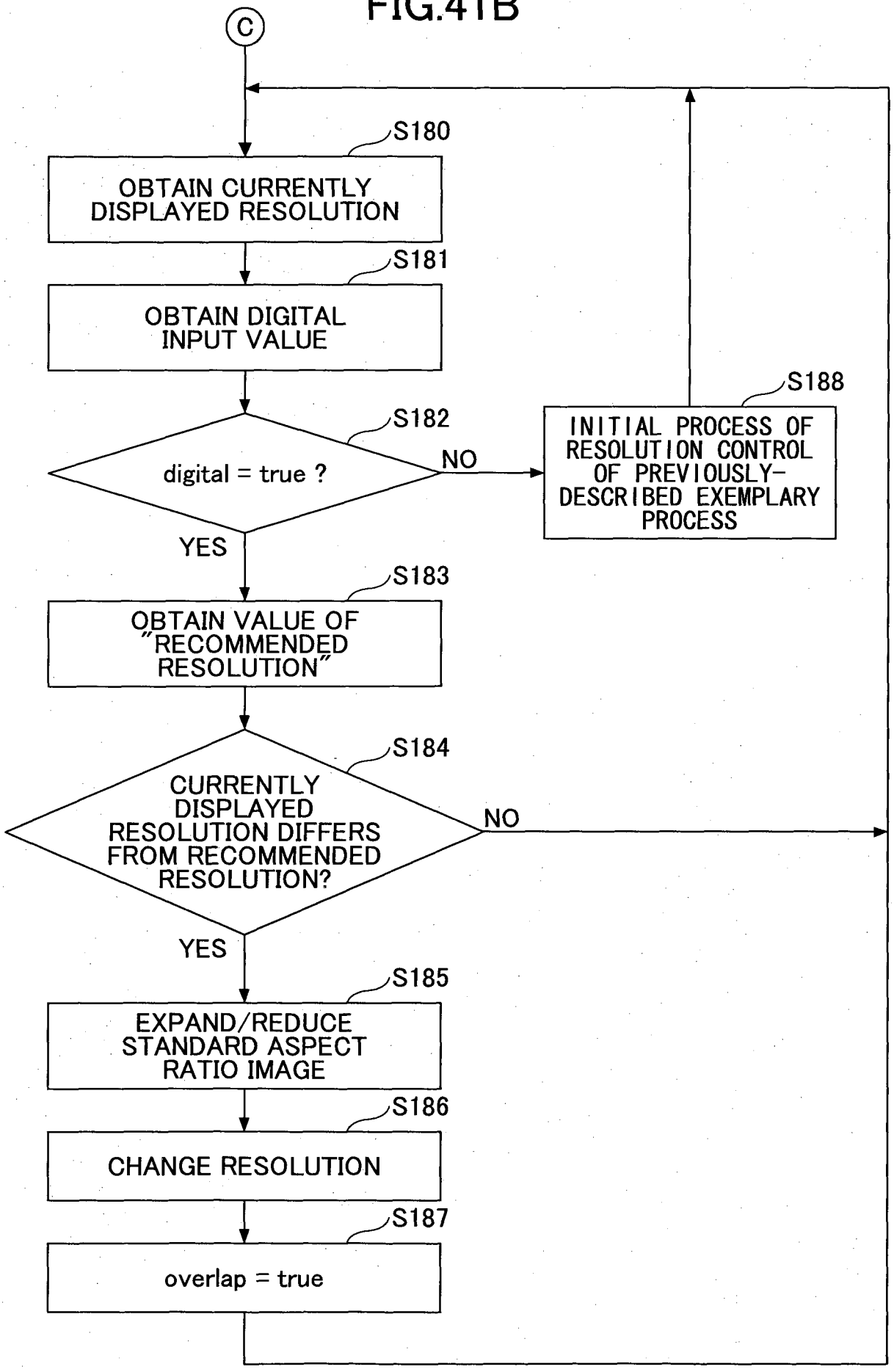

START
S171
OBTAIN HARDWARE IDENTIFICATION INFORMATION
S172
HARDWARE IDENTIFICATION INFORMATION IS "TV"?
NO
YES
S173
OBTAIN DIGITAL INPUT VALUE
S174
digital = true ?
NO
YES
S179
INITIAL PROCESS OF RESOLUTION CONTROL OF PREVIOUSLY-DESCRIBED EXEMPLARY PROCESS
S175
OBTAIN VALUE OF "RECOMMENDED RESOLUTION"
S176
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE
S177
CHANGE RESOLUTION
S178
overlap = true
C

FIG.41B


C
S180
OBTAIN CURRENTLY DISPLAYED RESOLUTION
S181
OBTAIN DIGITAL INPUT VALUE
S182
digital = true ?
NO
S188
INITIAL PROCESS OF RESOLUTION CONTROL OF PREVIOUSLY-DESCRIBED EXEMPLARY PROCESS
YES
S183
OBTAIN VALUE OF "RECOMMENDED RESOLUTION"
S184
CURRENTLY DISPLAYED RESOLUTION DIFFERS FROM RECOMMENDED RESOLUTION?
NO
YES
S185
EXPAND/REDUCE STANDARD ASPECT RATIO IMAGE
S186
CHANGE RESOLUTION
S187
overlap = true