FIG. 1

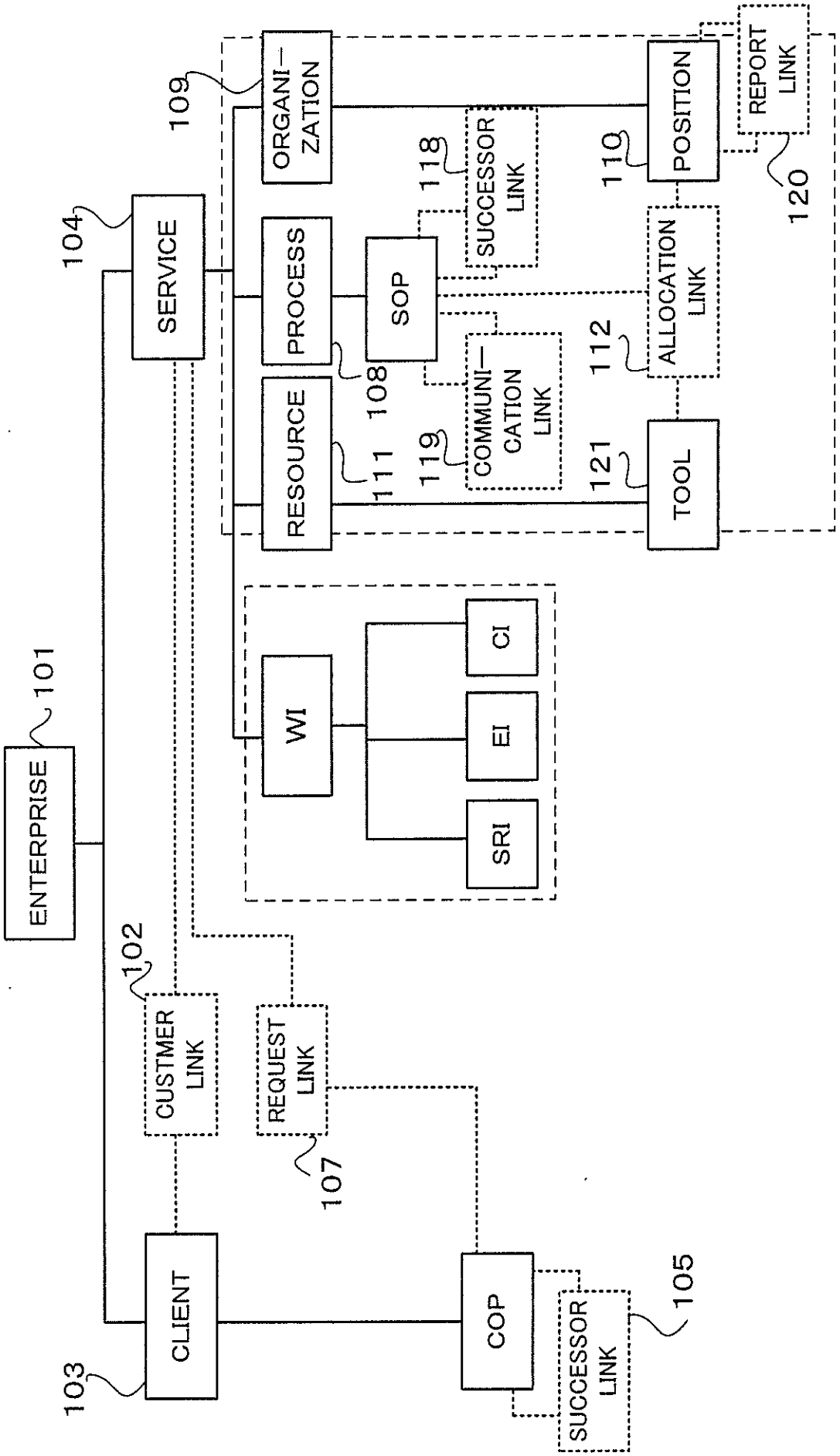

ENTERPRISE
101
SERVICE
104
ORGANI-ZATION
109
PROCESS
SOP
RESOURCE
108
111
WI
CI
EI
SRI
SUCCESSOR LINK
118
COMMUNI-CATION LINK
119
POSITION
110
ALLOCATION LINK
112
REPORT LINK
120
TOOL
121
CUSTMER LINK
102
REQUEST LINK
107
CLIENT
103
COP
SUCCESSOR LINK
105

FIG. 2

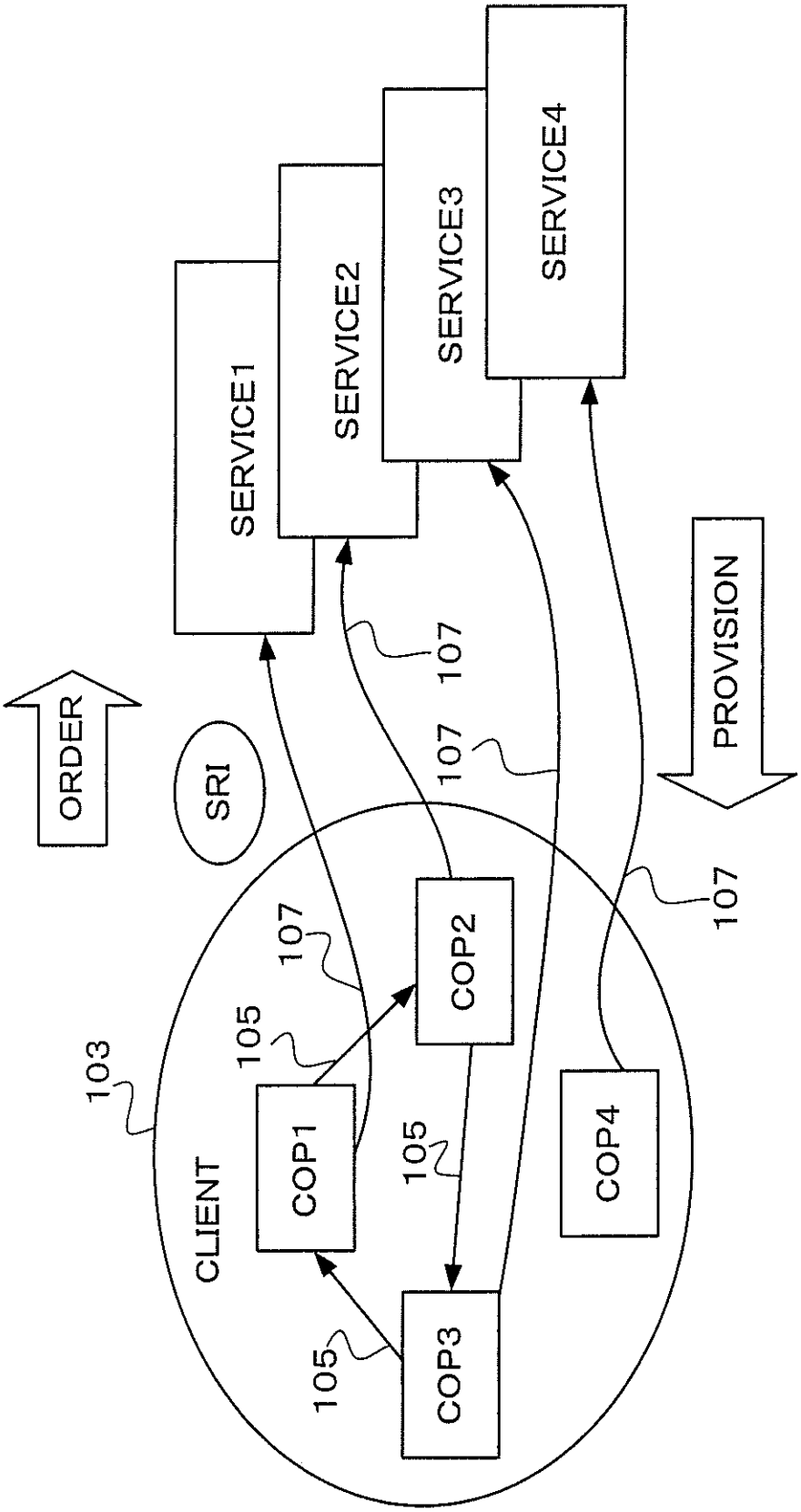

SERVICE1
SERVICE2
SERVICE3
SERVICE4
ORDER
SRI
PROVISION
CLIENT
COP1
COP2
COP3
COP4
103
105
105
105
107
107
107
107

FIG. 3

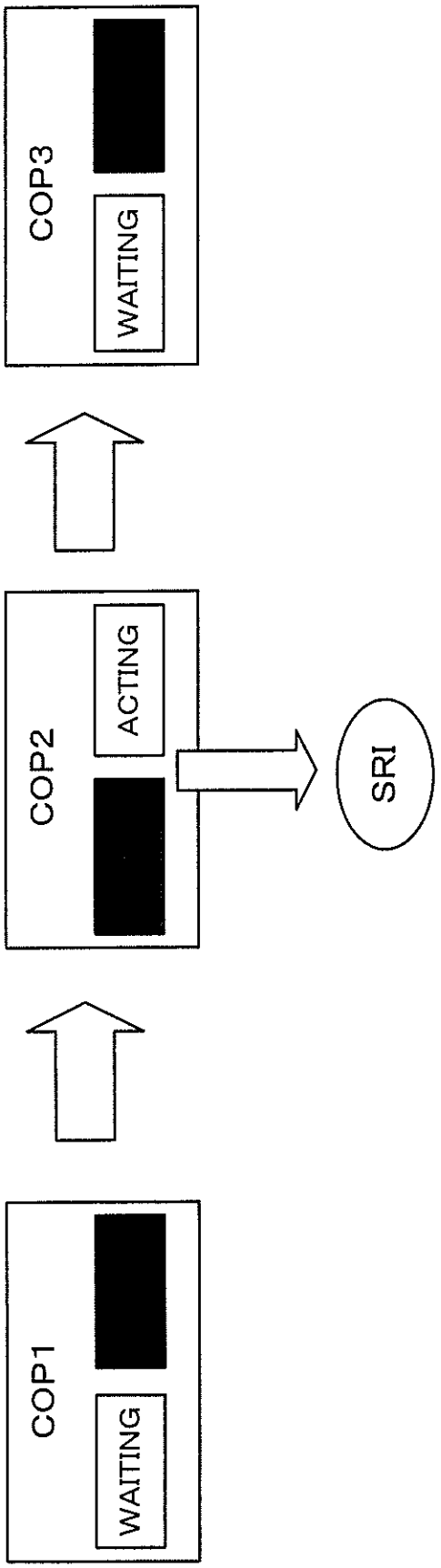


FIG. 4A

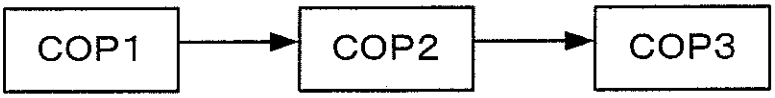


FIG. 4B

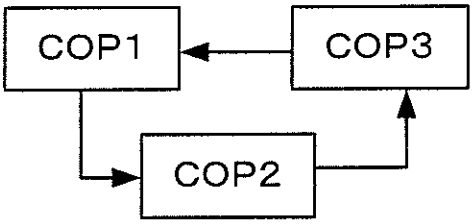


FIG. 4C

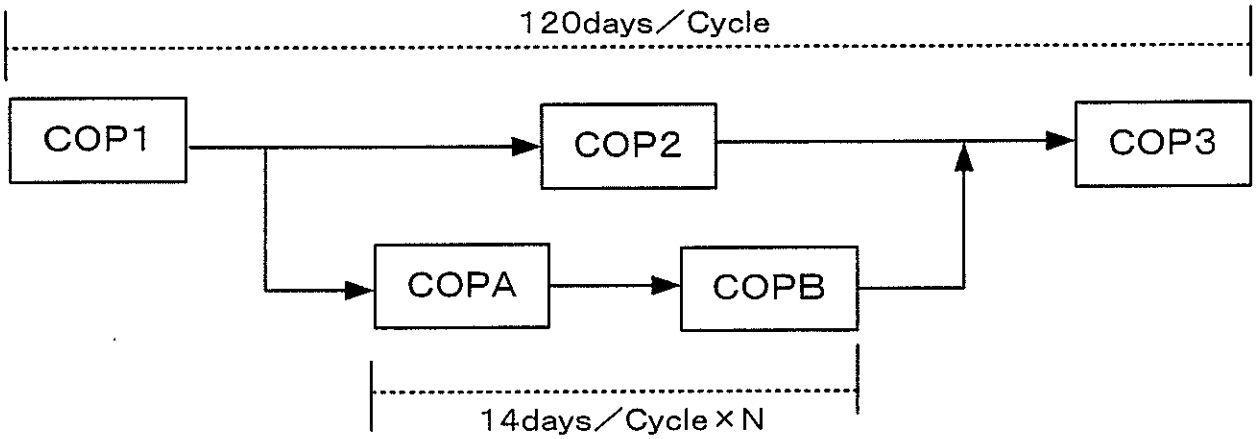


FIG. 5

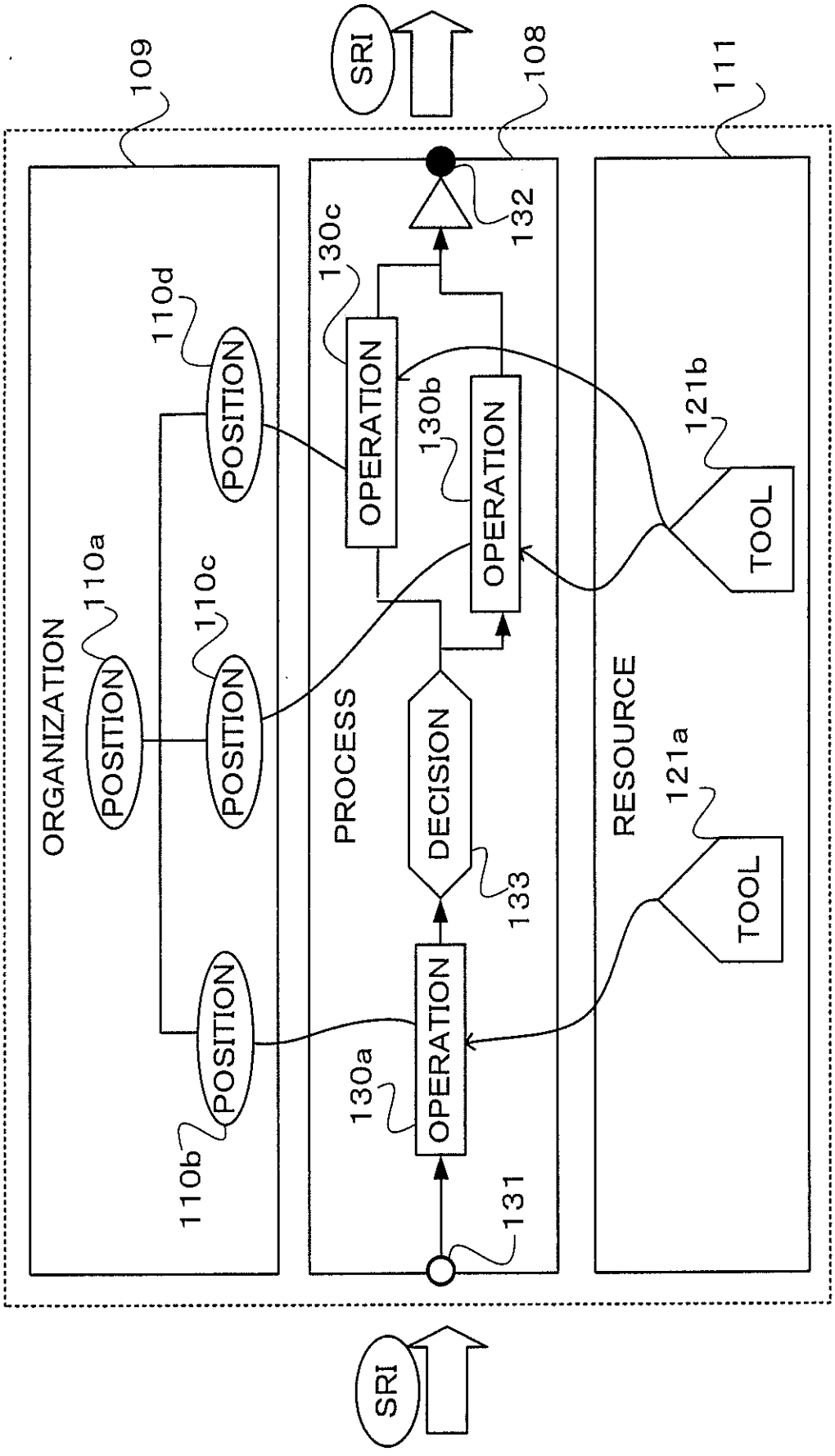

SRI
109
108
111
132
ORGANIZATION
PROCESS
RESOURCE
110a
110b
110c
110d
POSITION
POSITION
POSITION
POSITION
130c
OPERATION
130b
OPERATION
121b
TOOL
DECISION
133
121a
TOOL
130a
OPERATION
131
SRI

FIG. 6A

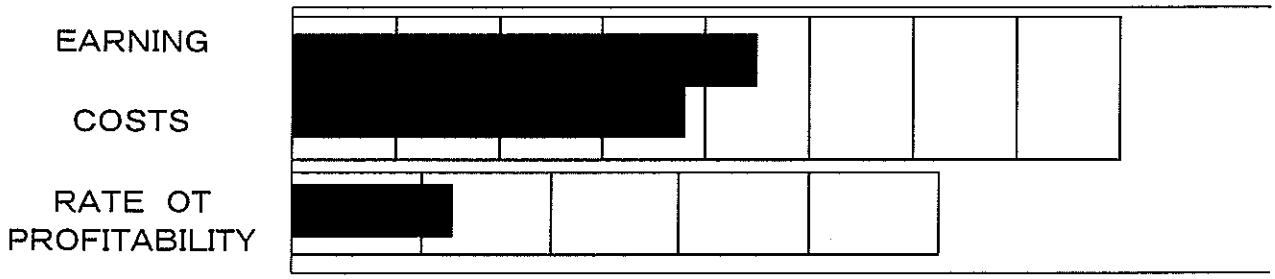


FIG. 6B

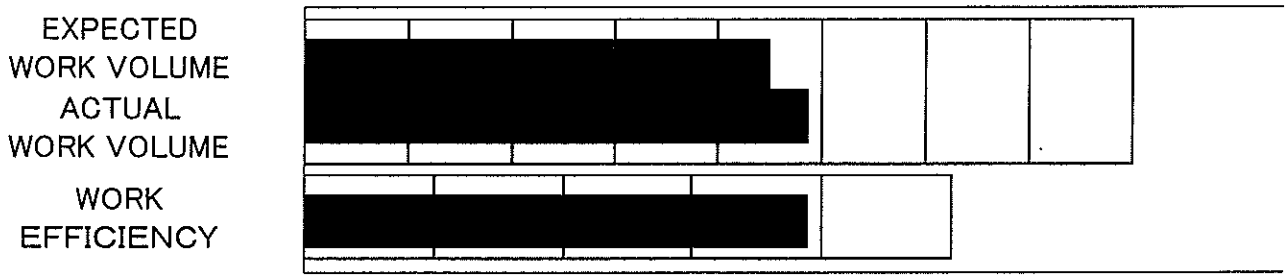


FIG. 7A

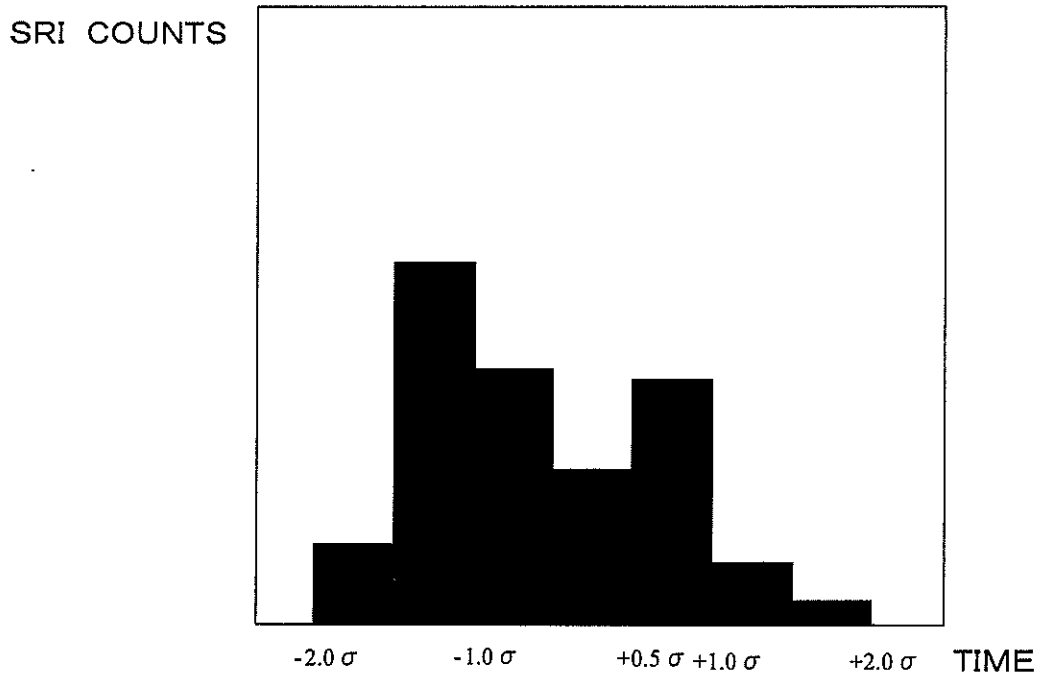


FIG. 7B

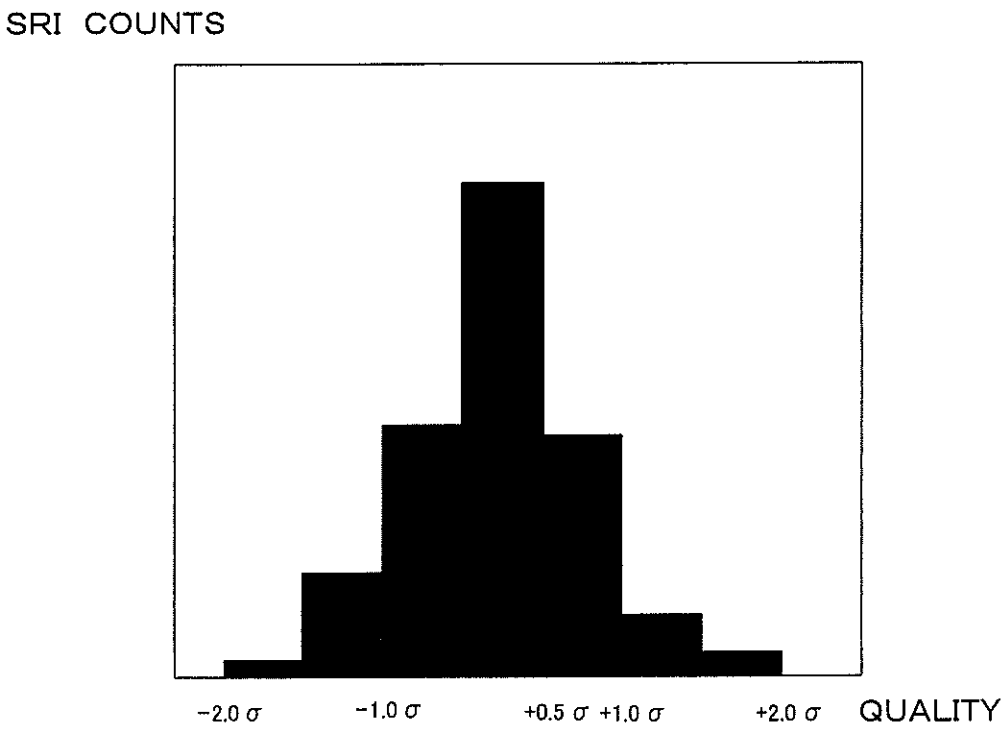
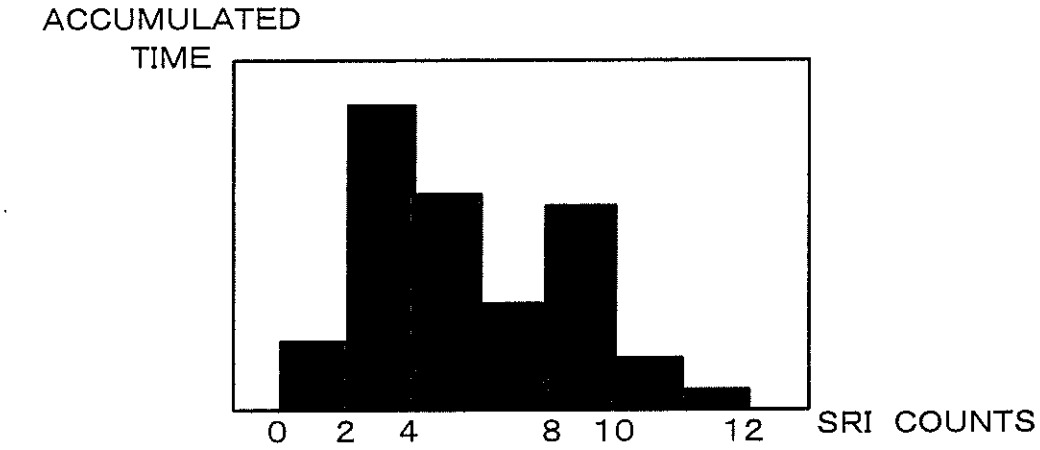


FIG. 8A


ACCUMULATED
TIME
0
2
4
8
10
12
SRI COUNTS

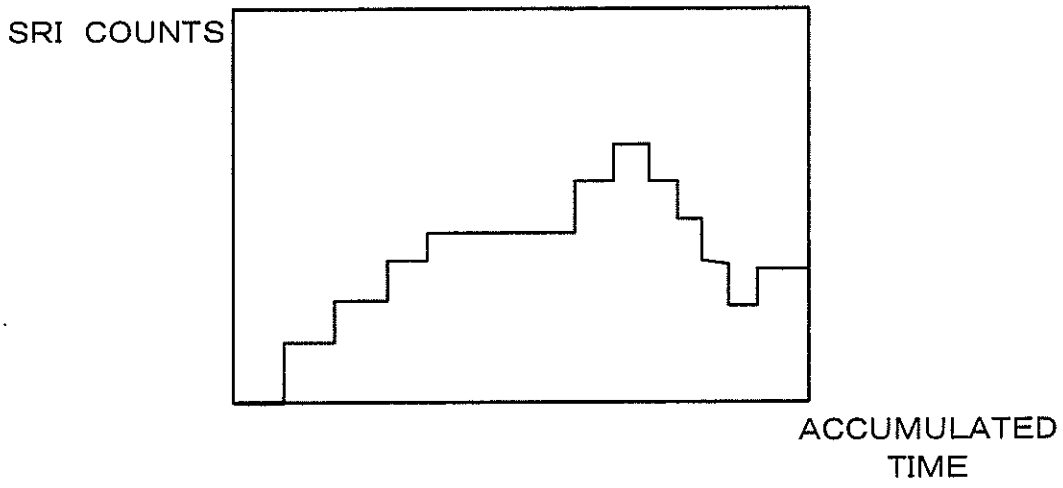
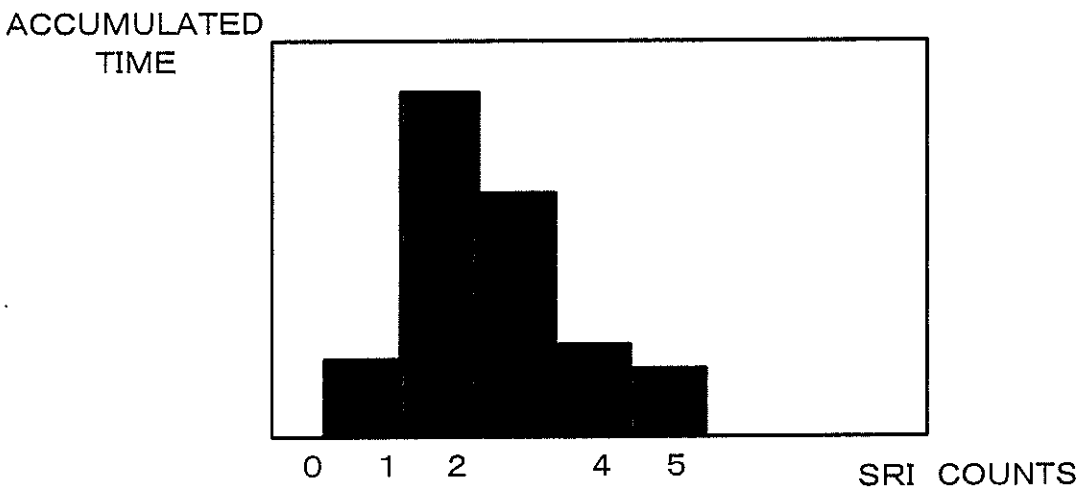

SRI COUNTS
ACCUMULATED
TIME

FIG. 8B


ACCUMULATED
TIME
0
1
2
4
5
SRI COUNTS

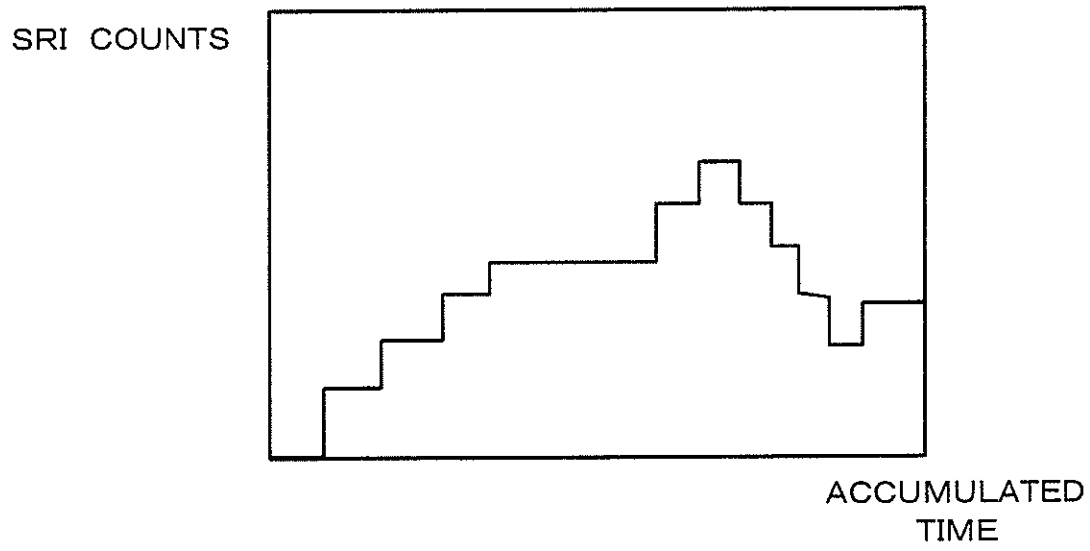
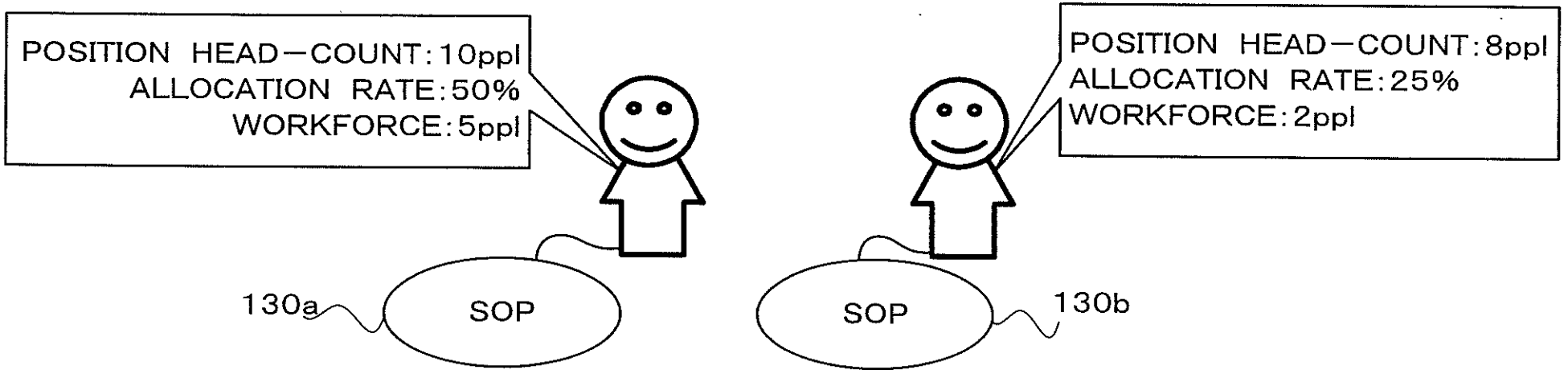

SRI COUNTS
ACCUMULATED
TIME

FIG. 9



	SOP130a				SOP130b					
	TIME	WORKFORCE	WORK VOLUME	%	TIME	WORKFORCE	WORK VOLUME	%	TOTAL WORK VOLUME	%
DIRECT WORK	100	5	500	60.6	80	2	160	50.0		57.6
COMMUNICATION	20	5	100	12.1	20	2	40	12.5	140	12.2
REWORK	25	5	125	15.2	30	2	60	18.8	185	16.2
DECISION WAIT	15	5	75	9.1	20	2	40	12.5	115	10.1
IDLE	5	5	25	3.0	10	2	20	6.2	45	3.9
TOTAL ACTUAL WORK VOLUME			825	100.0			320	100.0	1145	100.0

FIG. 10

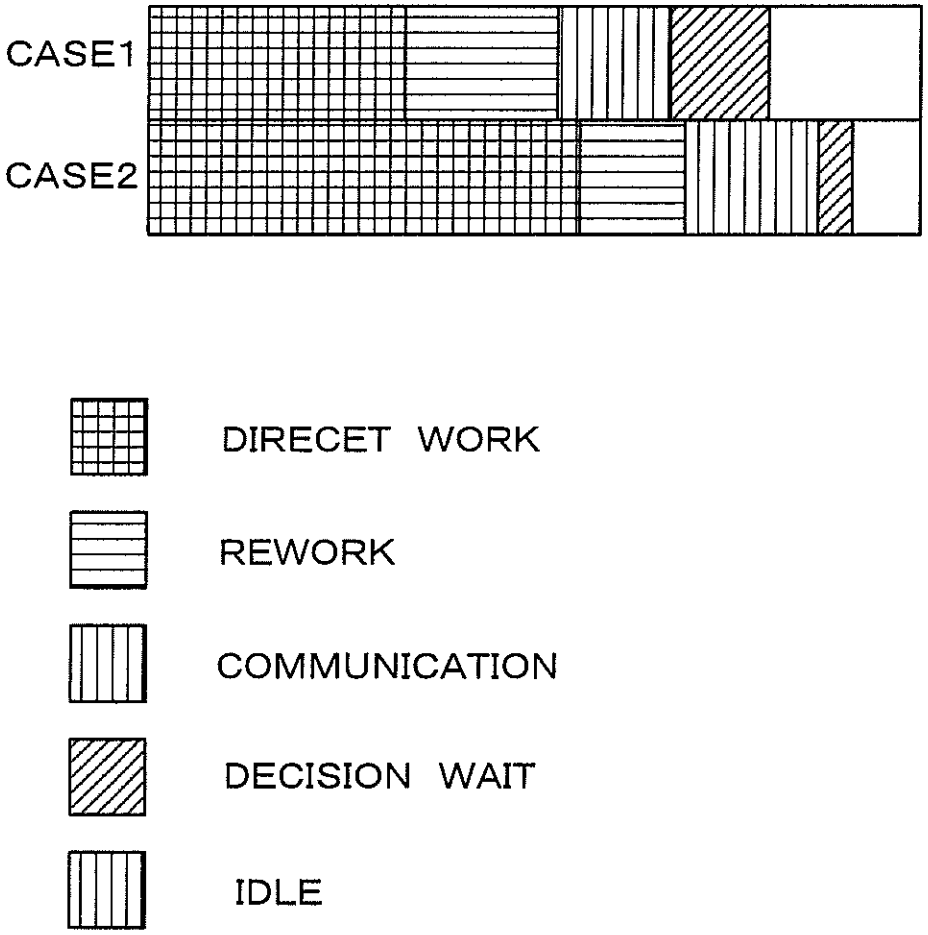

CASE1
CASE2
DIRECET WORK
REWORK
COMMUNICATION
DECISION WAIT
IDLE

FIG. 11A

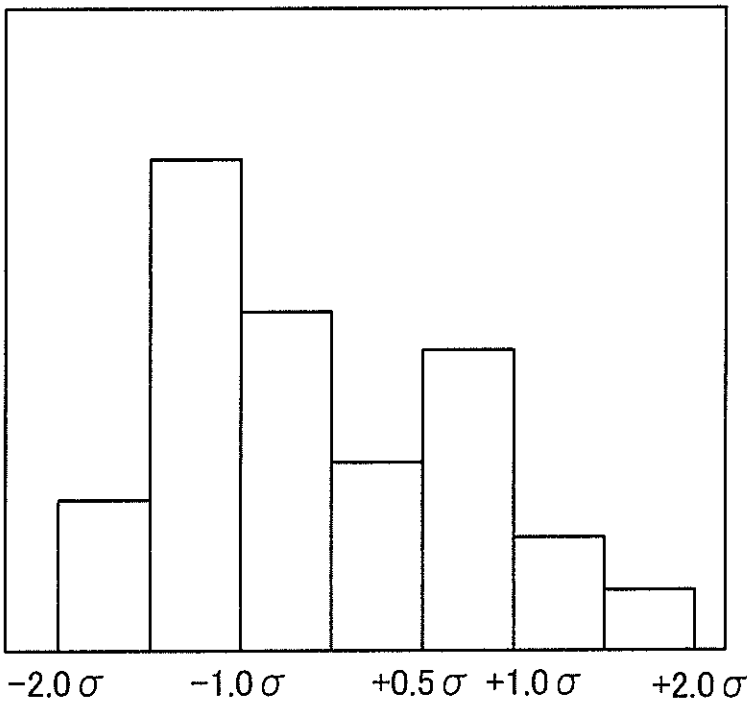


FIG. 11B

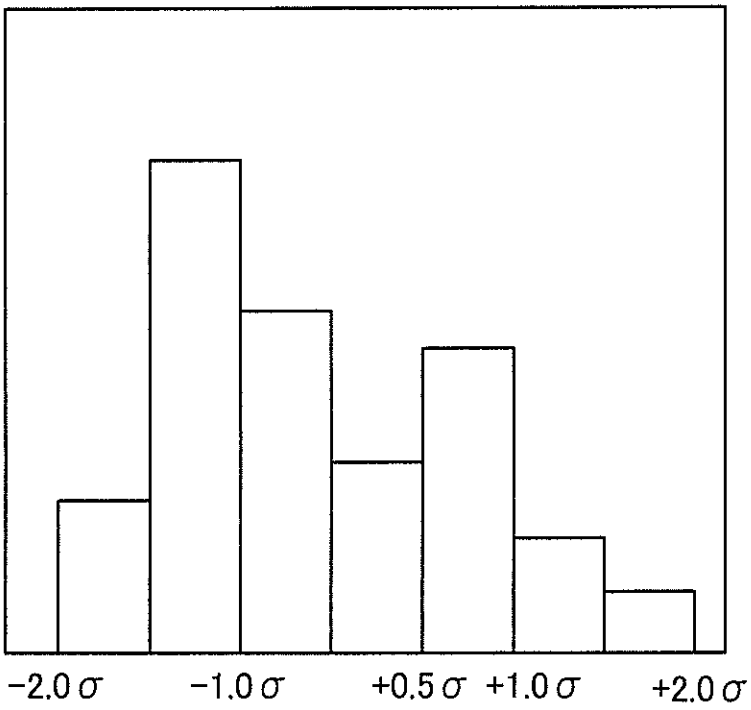


FIG. 12A

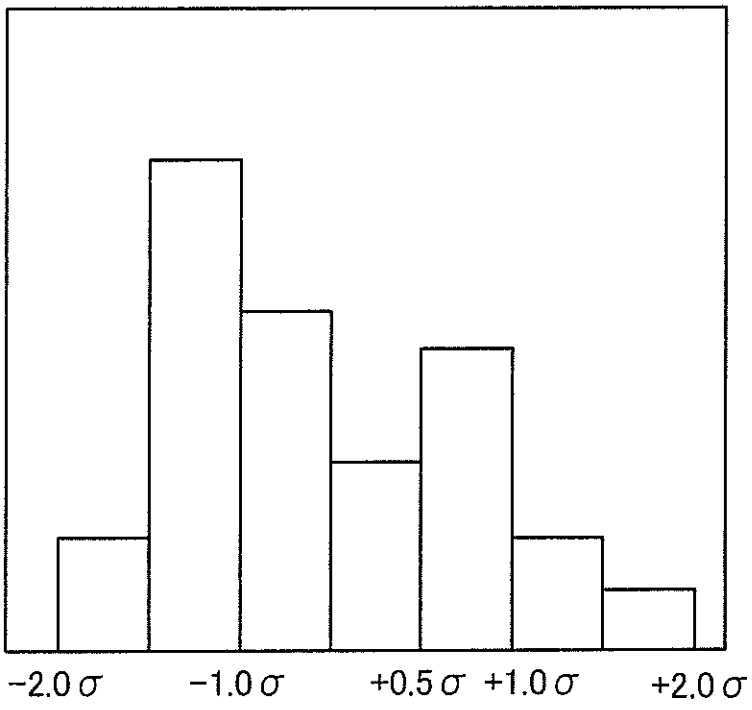


FIG. 12B

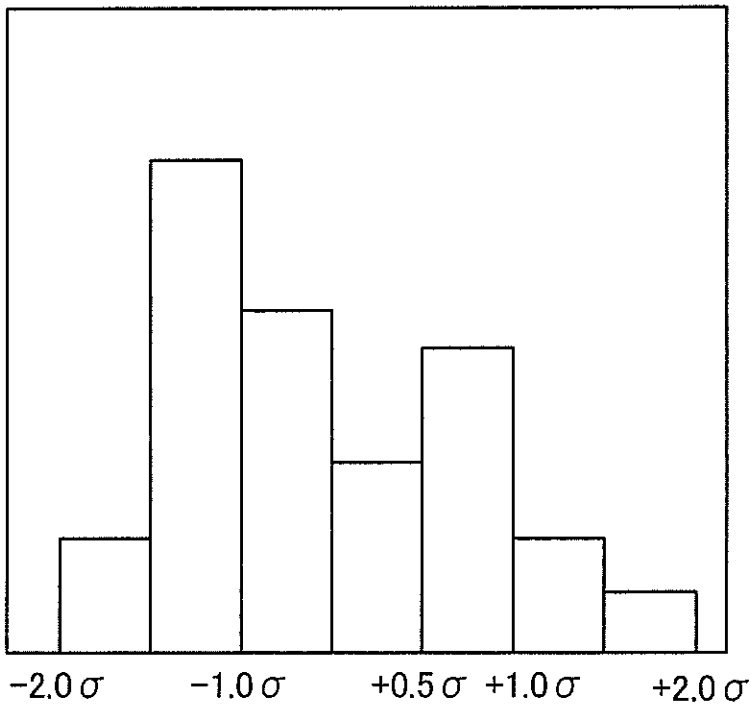


FIG. 13

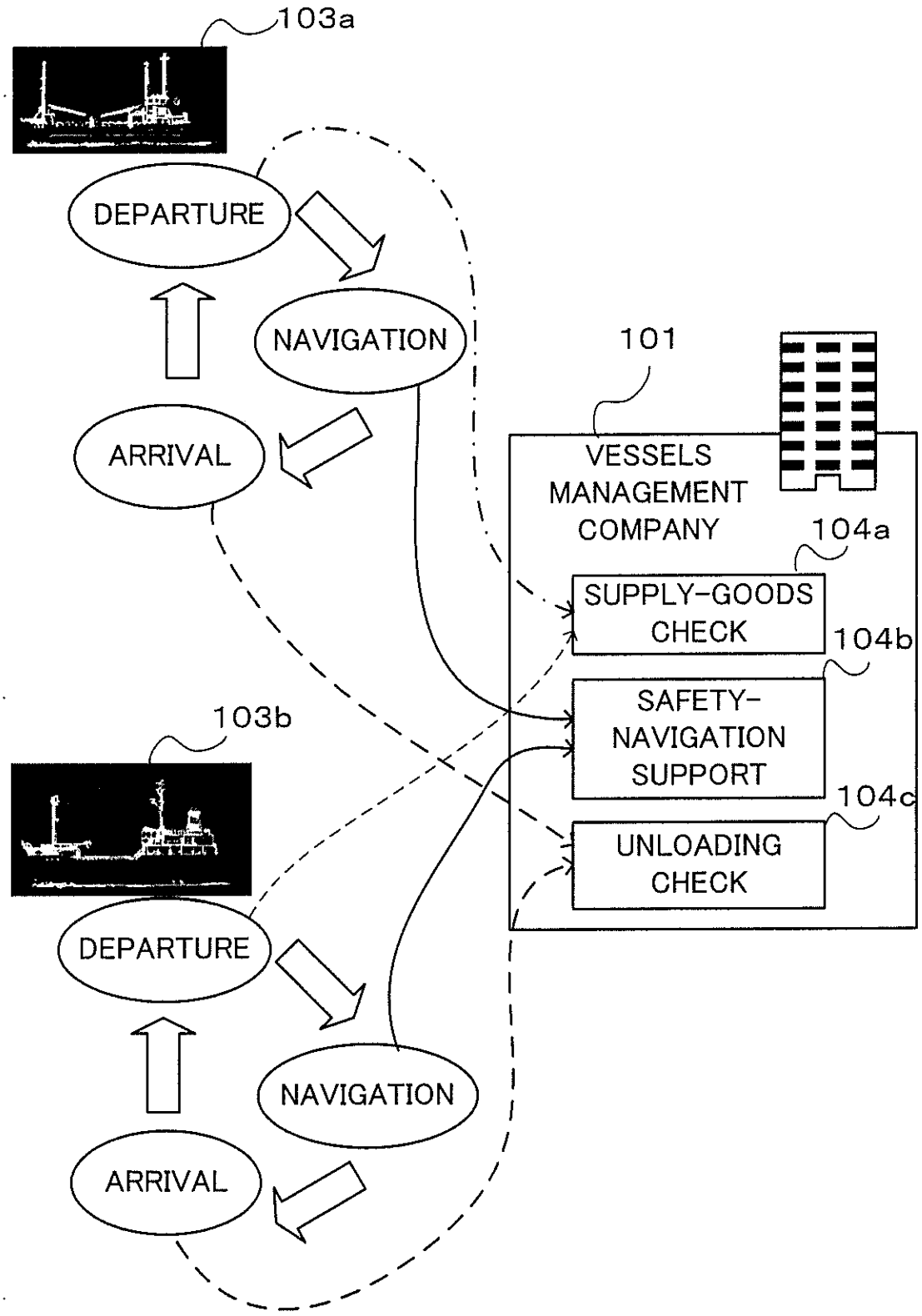

103a
DEPARTURE
NAVIGATION
ARRIVAL
101
VESSELS MANAGEMENT COMPANY
104a
SUPPLY-GOODS CHECK
104b
SAFETY-NAVIGATION SUPPORT
104c
UNLOADING CHECK
103b
DEPARTURE
NAVIGATION
ARRIVAL

FIG. 14

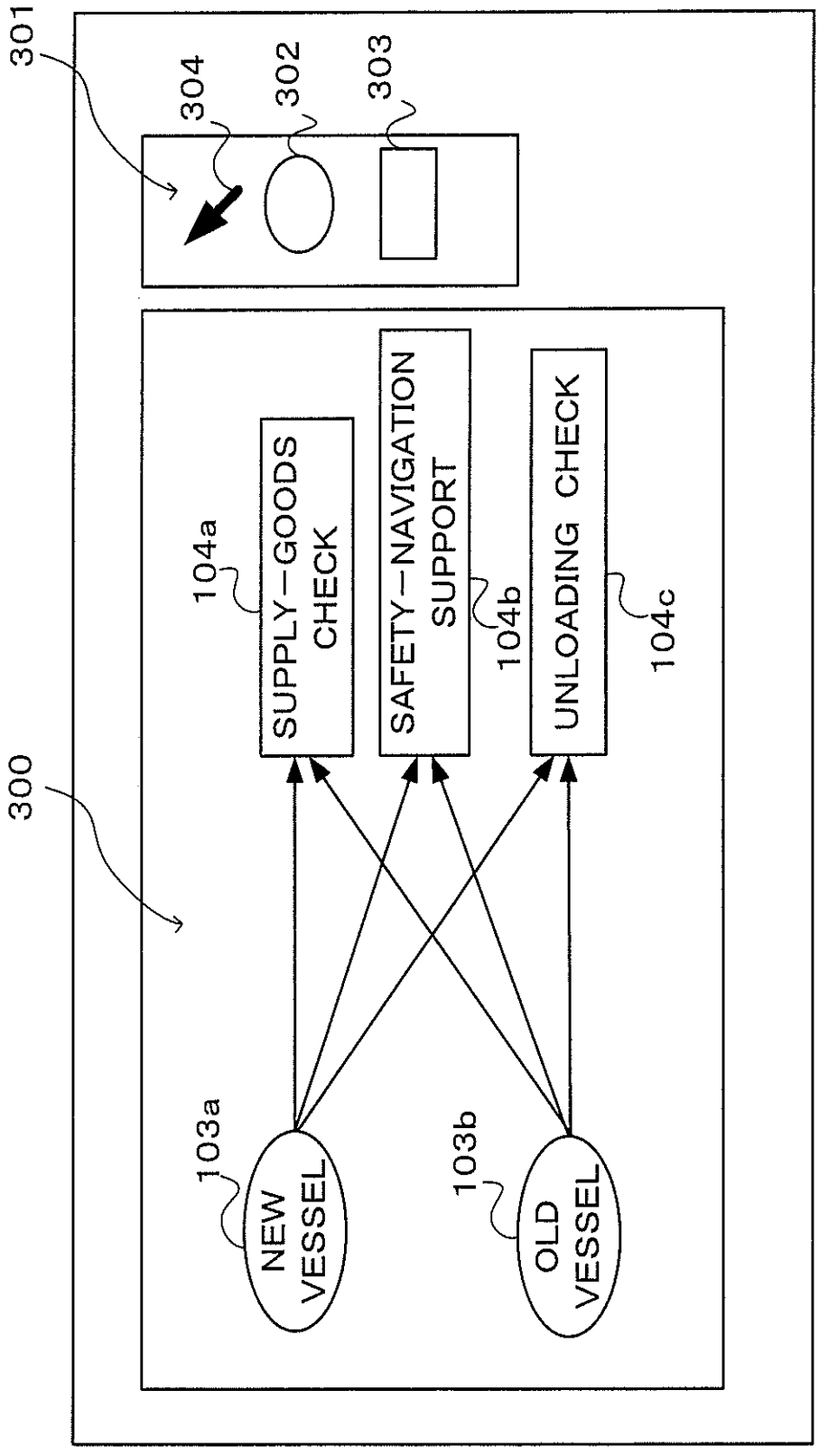

301
304
302
303
300
104a
SUPPLY—GOODS CHECK
SAFETY—NAVIGATION SUPPORT
104b
UNLOADING CHECK
104c
103a
NEW VESSEL
103b
OLD VESSEL

FIG. 15

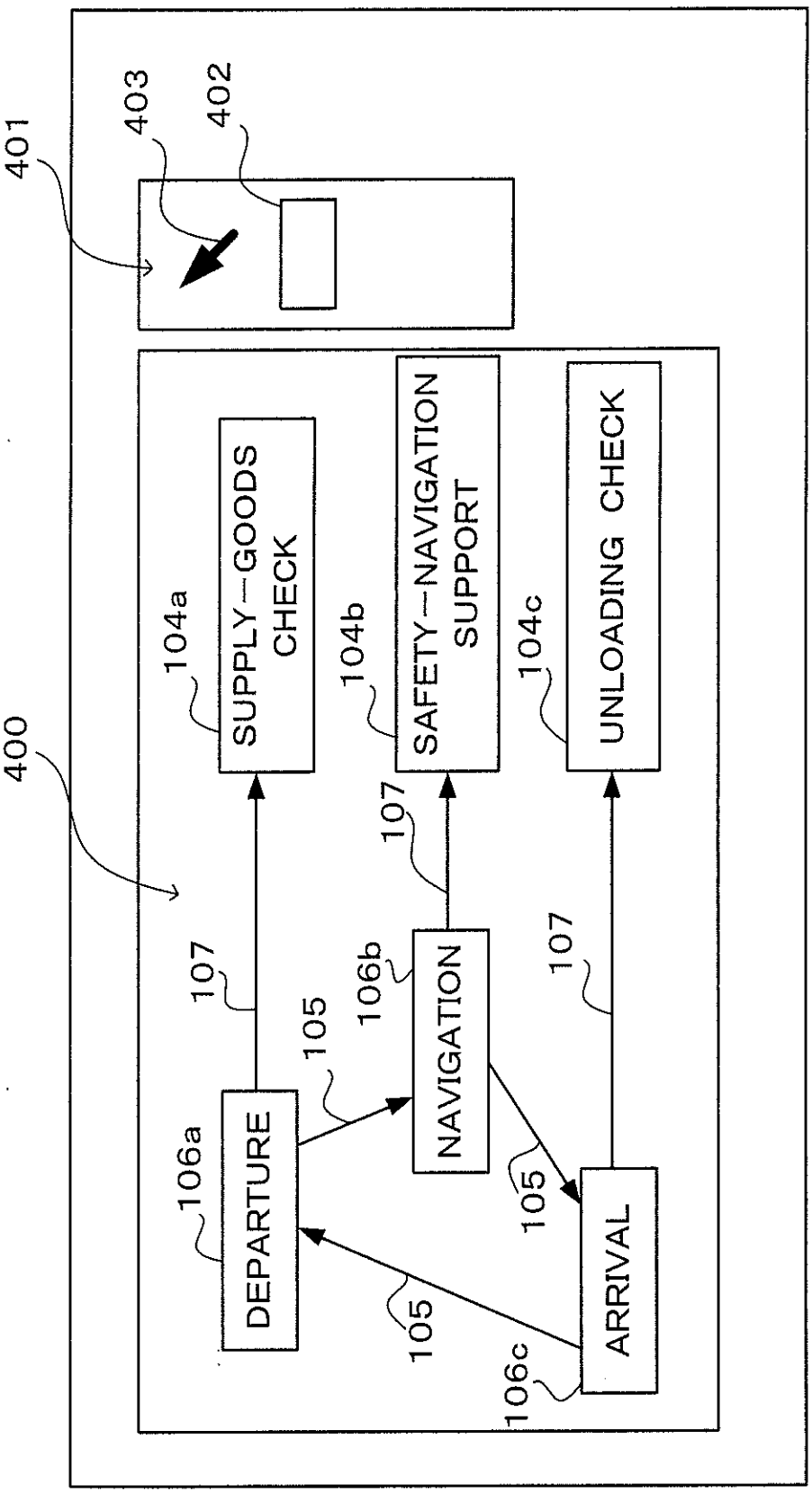

400
401
402
403
SUPPLY—GOODS CHECK
SAFETY—NAVIGATION SUPPORT
UNLOADING CHECK
104a
104b
104c
DEPARTURE
NAVIGATION
ARRIVAL
106a
106b
106c
105
107

FIG. 16

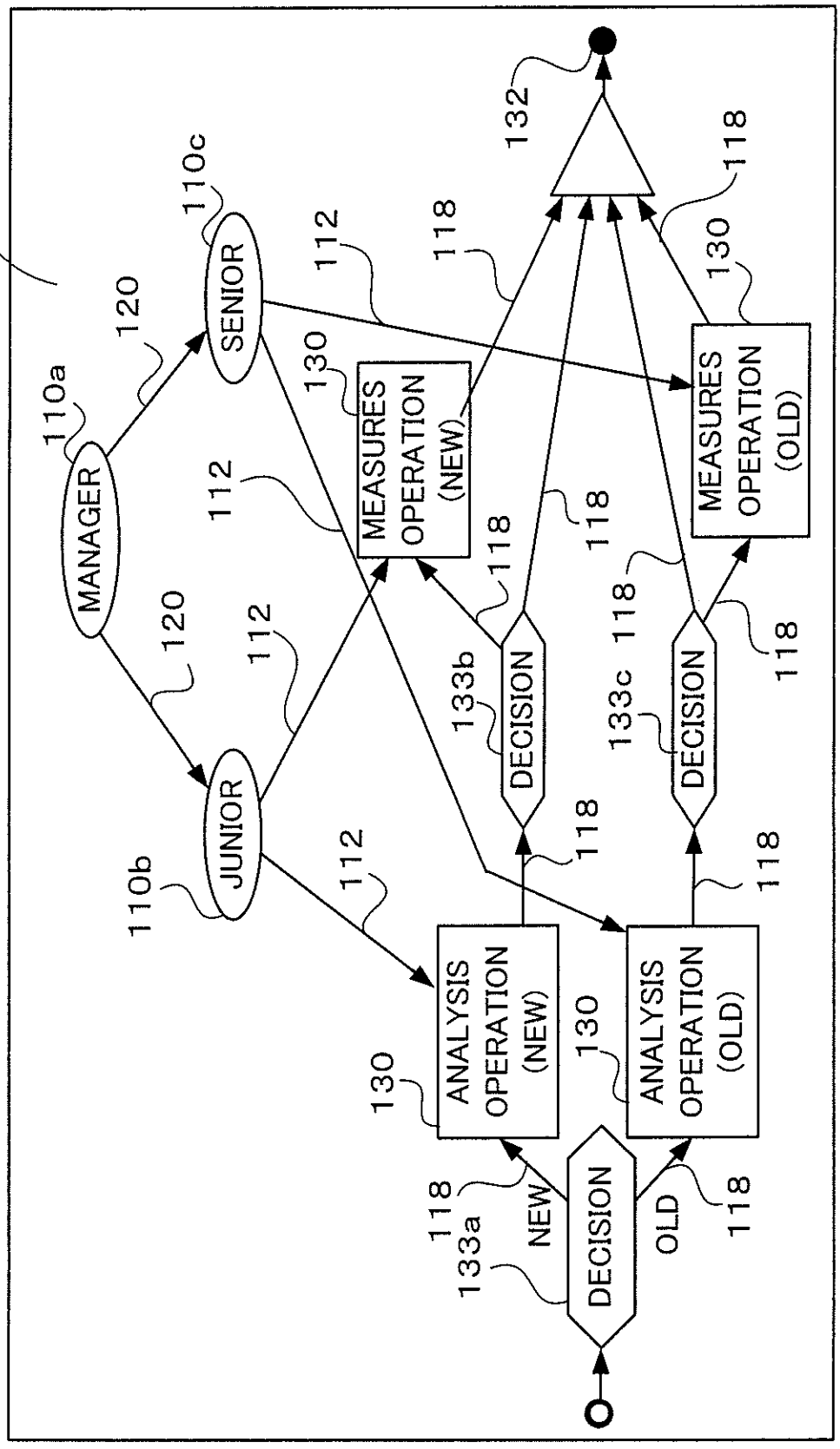

500
MANAGER
110a
SENIOR
110c
JUNIOR
110b
120
112
130
MEASURES OPERATION (NEW)
MEASURES OPERATION (OLD)
ANALYSIS OPERATION (NEW)
ANALYSIS OPERATION (OLD)
DECISION
133a
133b
133c
NEW
OLD
118
132

FIG. 17A

CLIENT	BRANCH DESTINATION
NEW VESSEL	ANALYSIS OPERATON(NEW)
OLD VESSEL	ANALYSIS OPERATON(OLD)

FIG. 17B

DECISION1

NEXT OPERATION	%
EXIT	80
MEASURES OPERATION (NEW)	20

DECISION2

NEXT OPERATION	%
EXIT	60
MEASURES OPERATION (OLD)	40

FIG. 17C

		SOP NAME	
		ANALYSIS OPERATION	MEASURES OPERATION
NEW	SOP EXPECTED WORK VOLUME	1 human-time	5 human-time
OLD	SOP EXPECTED WORK VOLUME	1 human-time	5 human-time

FIG. 18

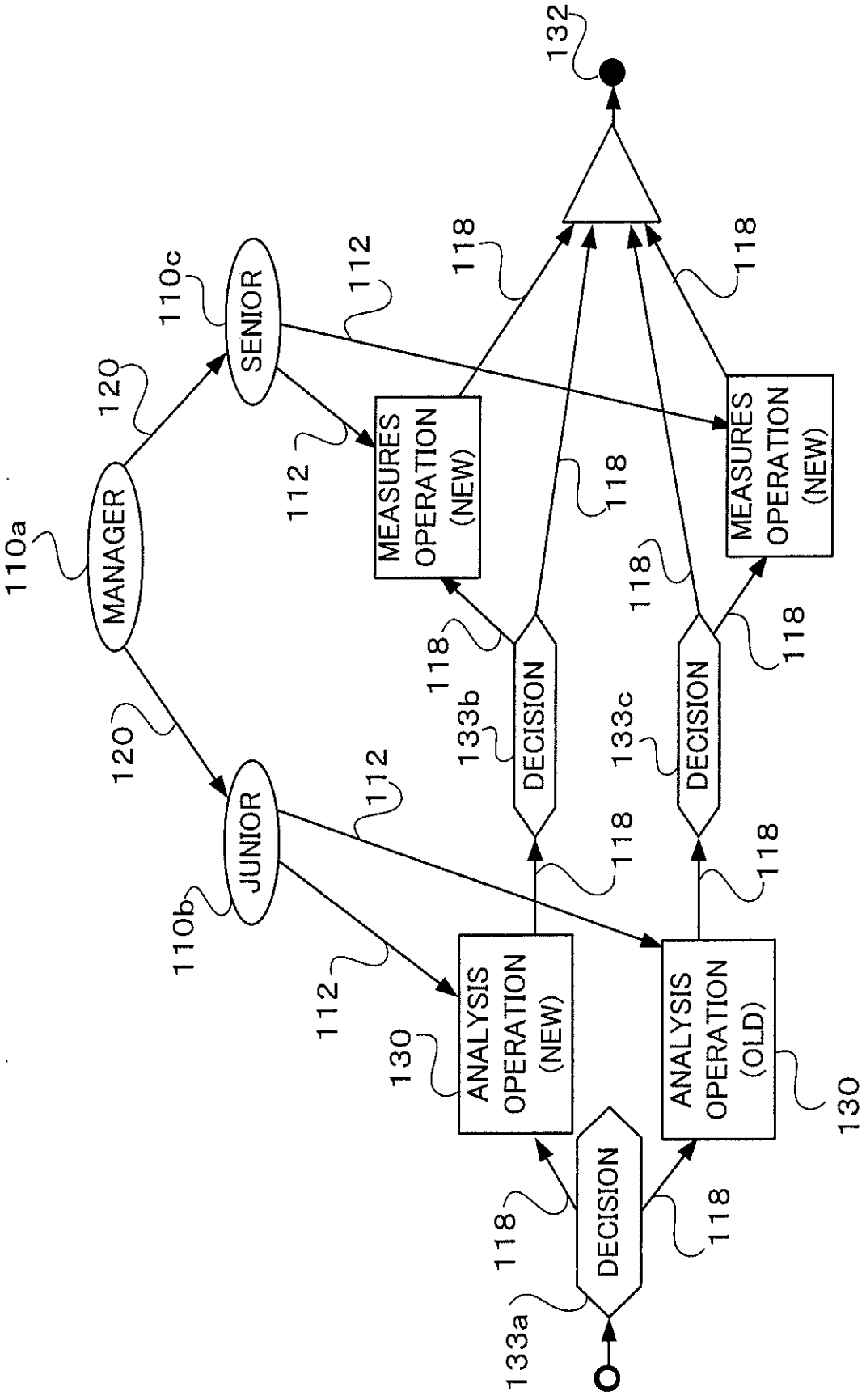

MANAGER
SENIOR
JUNIOR
MEASURES OPERATION (NEW)
MEASURES OPERATION (NEW)
DECISION
DECISION
DECISION
ANALYSIS OPERATION (NEW)
ANALYSIS OPERATION (OLD)
110a
110b
110c
120
112
118
130
132
133a
133b
133c

FIG. 19A

SOP COMPLEXITY

SKILL LEVEL (WITHIN SKILL FIELD)

	LOW	MIDDLE	HIGH
LOW	1.0	0.9	0.7
MIDDLE	1.1	1.0	0.9
HIGH	1.3	1.1	1.0

FIG. 19B

SOP COMPLEXITY

SKILL LEVEL (EXCEPT SKILL FIELD)

	LOW	MIDDLE	HIGH
LOW	0.5	0.3	0.3
MIDDLE	0.6	0.5	0.4
HIGH	0.7	0.6	0.5

FIG. 19C

EXECUTION ABILITY	FACTOR
R1	1
R2	1.2
R3	1.4
R4	1.6
R5	1.8

FIG. 20A

SOP COMPLEXITY

SKILL LEVEL (WITHIN SKILL FIELD)	LOW	MIDDLE	HIGH
LOW	1.0	1.2	1.8
MIDDLE	0.8	1.0	1.2
HIGH	0.7	0.8	1.0

FIG. 20B

SOP COMPLEXITY

SKILL LEVEL (EXCEPT SKILL FIELD)	LOW	MIDDLE	HIGH
LOW	1.4	1.6	1.8
MIDDLE	1.3	1.4	1.5
HIGH	1.2	1.3	1.4

FIG. 21

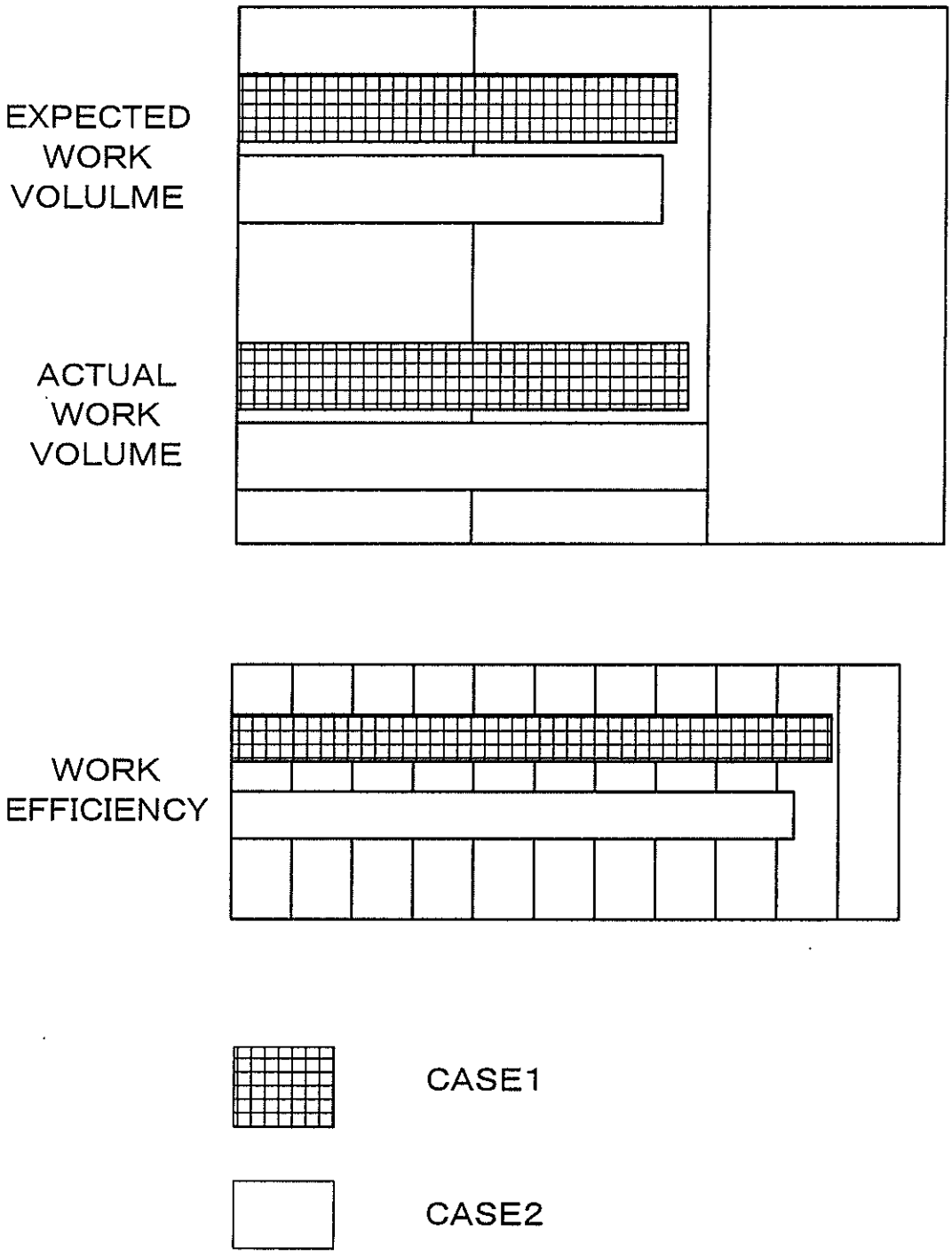

EXPECTED WORK VOLULME
ACTUAL WORK VOLUME
WORK EFFICIENCY
CASE1
CASE2

FIG. 22A

CASE1

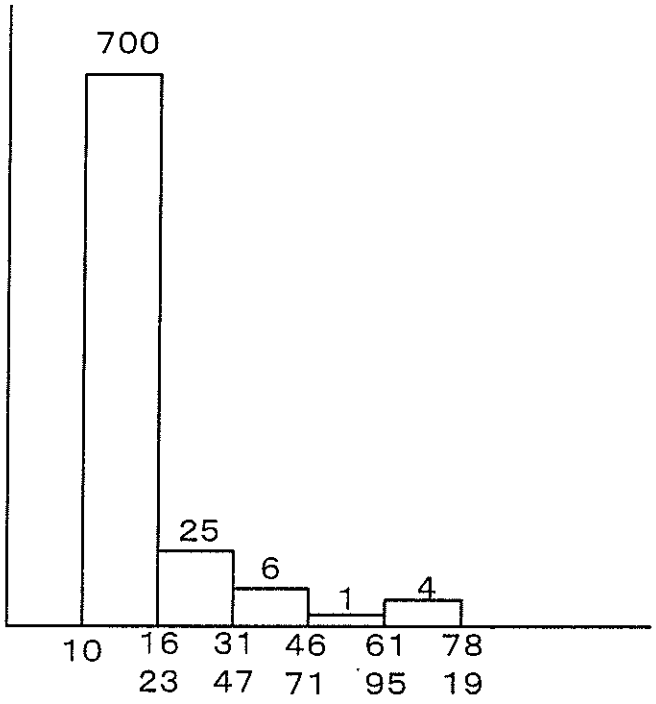


FIG. 22B

CASE2

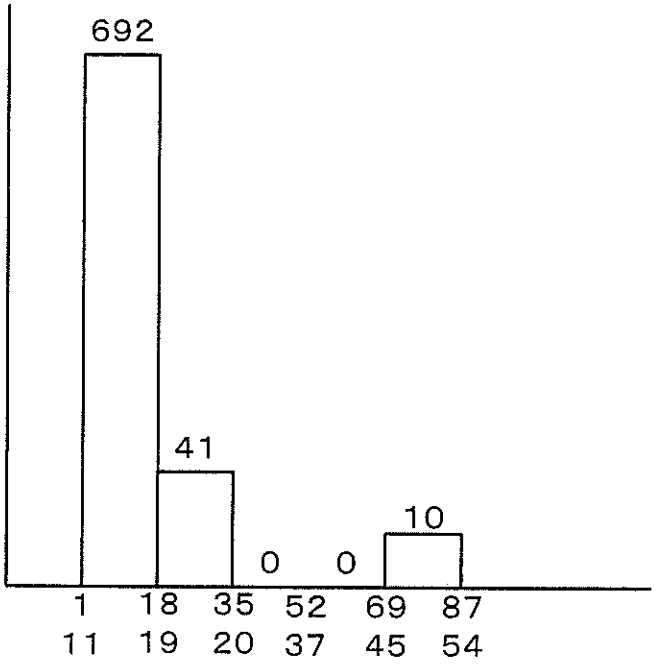


FIG. 23A

CASE1

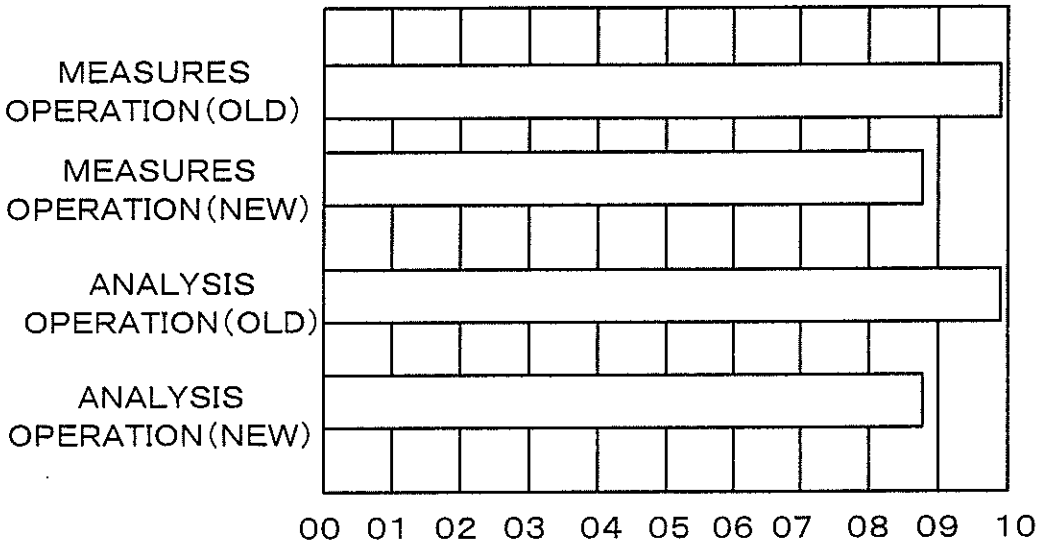


FIG. 23B

CASE2

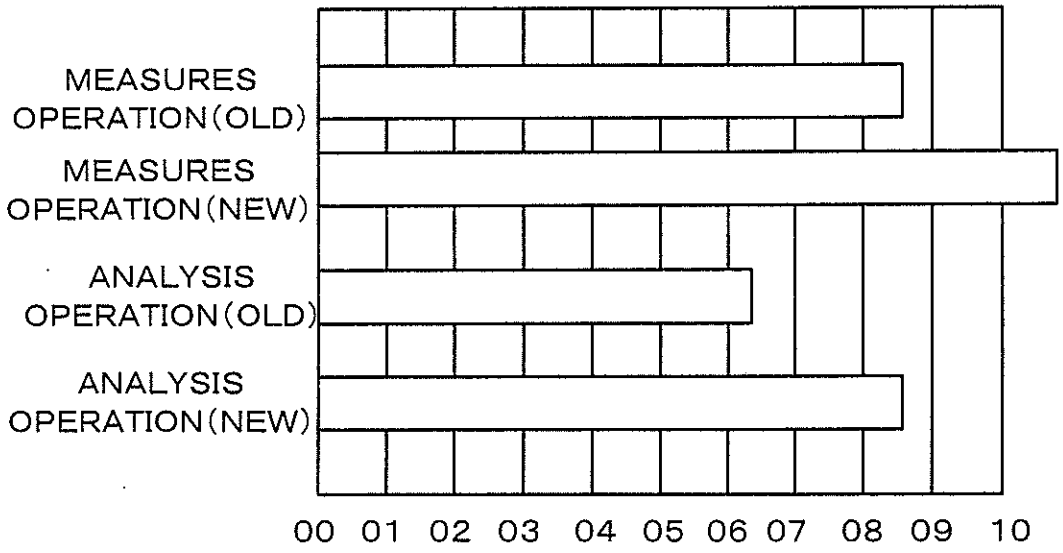


FIG. 24

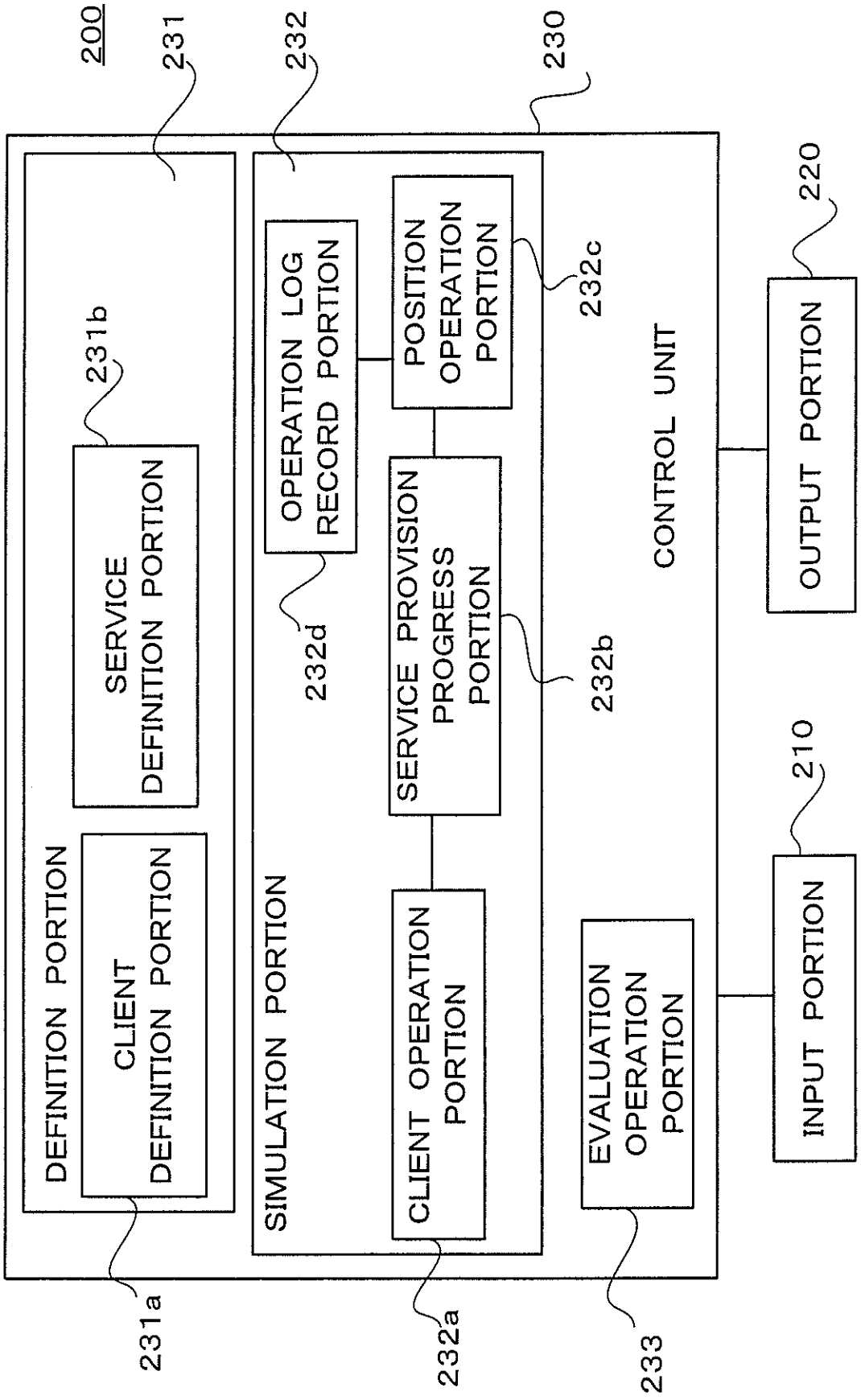

200
231
232
230
DEFINITION PORTION
CLIENT DEFINITION PORTION
231b
SERVICE DEFINITION PORTION
SIMULATION PORTION
OPERATION LOG RECORD PORTION
232d
POSITION OPERATION PORTION
232c
SERVICE PROVISION PROGRESS PORTION
232b
CONTROL UNIT
OUTPUT PORTION
220
CLIENT OPERATION PORTION
EVALUATION OPERATION PORTION
INPUT PORTION
210
231a
232a
233

FIG. 25

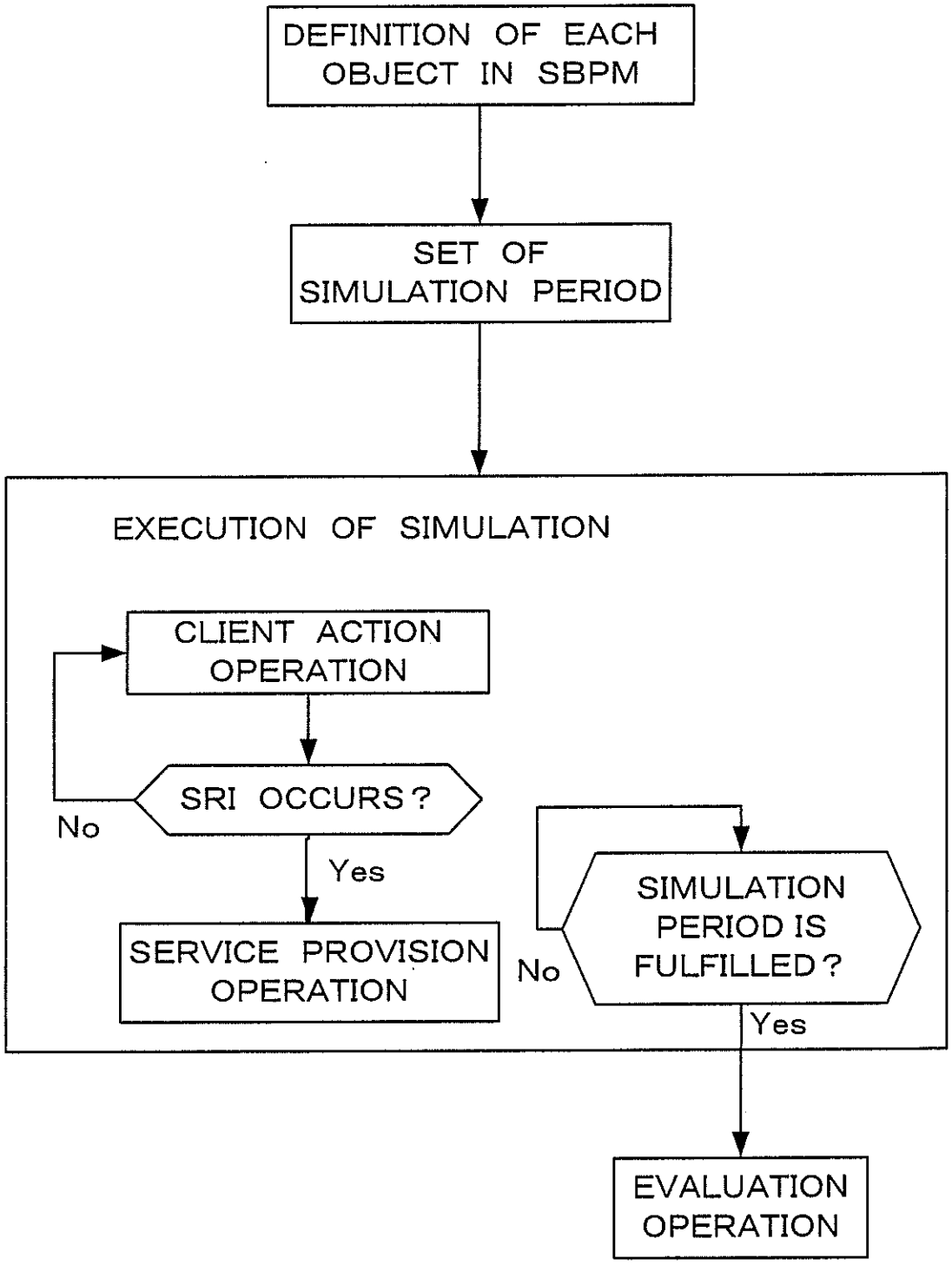

DEFINITION OF EACH OBJECT IN SBPM
SET OF SIMULATION PERIOD
EXECUTION OF SIMULATION
CLIENT ACTION OPERATION
SRI OCCURS?
No
Yes
SERVICE PROVISION OPERATION
SIMULATION PERIOD IS FULFILLED?
No
Yes
EVALUATION OPERATION

FIG. 26

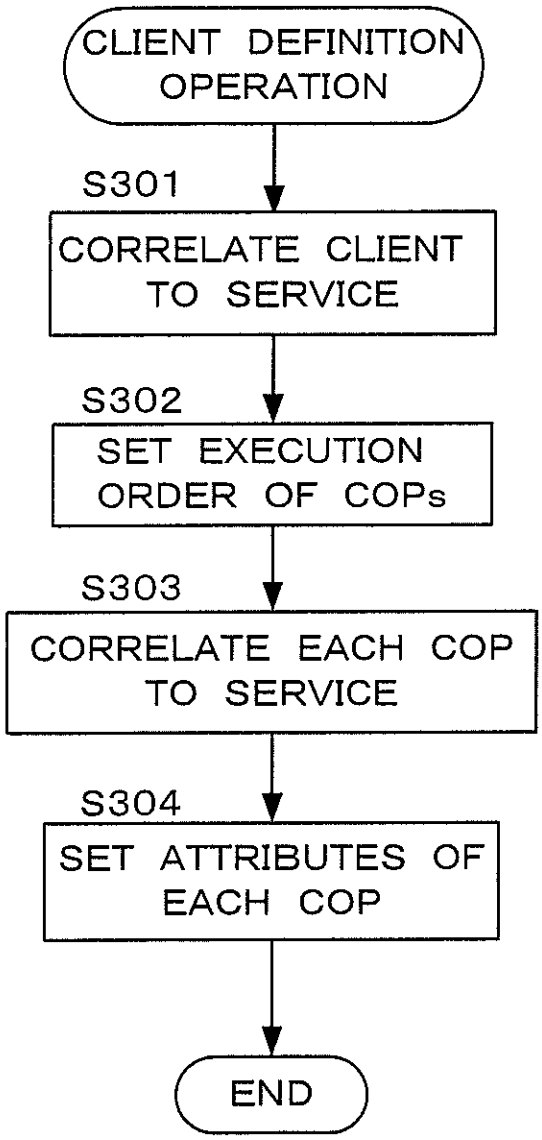

CLIENT DEFINITION OPERATION
S301
CORRELATE CLIENT TO SERVICE
S302
SET EXECUTION ORDER OF COPs
S303
CORRELATE EACH COP TO SERVICE
S304
SET ATTRIBUTES OF EACH COP
END

FIG. 27

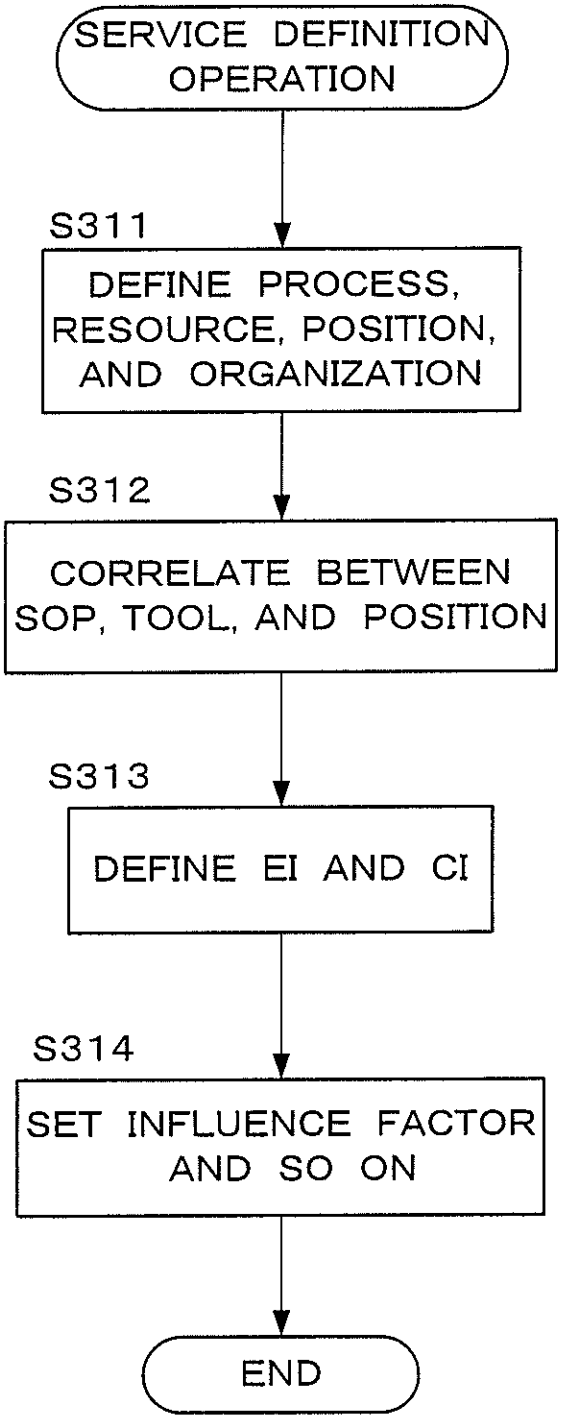

SERVICE DEFINITION OPERATION
S311
DEFINE PROCESS, RESOURCE, POSITION, AND ORGANIZATION
S312
CORRELATE BETWEEN SOP, TOOL, AND POSITION
S313
DEFINE EI AND CI
S314
SET INFLUENCE FACTOR AND SO ON
END

FIG. 28

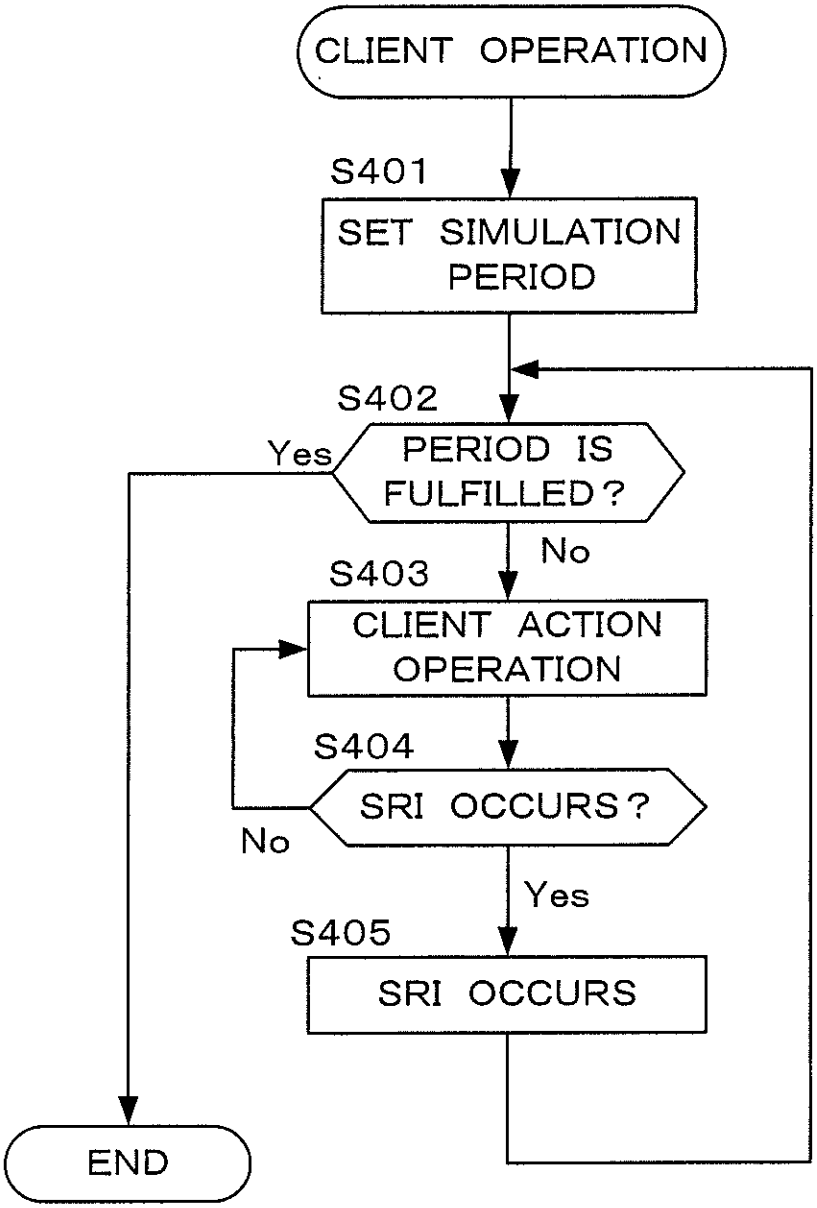

CLIENT OPERATION
S401
SET SIMULATION PERIOD
S402
Yes
PERIOD IS FULFILLED?
No
S403
CLIENT ACTION OPERATION
S404
SRI OCCURS?
No
Yes
S405
SRI OCCURS
END

FIG. 29

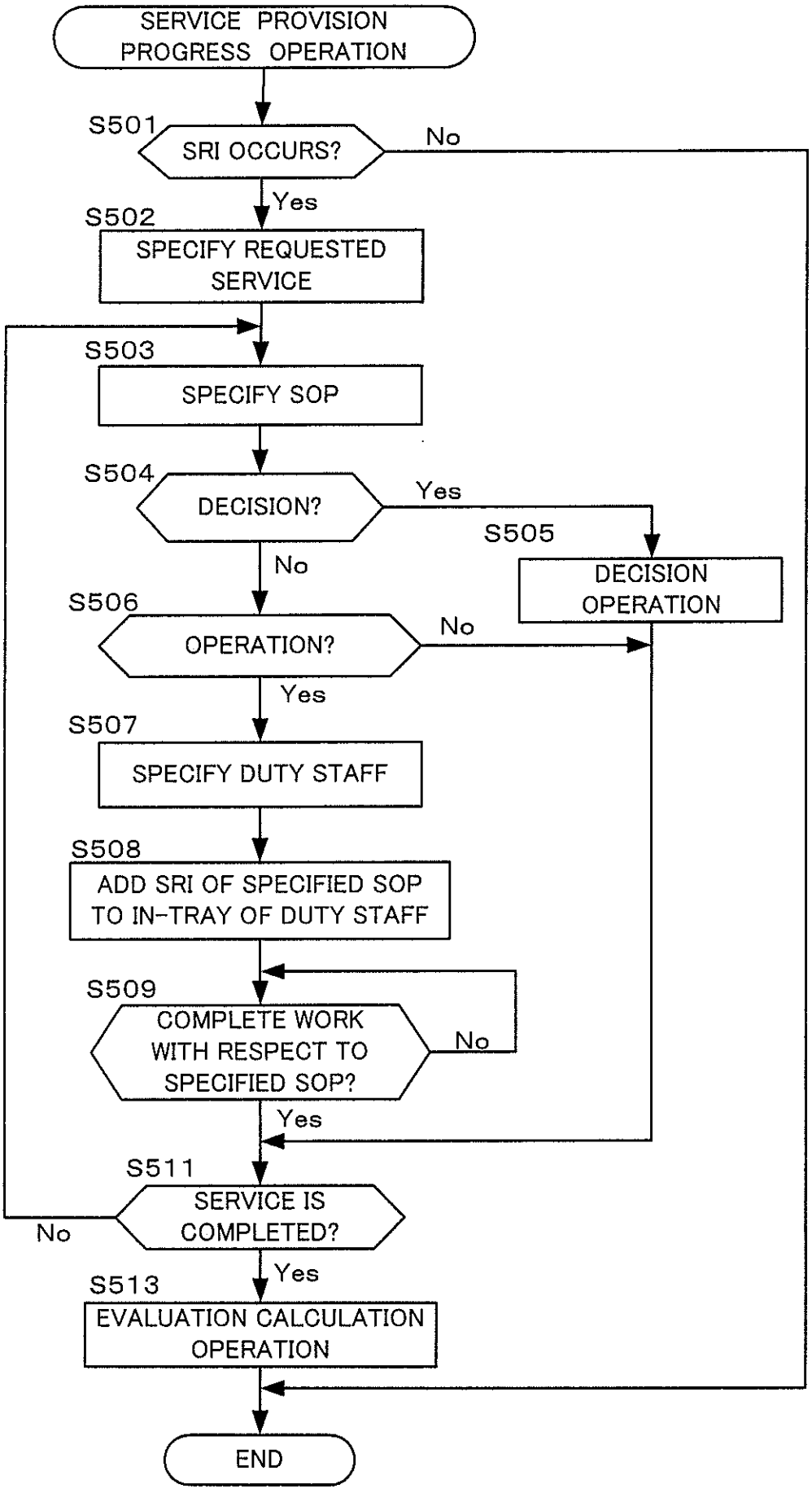

SERVICE PROVISION PROGRESS OPERATION
S501
SRI OCCURS?
No
Yes
S502
SPECIFY REQUESTED SERVICE
S503
SPECIFY SOP
S504
DECISION?
Yes
S505
DECISION OPERATION
No
S506
OPERATION?
No
Yes
S507
SPECIFY DUTY STAFF
S508
ADD SRI OF SPECIFIED SOP TO IN-TRAY OF DUTY STAFF
S509
COMPLETE WORK WITH RESPECT TO SPECIFIED SOP?
No
Yes
S511
SERVICE IS COMPLETED?
No
Yes
S513
EVALUATION CALCULATION OPERATION
END

FIG. 30

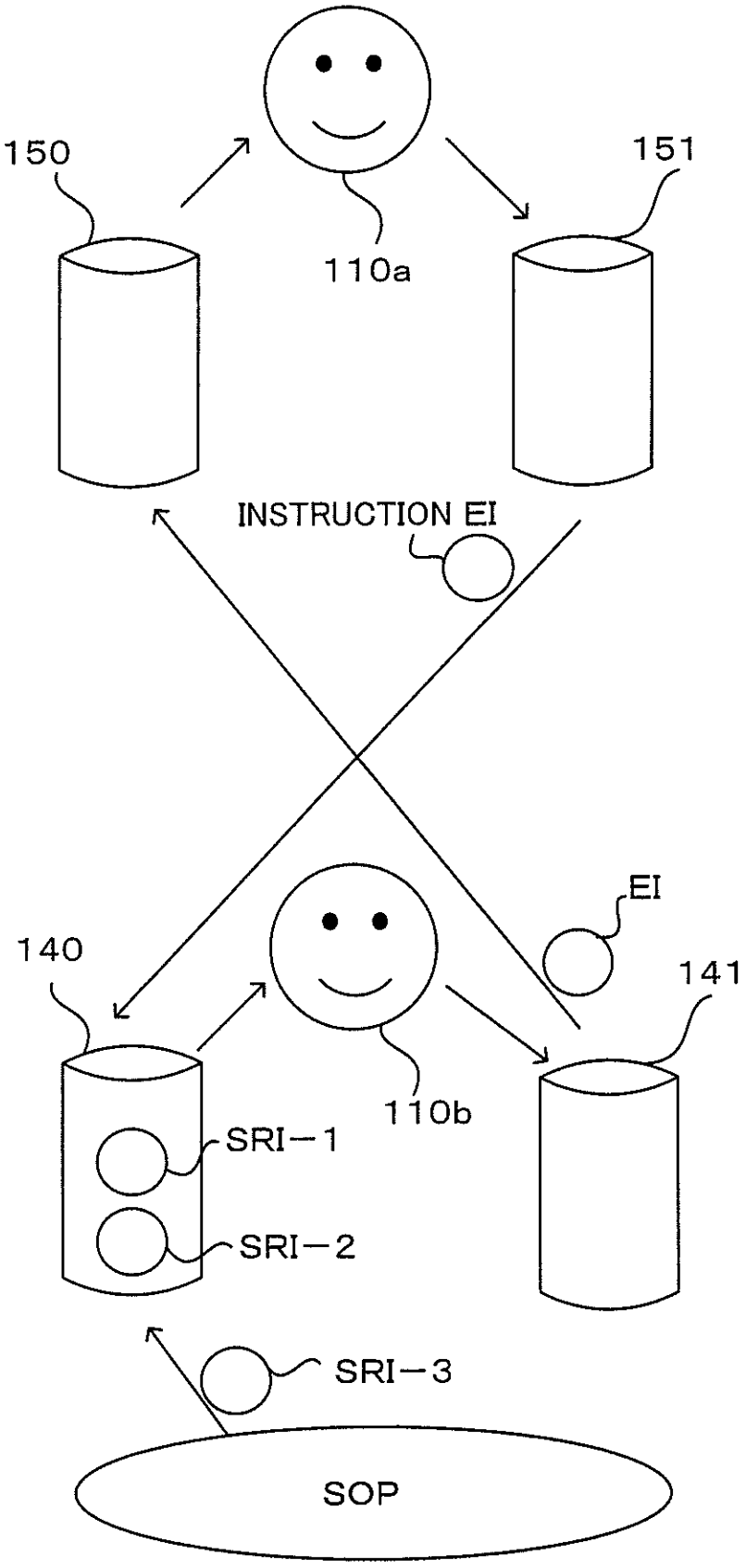

150
151
110a
INSTRUCTION EI
EI
140
141
110b
SRI−1
SRI−2
SRI−3
SOP

FIG. 31

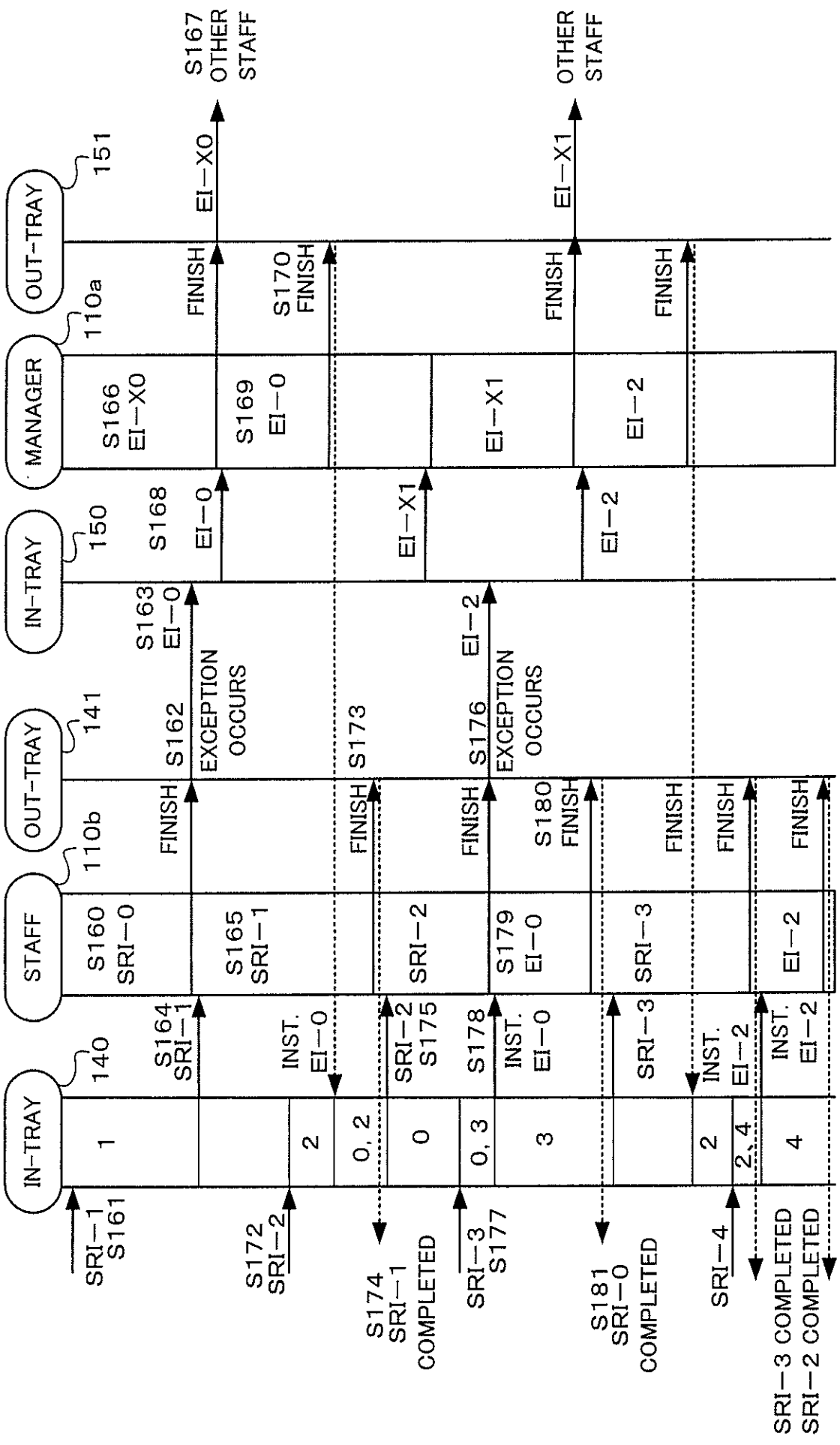

IN-TRAY
140
STAFF
110b
OUT-TRAY
141
IN-TRAY
150
MANAGER
110a
OUT-TRAY
151
SRI-1 S161
1
S160 SRI-0
FINISH
S164 SRI-1
INST. EI-0
S162
EXCEPTION OCCURS
S163 EI-0
S168
EI-0
S166 EI-X0
FINISH
S167 OTHER STAFF
S172 SRI-2
2
S165 SRI-1
FINISH
S169 EI-0
S170 FINISH
S174 SRI-1 COMPLETED
0, 2
SRI-2 S175
S173
EI-X1
EI-X1
FINISH
S181 SRI-0 COMPLETED
SRI-3 S177
0
SRI-2
FINISH
S176
EXCEPTION OCCURS
EI-2
EI-2
FINISH
OTHER STAFF
0, 3
S178
INST. EI-0
3
S179 EI-0
S180 FINISH
SRI-3
FINISH
SRI-4
2
SRI-3
FINISH
INST. EI-2
2, 4
SRI-3 COMPLETED
SRI-2 COMPLETED
4
INST. EI-2
SRI-2
FINISH

FIG. 32

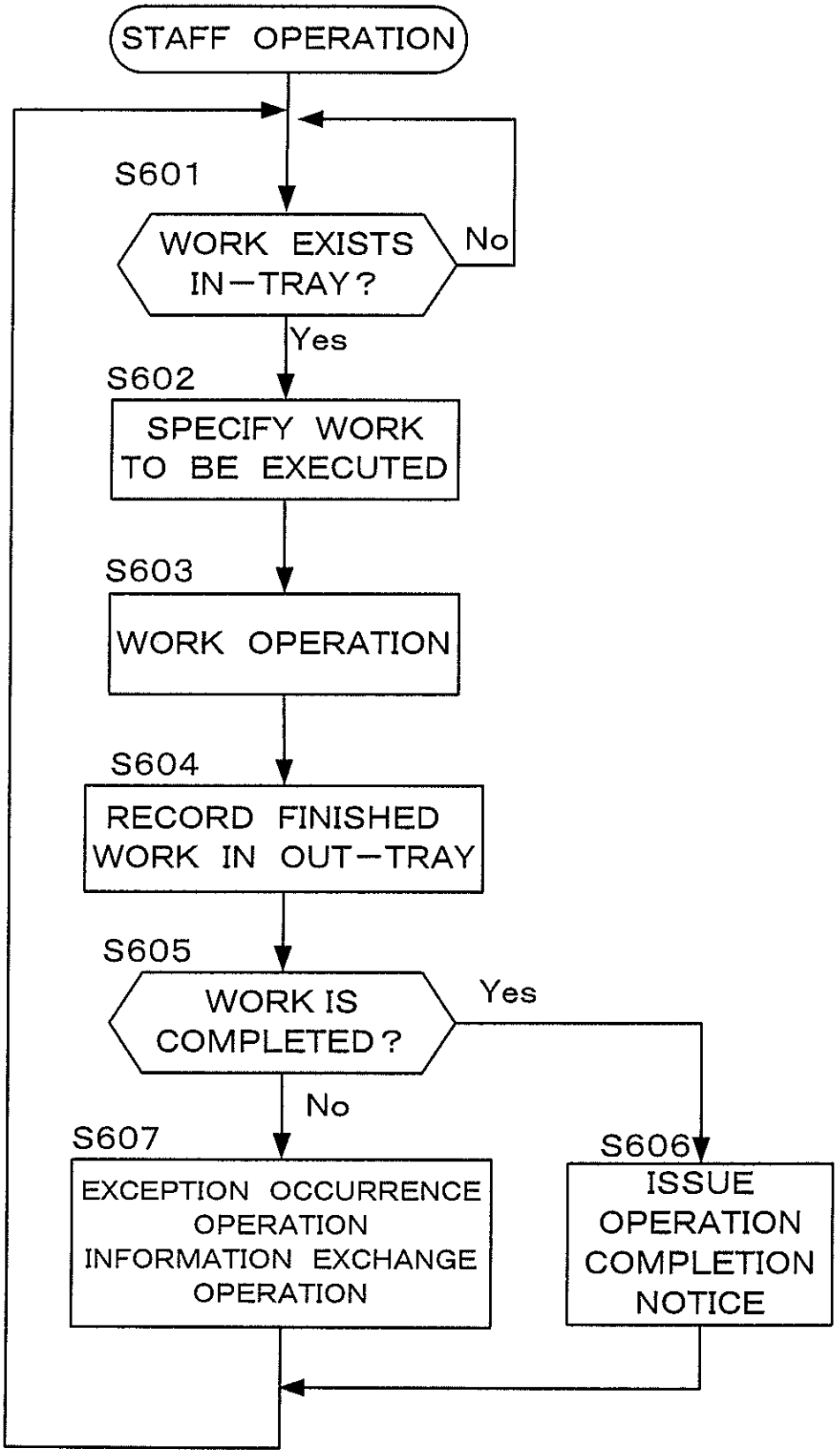

STAFF OPERATION
S601
WORK EXISTS IN-TRAY?
No
Yes
S602
SPECIFY WORK TO BE EXECUTED
S603
WORK OPERATION
S604
RECORD FINISHED WORK IN OUT-TRAY
S605
WORK IS COMPLETED?
Yes
No
S607
EXCEPTION OCCURRENCE OPERATION INFORMATION EXCHANGE OPERATION
S606
ISSUE OPERATION COMPLETION NOTICE

FIG. 33

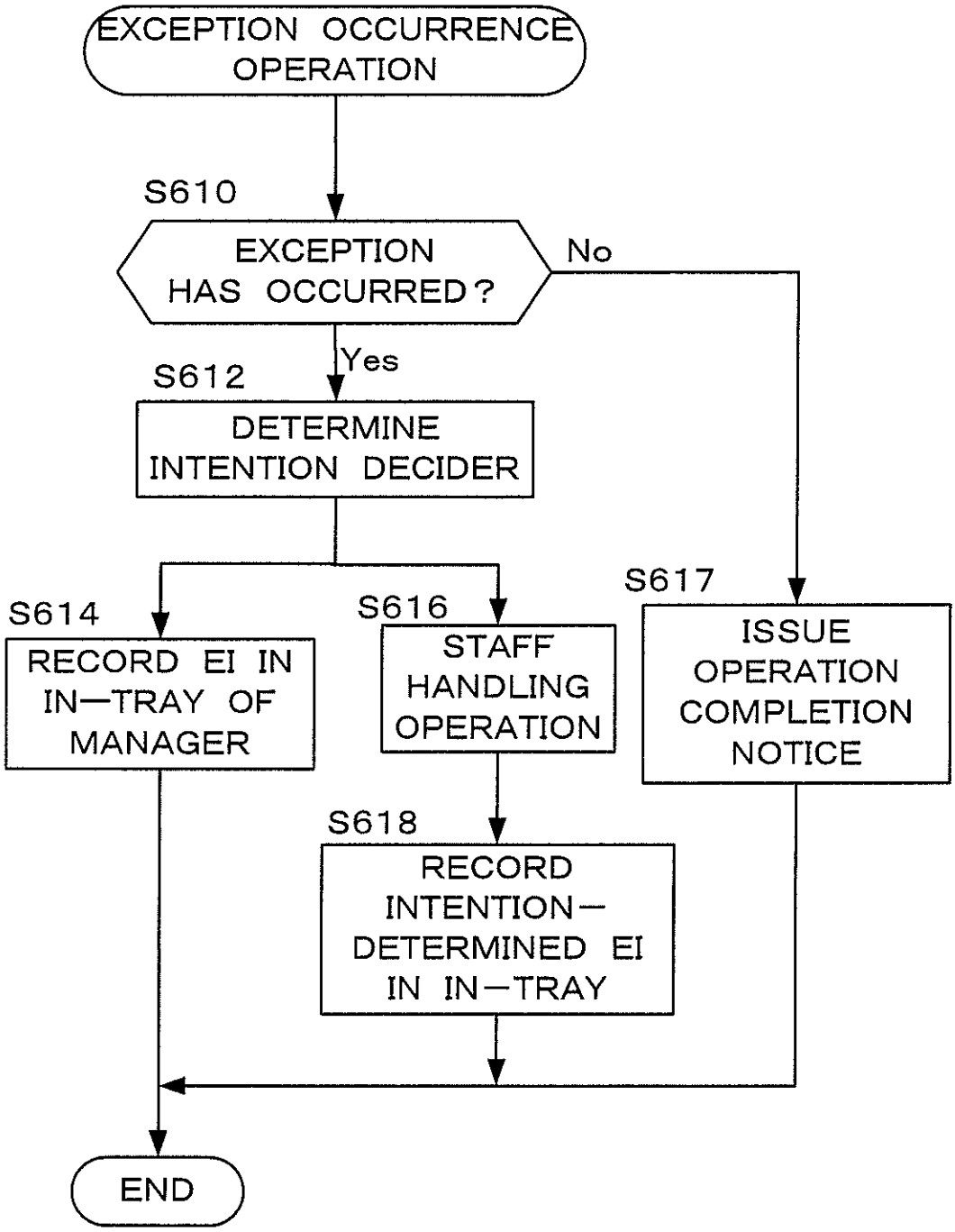

EXCEPTION OCCURRENCE OPERATION
S610
EXCEPTION HAS OCCURRED?
No
Yes
S612
DETERMINE INTENTION DECIDER
S614
RECORD EI IN IN—TRAY OF MANAGER
S616
STAFF HANDLING OPERATION
S617
ISSUE OPERATION COMPLETION NOTICE
S618
RECORD INTENTION—DETERMINED EI IN IN—TRAY
END

FIG. 34

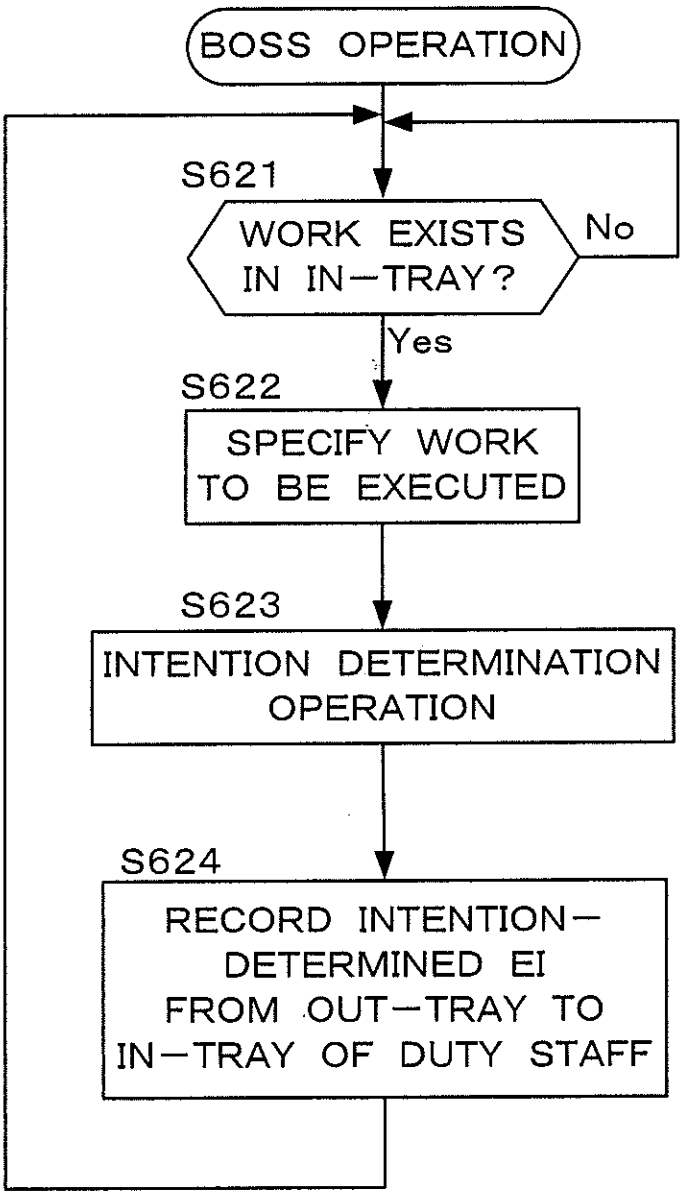

BOSS OPERATION
S621
WORK EXISTS IN IN-TRAY?
No
Yes
S622
SPECIFY WORK TO BE EXECUTED
S623
INTENTION DETERMINATION OPERATION
S624
RECORD INTENTION-DETERMINED EI FROM OUT-TRAY TO IN-TRAY OF DUTY STAFF

FIG. 35

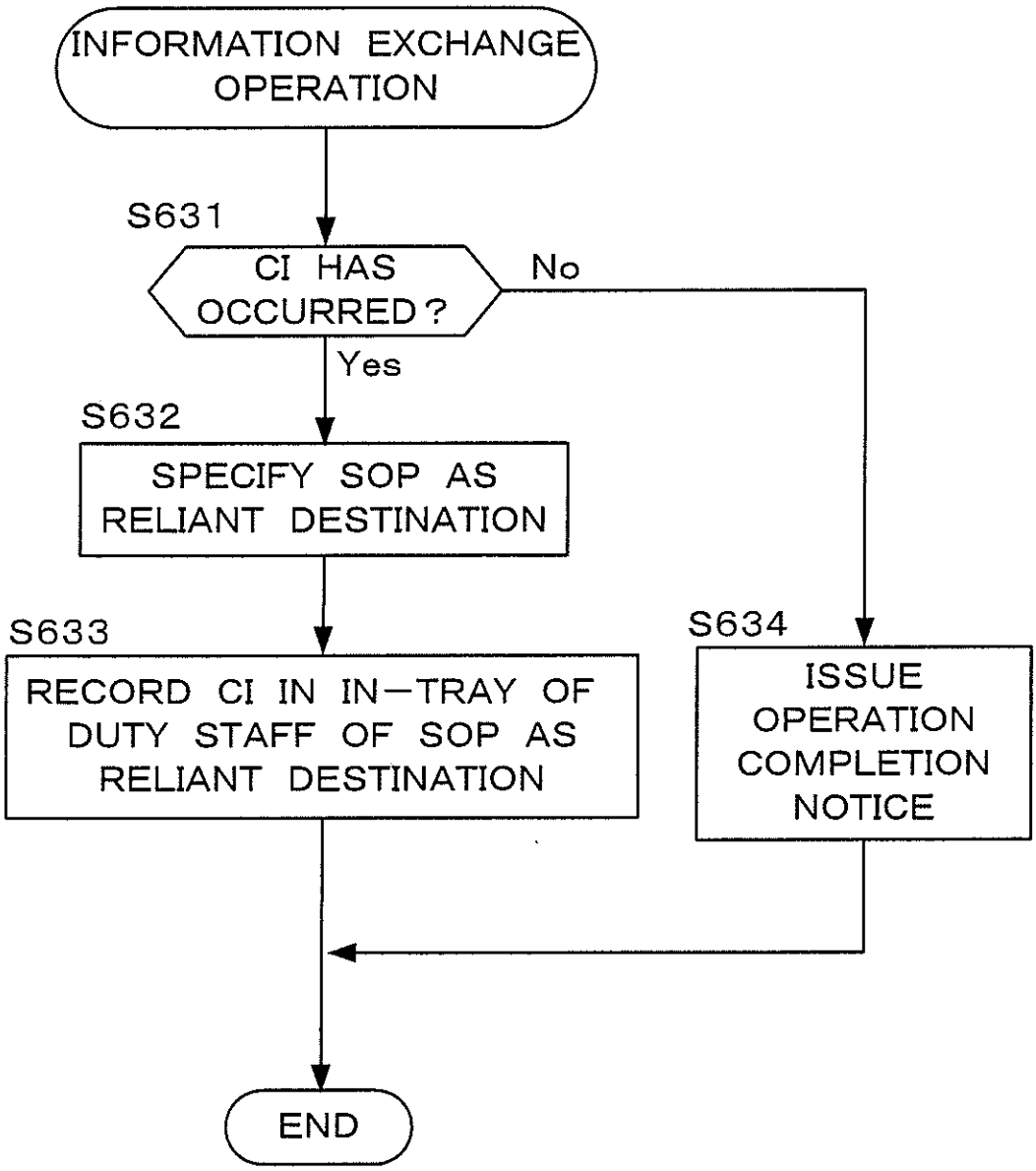

INFORMATION EXCHANGE OPERATION
S631
CI HAS OCCURRED?
No
Yes
S632
SPECIFY SOP AS RELIANT DESTINATION
S633
RECORD CI IN IN-TRAY OF DUTY STAFF OF SOP AS RELIANT DESTINATION
S634
ISSUE OPERATION COMPLETION NOTICE
END

FIG. 36

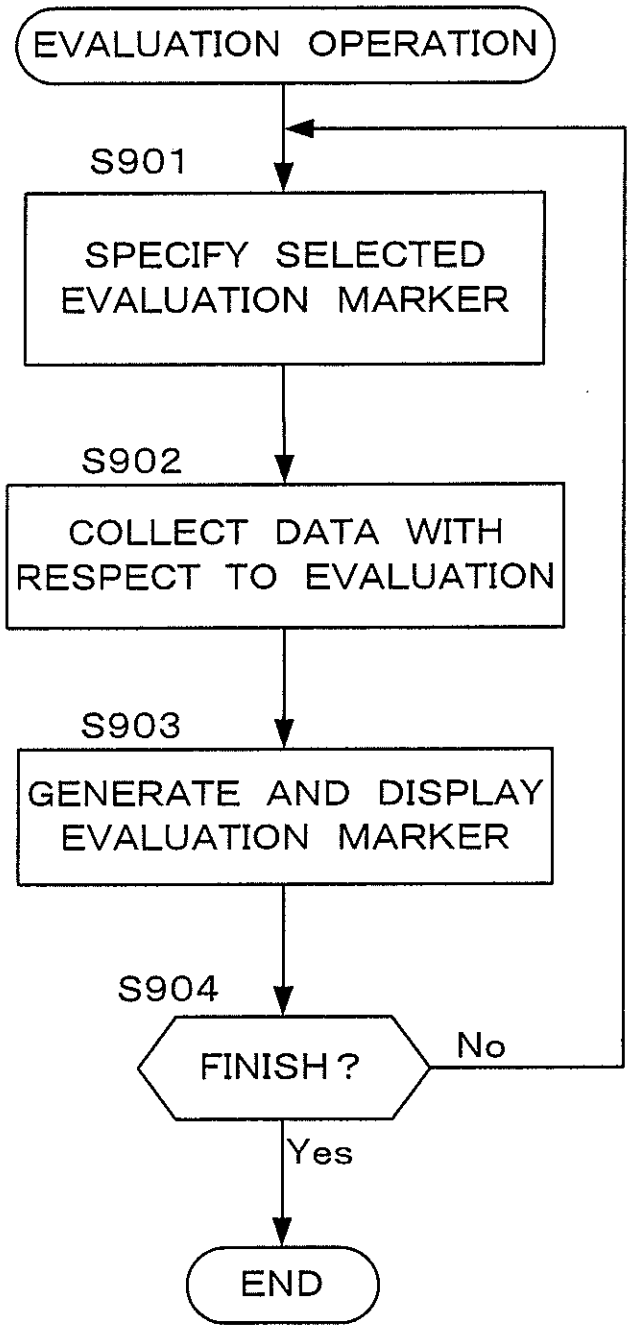

EVALUATION OPERATION
S901
SPECIFY SELECTED EVALUATION MARKER
S902
COLLECT DATA WITH RESPECT TO EVALUATION
S903
GENERATE AND DISPLAY EVALUATION MARKER
S904
FINISH?
No
Yes
END

FIG. 37

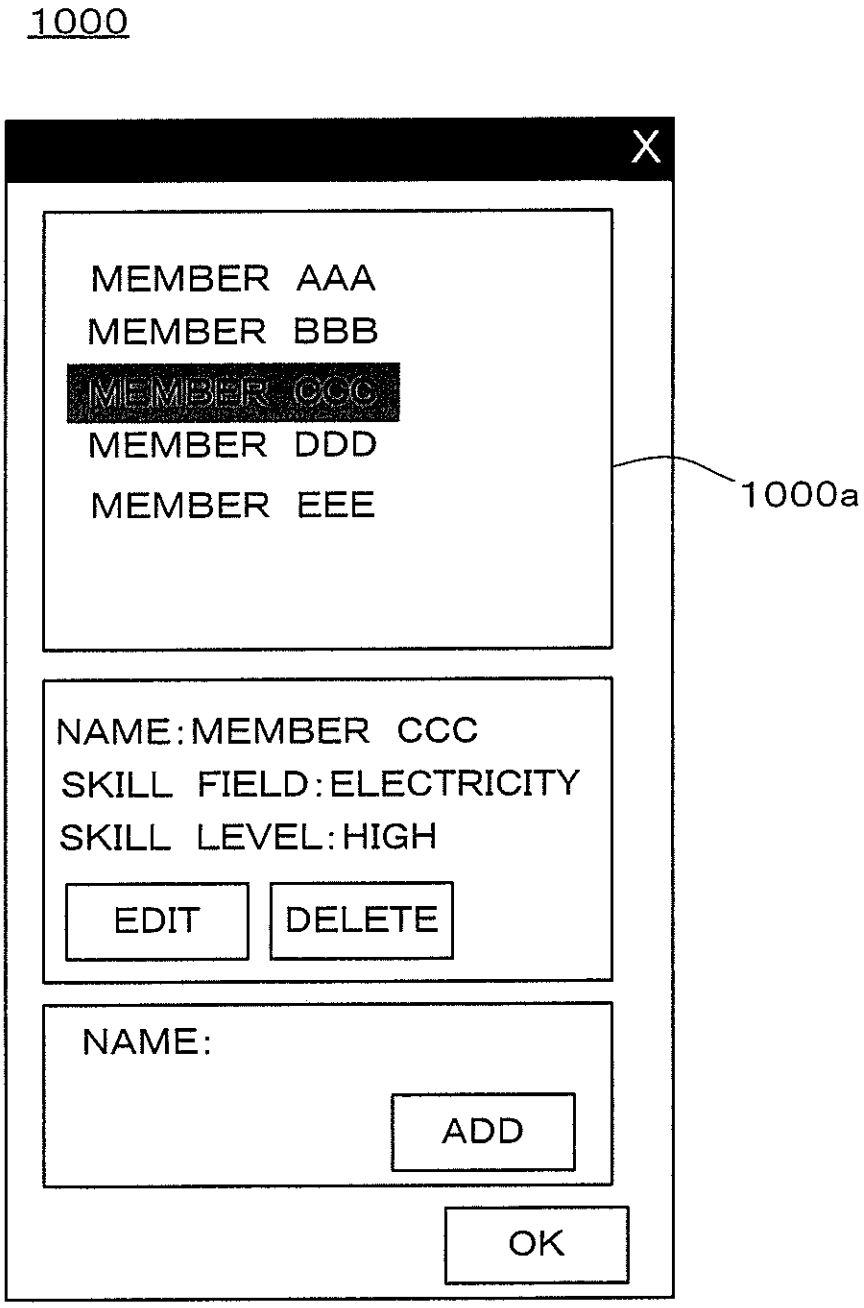

1000
X
MEMBER AAA
MEMBER BBB
MEMBER CCC
MEMBER DDD
MEMBER EEE
1000a
NAME:MEMBER CCC
SKILL FIELD:ELECTRICITY
SKILL LEVEL:HIGH
EDIT
DELETE
NAME:
ADD
OK

FIG. 38

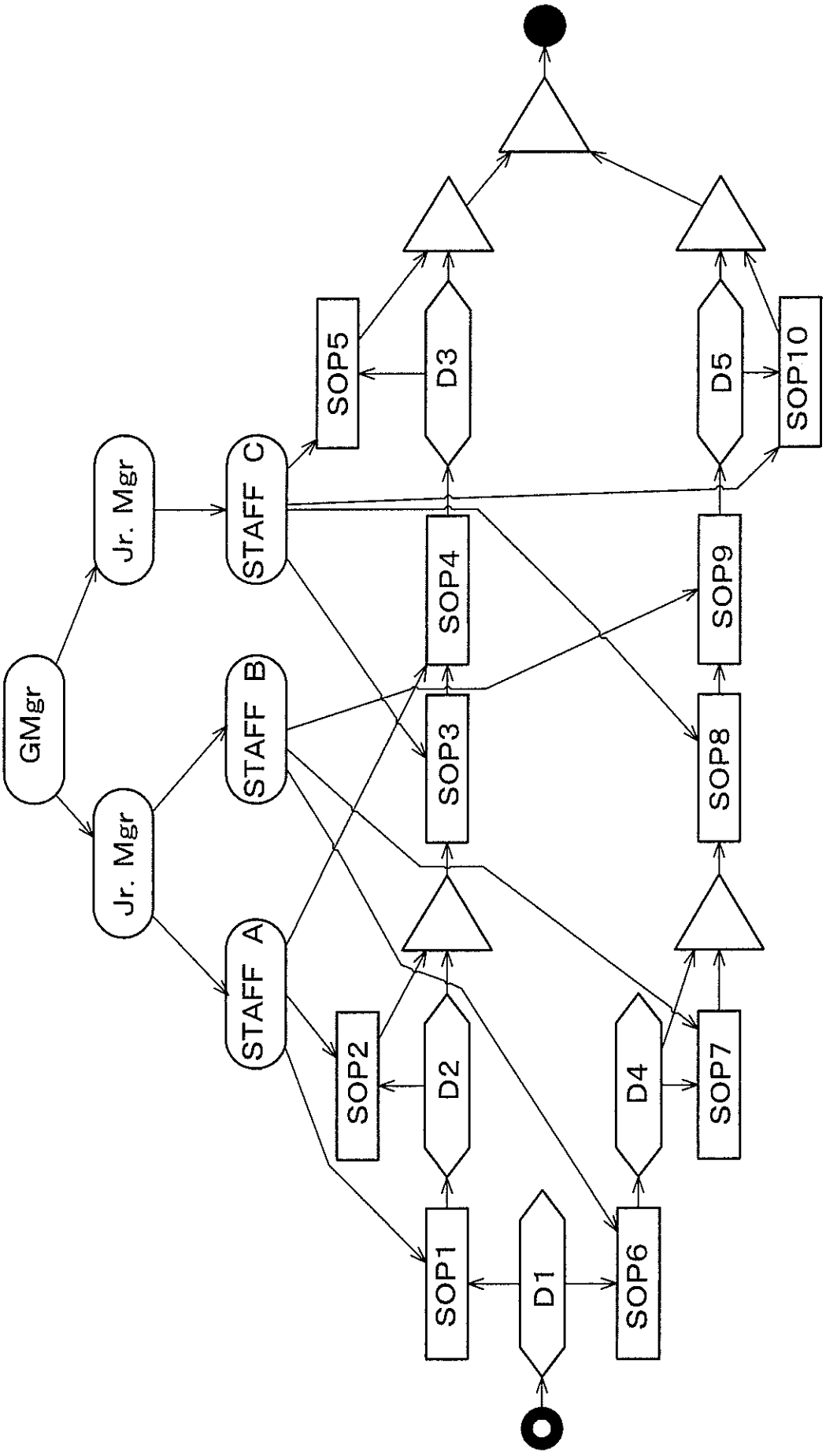

GMgr
Jr. Mgr
Jr. Mgr
STAFF A
STAFF B
STAFF C
SOP1
SOP2
SOP3
SOP4
SOP5
SOP6
SOP7
SOP8
SOP9
SOP10
D1
D2
D3
D4
D5

FIG. 39

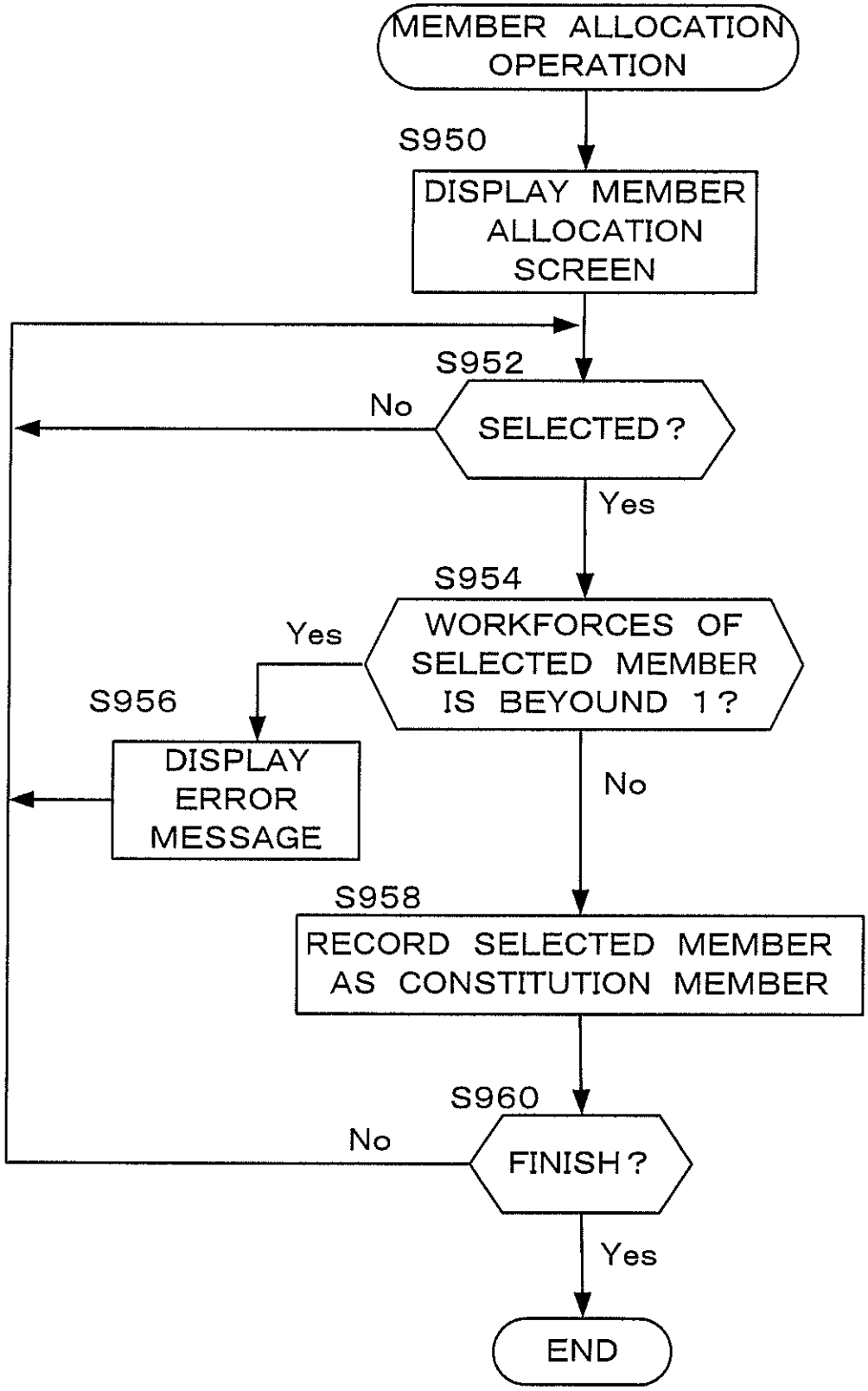
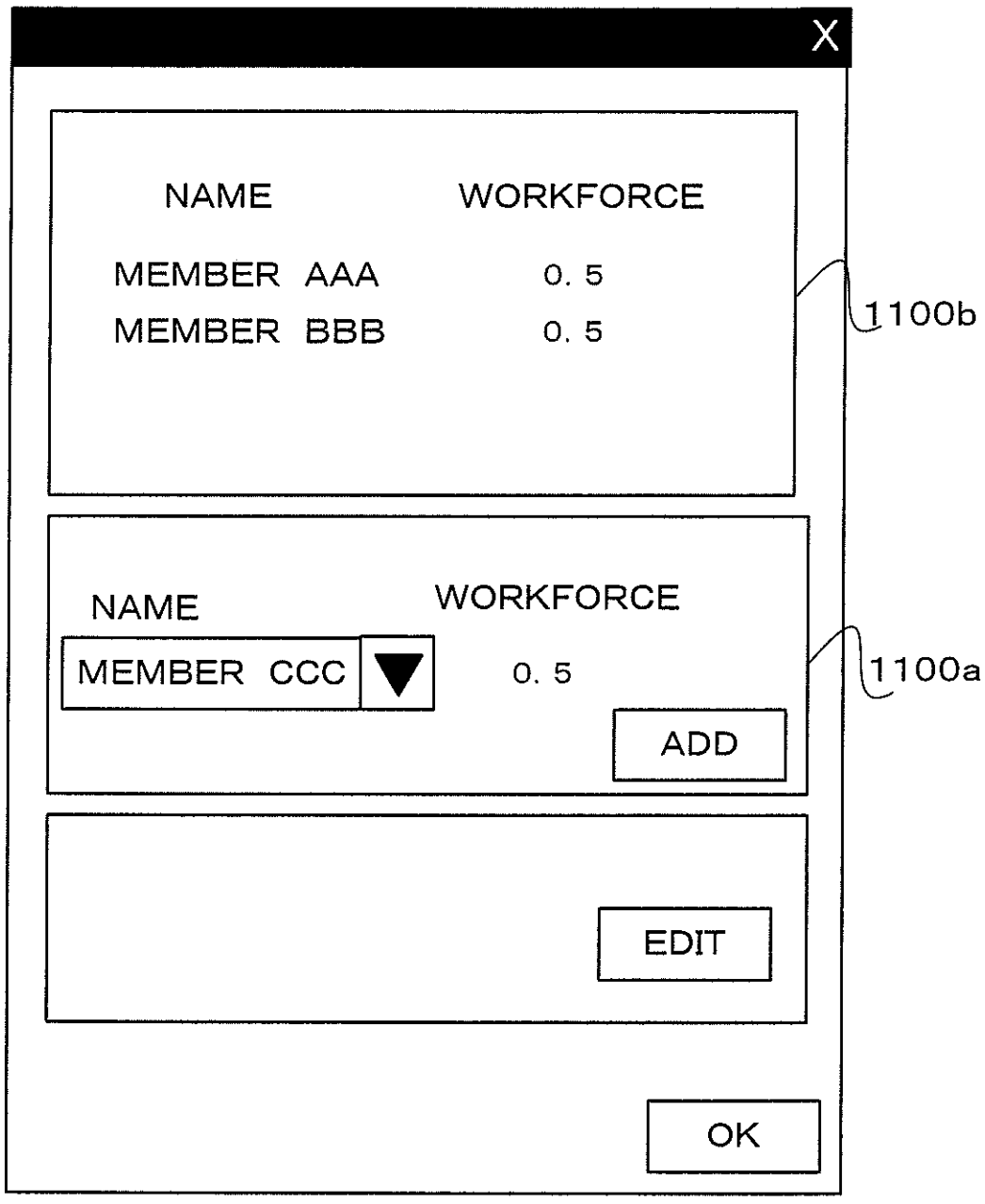

MEMBER ALLOCATION OPERATION
S950
DISPLAY MEMBER ALLOCATION SCREEN
S952
No
SELECTED?
Yes
S954
Yes
WORKFORCES OF SELECTED MEMBER IS BEYOUND 1?
S956
DISPLAY ERROR MESSAGE
No
S958
RECORD SELECTED MEMBER AS CONSTITUTION MEMBER
S960
No
FINISH?
Yes
END

FIG. 40


1100
X
NAME
WORKFORCE
MEMBER AAA
0. 5
MEMBER BBB
0. 5
1100b
NAME
WORKFORCE
MEMBER CCC
0. 5
ADD
1100a
EDIT
OK