FIG. 1

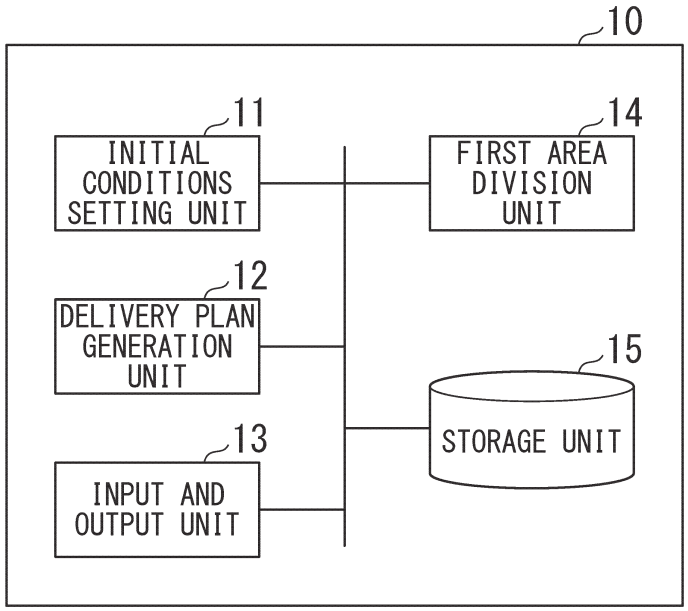

10
11
INITIAL CONDITIONS SETTING UNIT
14
FIRST AREA DIVISION UNIT
12
DELIVERY PLAN GENERATION UNIT
15
STORAGE UNIT
13
INPUT AND OUTPUT UNIT

FIG. 2

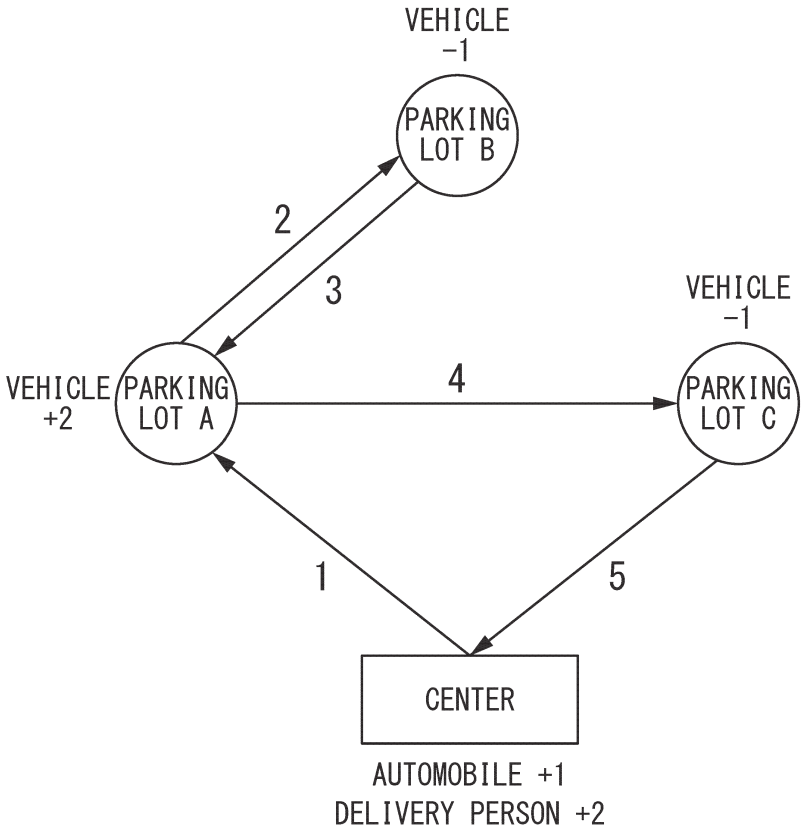

VEHICLE -1
PARKING LOT B
2
3
VEHICLE -1
VEHICLE +2
PARKING LOT A
4
PARKING LOT C
1
5
CENTER
AUTOMOBILE +1
DELIVERY PERSON +2

FIG. 3

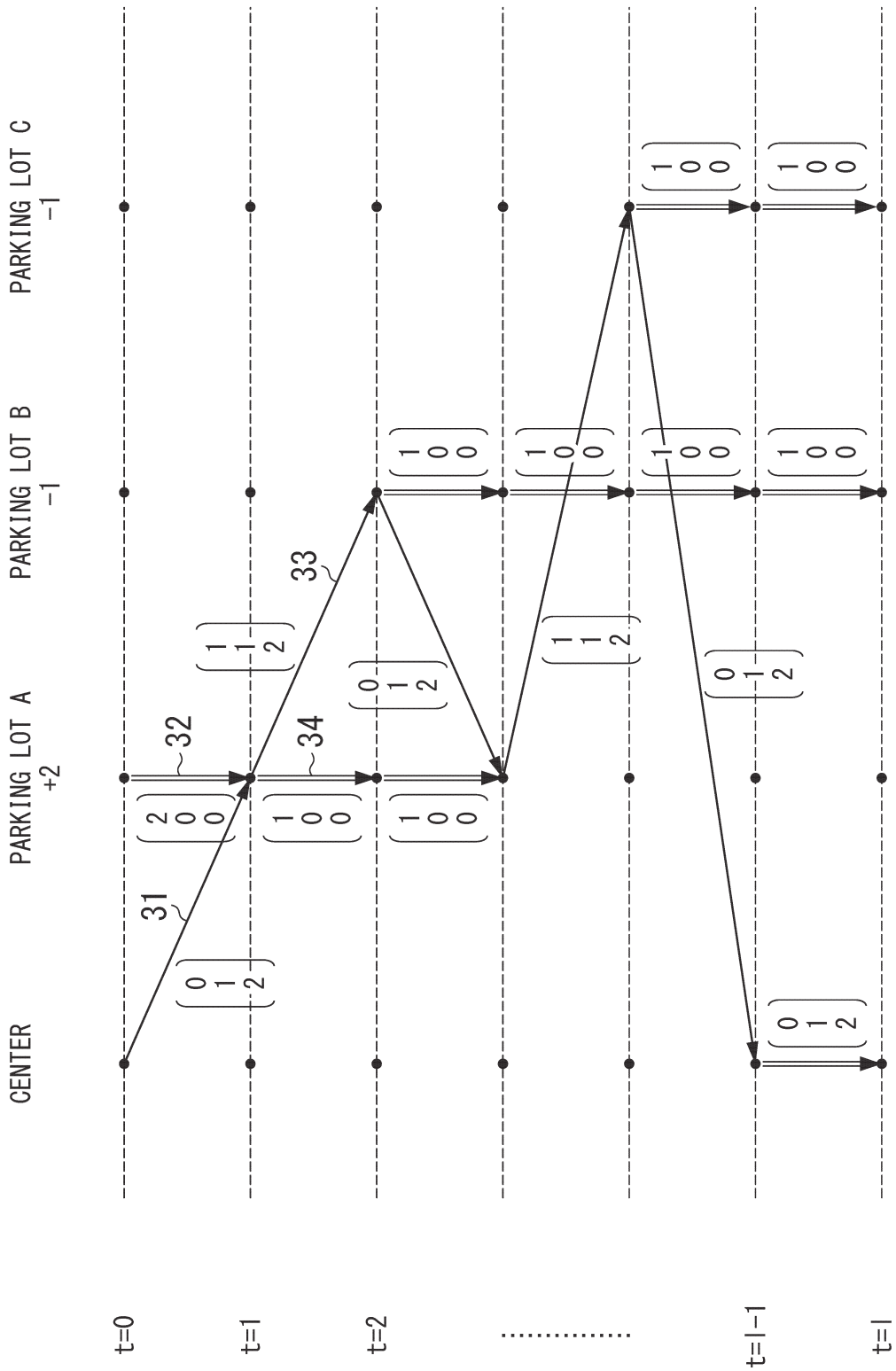

CENTER
PARKING LOT A
+2
PARKING LOT B
−1
PARKING LOT C
−1
t=0
t=1
t=2
t=l−1
t=l
31
32
33
34

FIG. 4

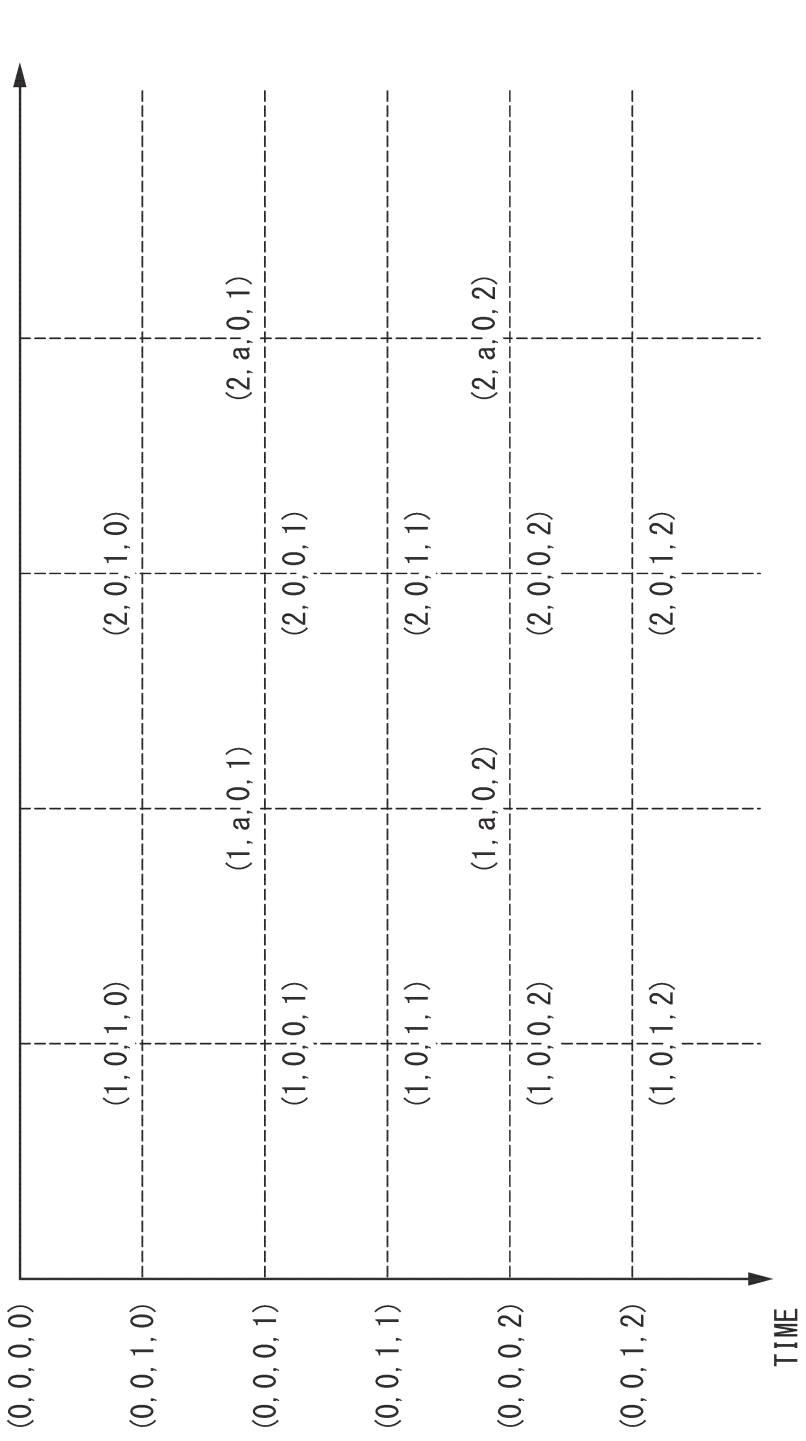

PLACE
TIME
(1, 0, 0, 0)
(1, a, 0, 0)
(2, 0, 0, 0)
(2, a, 0, 0)
(1, 0, 1, 0)
(2, 0, 1, 0)
(1, a, 0, 1)
(2, a, 0, 1)
(1, 0, 0, 1)
(2, 0, 0, 1)
(1, 0, 1, 1)
(2, 0, 1, 1)
(1, a, 0, 2)
(2, a, 0, 2)
(1, 0, 0, 2)
(2, 0, 0, 2)
(1, 0, 1, 2)
(2, 0, 1, 2)
(0, 0, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
(0, 0, 1, 1)
(0, 0, 0, 2)
(0, 0, 1, 2)

FIG. 5

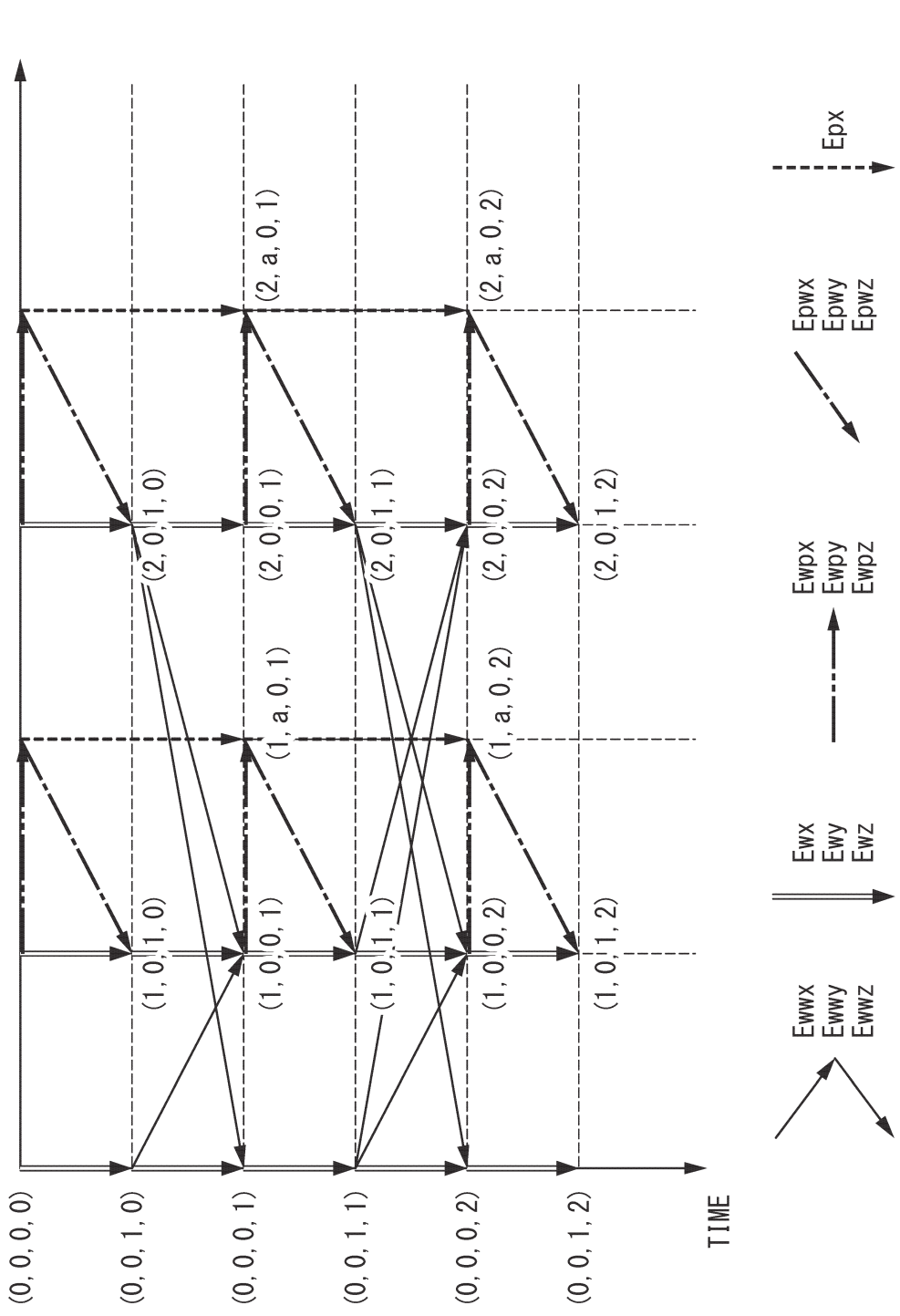

PLACE
(1, 0, 0, 0)
(1, a, 0, 0)
(2, 0, 0, 0)
(2, a, 0, 0)
(1, 0, 1, 0)
(2, 0, 1, 0)
(1, 0, 0, 1)
(1, a, 0, 1)
(2, 0, 0, 1)
(2, a, 0, 1)
(1, 0, 1, 1)
(2, 0, 1, 1)
(1, 0, 0, 2)
(1, a, 0, 2)
(2, 0, 0, 2)
(2, a, 0, 2)
(1, 0, 1, 2)
(2, 0, 1, 2)
(0, 0, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
(0, 0, 1, 1)
(0, 0, 0, 2)
(0, 0, 1, 2)
TIME
Epx
Epwx
Epwy
Epwz
Ewpx
Ewpy
Ewpz
Ewx
Ewy
Ewz
Ewwx
Ewwy
Ewwz

FIG. 6

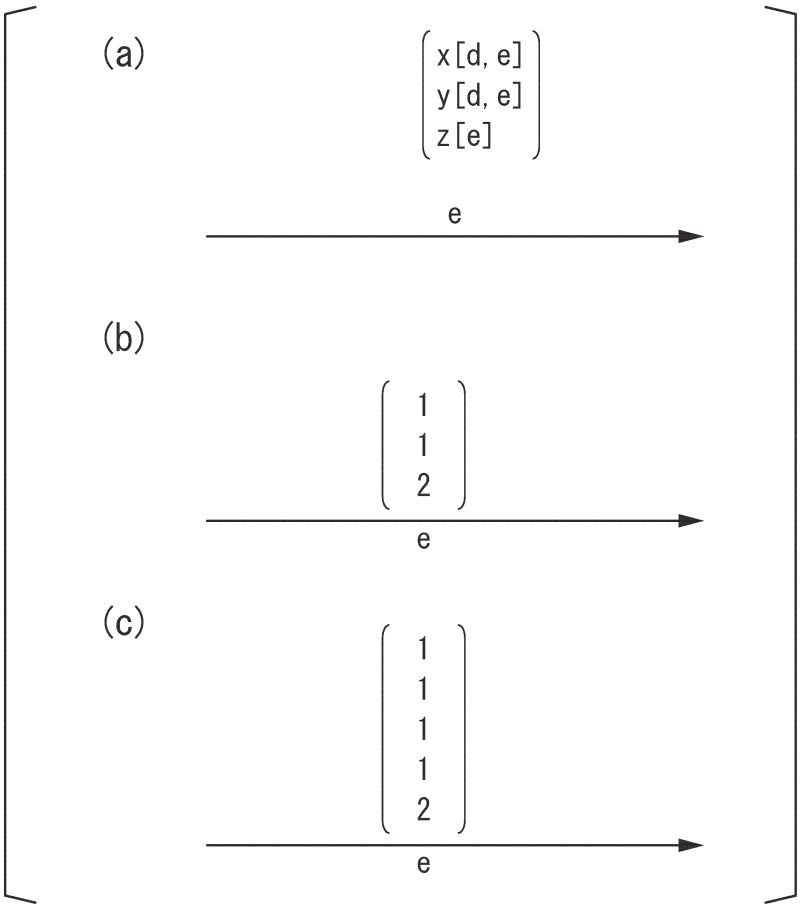


FIG. 7

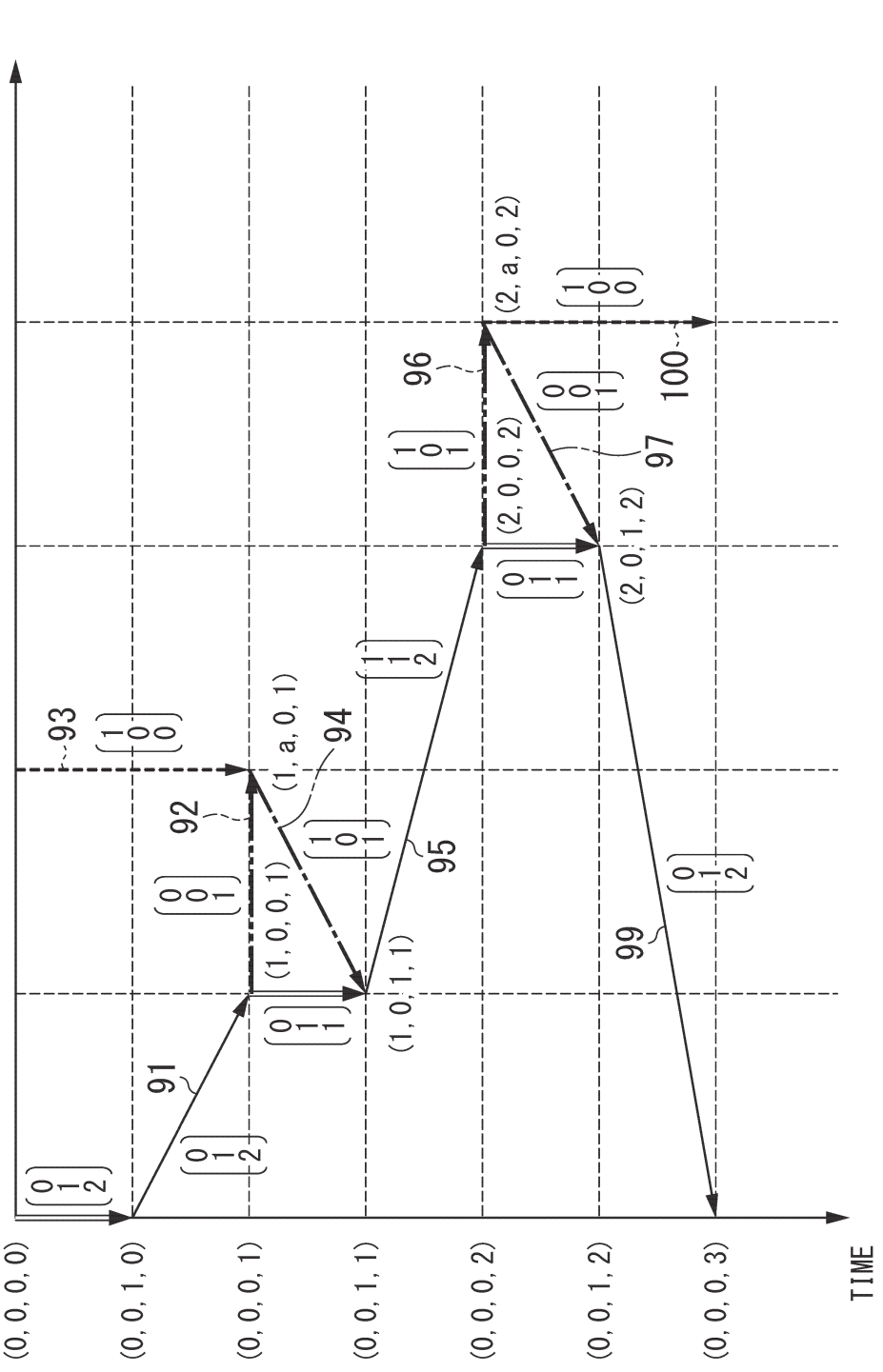

PLACE
(1, 0, 0, 0)
(1, a, 0, 0)
(2, 0, 0, 0)
(2, a, 0, 0)
(0, 0, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
(0, 0, 1, 1)
(0, 0, 0, 2)
(0, 0, 1, 2)
(0, 0, 0, 3)
TIME
91
92
93
94
95
96
97
99
100
(1, 0, 0, 1)
(1, a, 0, 1)
(1, 0, 1, 1)
(2, 0, 0, 2)
(2, a, 0, 2)
(2, 0, 1, 2)

FIG. 8

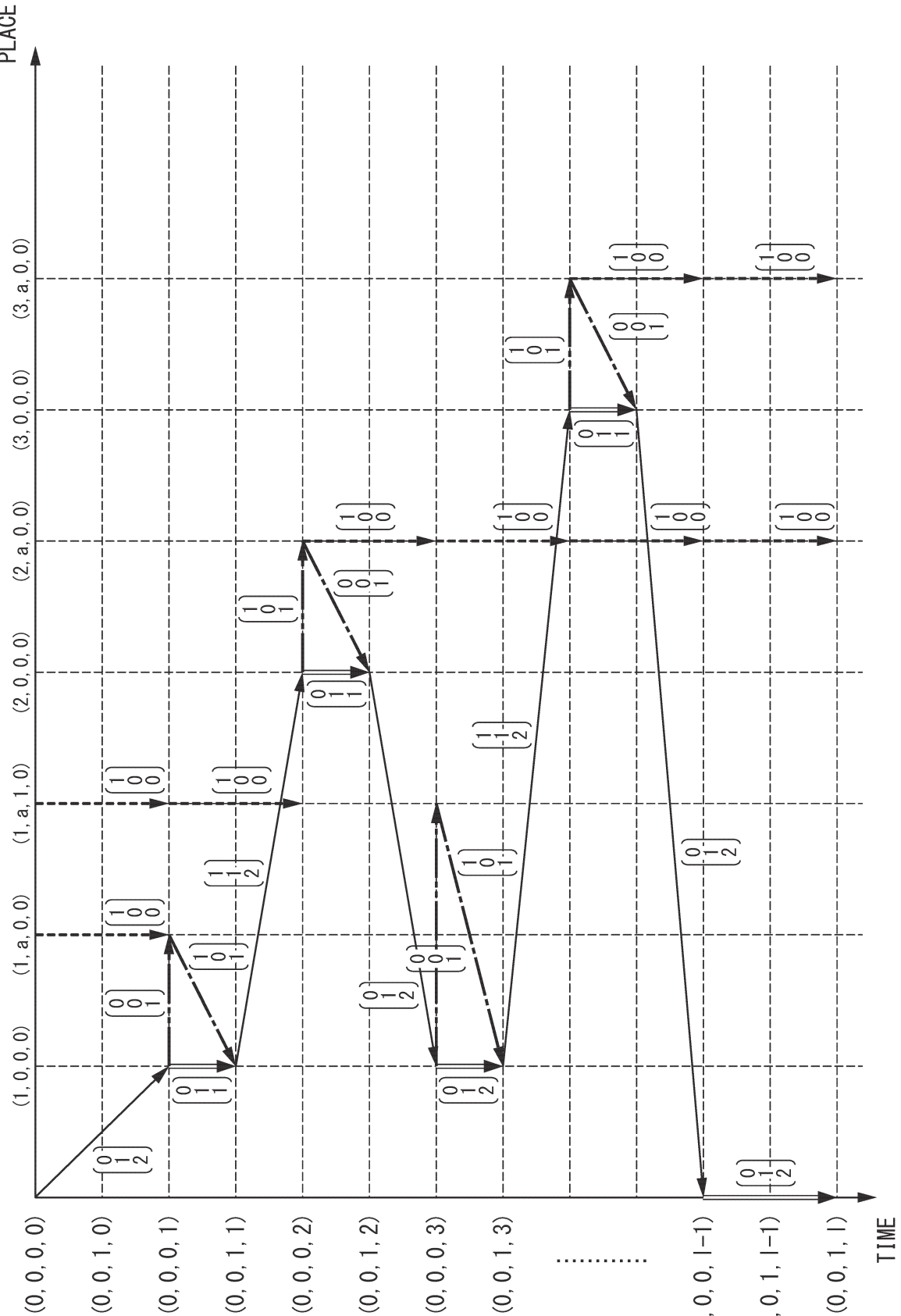

CENTER
PARKING LOT A
PARKING LOT B
PARKING LOT C
PLACE
TIME
(1, 0, 0, 0)
(1, a, 0, 0)
(1, a, 1, 0)
(2, 0, 0, 0)
(2, a, 0, 0)
(3, 0, 0, 0)
(3, a, 0, 0)
(0, 0, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
(0, 0, 1, 1)
(0, 0, 0, 2)
(0, 0, 1, 2)
(0, 0, 0, 3)
(0, 0, 1, 3)
(0, 0, 0, l−1)
(0, 0, 1, l−1)
(0, 0, 1, l)

FIG. 9

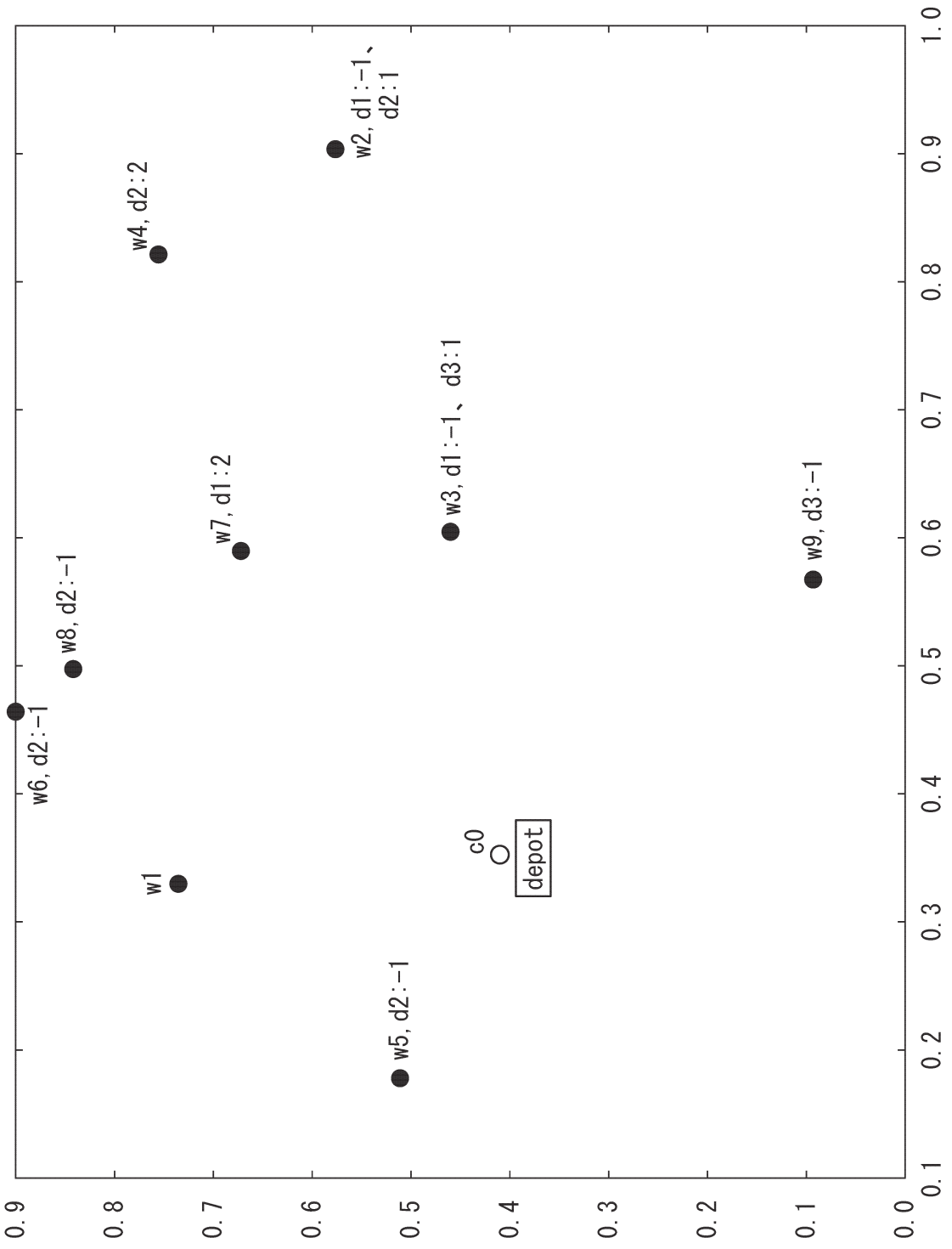

w6, d2:−1
w8, d2:−1
w1
w5, d2:−1
c0
depot
w7, d1:2
w3, d1:−1、d3:1
w4, d2:2
w2, d1:−1、
d2:1
w9, d3:−1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIG. 10

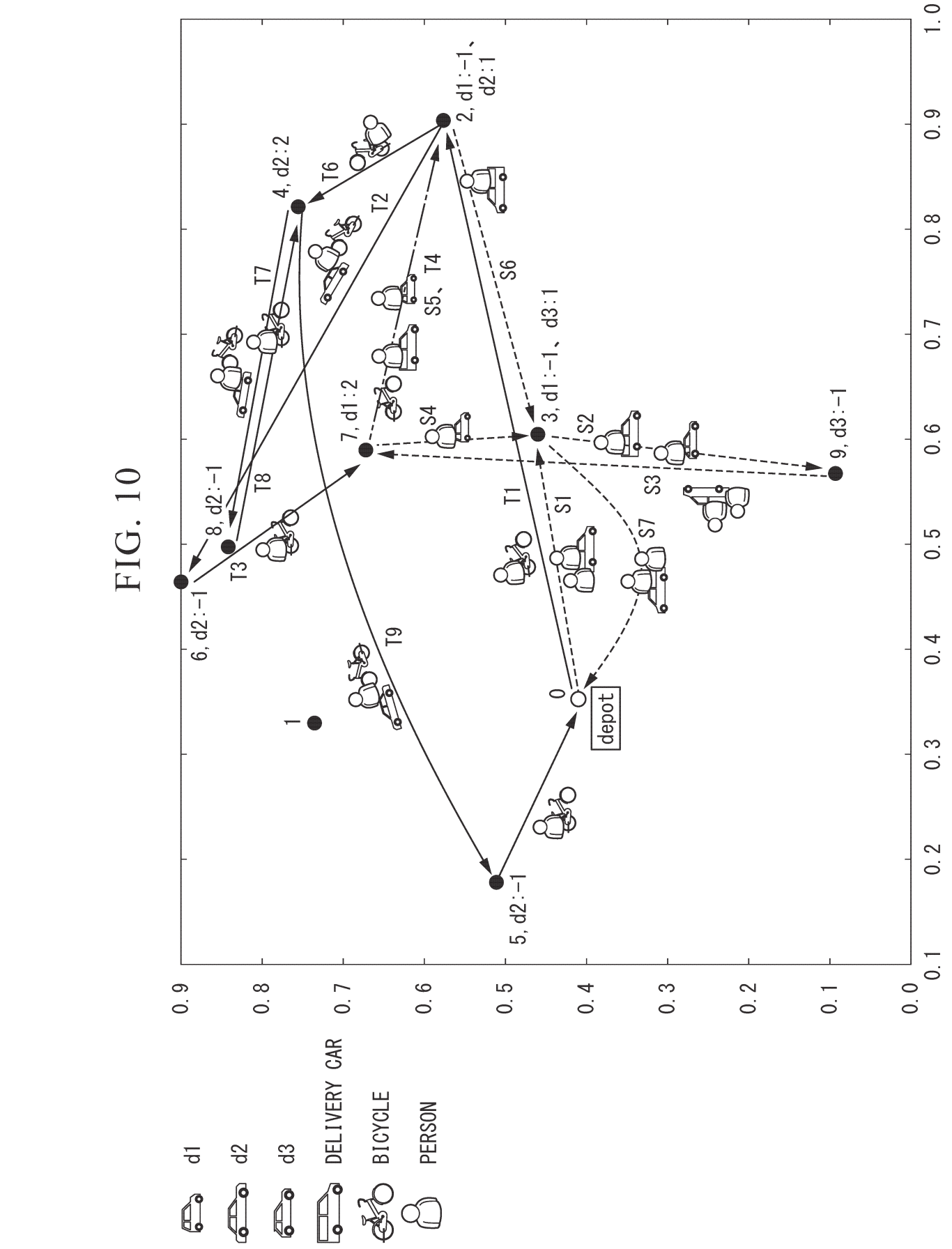

d1
d2
d3
DELIVERY CAR
BICYCLE
PERSON
depot
0
1
2, d1:−1、d2:1
3, d1:−1、d3:1
4, d2:2
5, d2:−1
6, d2:−1
7, d1:2
8, d2:−1
9, d3:−1
T1
T2
T3
T4
T6
T7
T8
T9
S1
S2
S3
S4
S5、T4
S6
S7
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIG. 11

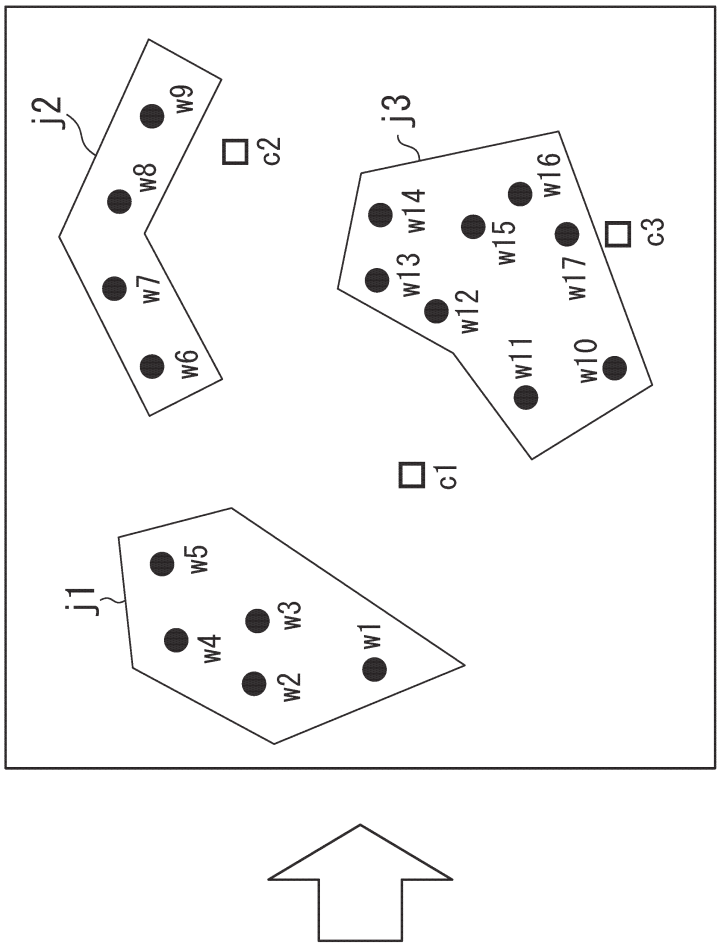

j1
j2
j3
w1
w2
w3
w4
w5
w6
w7
w8
w9
w10
w11
w12
w13
w14
w15
w16
w17
c1
c2
c3
d1:+1
d1:−1
d2:+1
d2:−1

FIG. 12

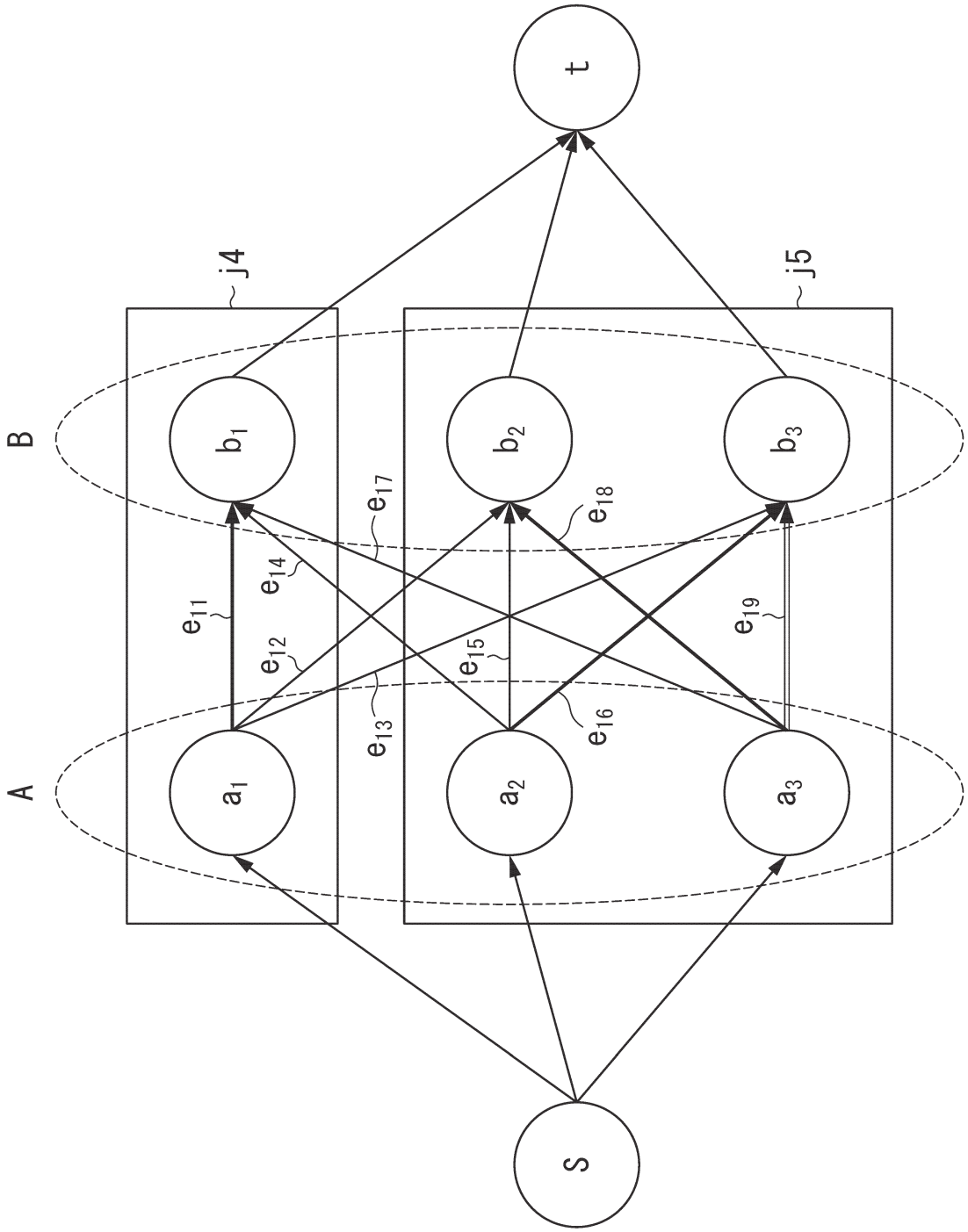


FIG. 13

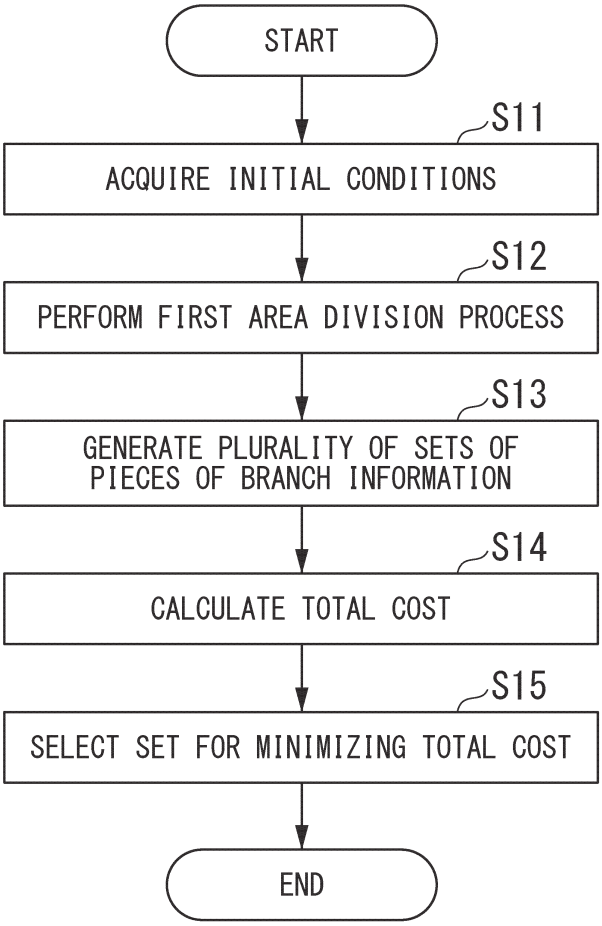

START
S11
ACQUIRE INITIAL CONDITIONS
S12
PERFORM FIRST AREA DIVISION PROCESS
S13
GENERATE PLURALITY OF SETS OF PIECES OF BRANCH INFORMATION
S14
CALCULATE TOTAL COST
S15
SELECT SET FOR MINIMIZING TOTAL COST
END

FIG. 14

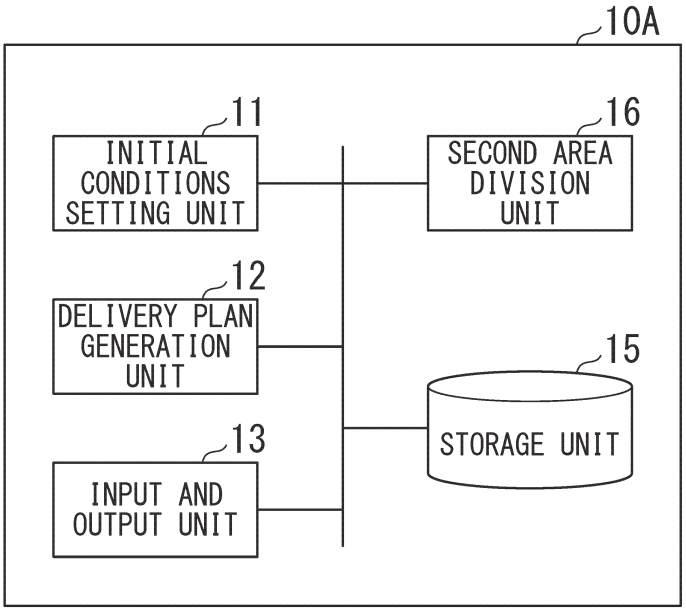

10A
11
INITIAL CONDITIONS SETTING UNIT
16
SECOND AREA DIVISION UNIT
12
DELIVERY PLAN GENERATION UNIT
15
STORAGE UNIT
13
INPUT AND OUTPUT UNIT

FIG. 15

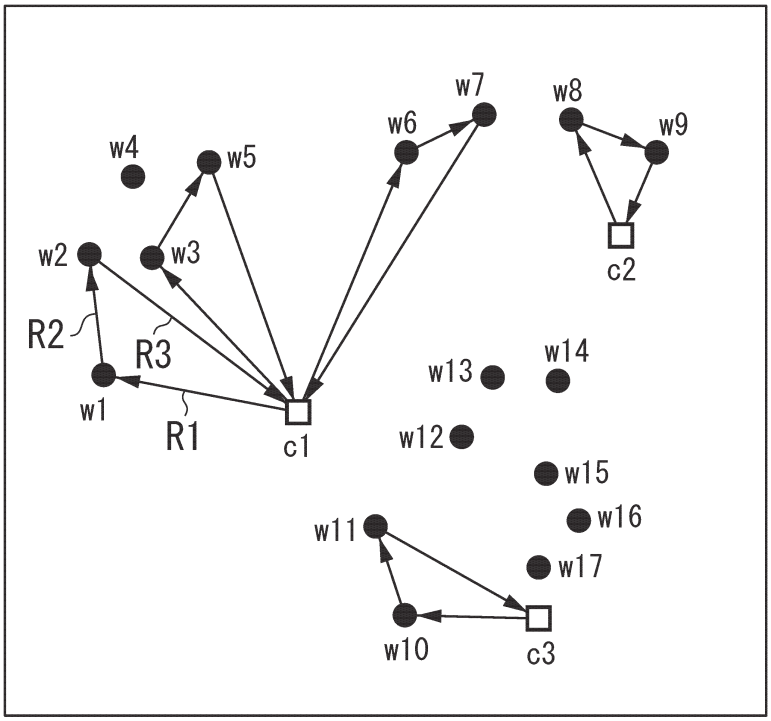


FIG. 16

ROUTE					COST
c1→w1	w1→w2	w2→c1	—	—	1500
c1→w3	w3→w5	w5→c1	—	—	1800
c1→w6	w6→w7	w7→c1	—	—	2500
...	...	...	...	...	...
c2→w6	w6→w7	w7→c2	—	—	1500
...	...	...	...	...	...
c1→w1	w1→w2	w2→w4	w4→c1	—	2000
...	...	...	...	...	...
c1→w1	w1→w2	w2→w3	w3→w4	w4→c1	2200
...	...	...	...	...	...

FIG. 17

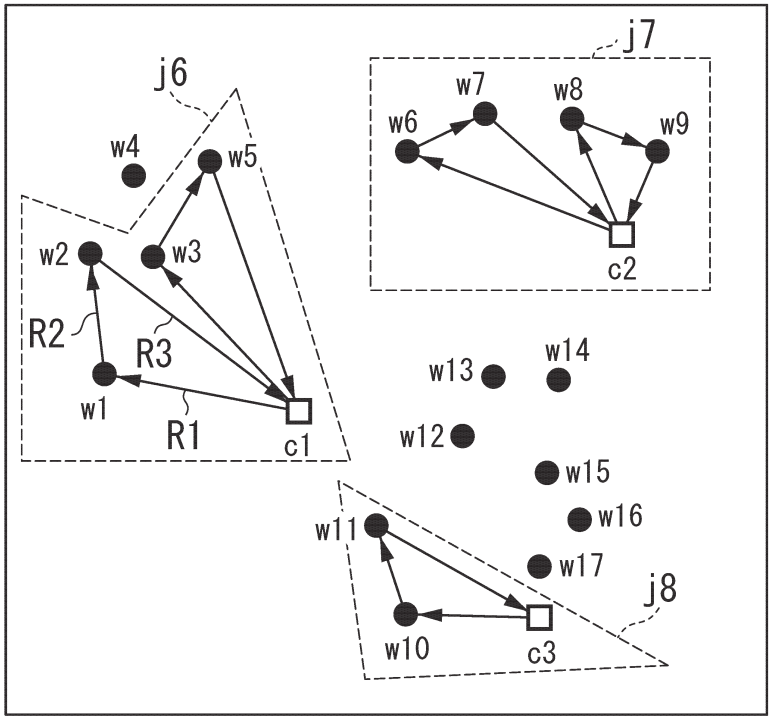

j7
j6
w7
w8
w6
w9
w4
w5
w2
w3
c2
R2
R3
w13
w14
w1
R1
c1
w12
w15
w16
w11
w17
j8
w10
c3

FIG. 18

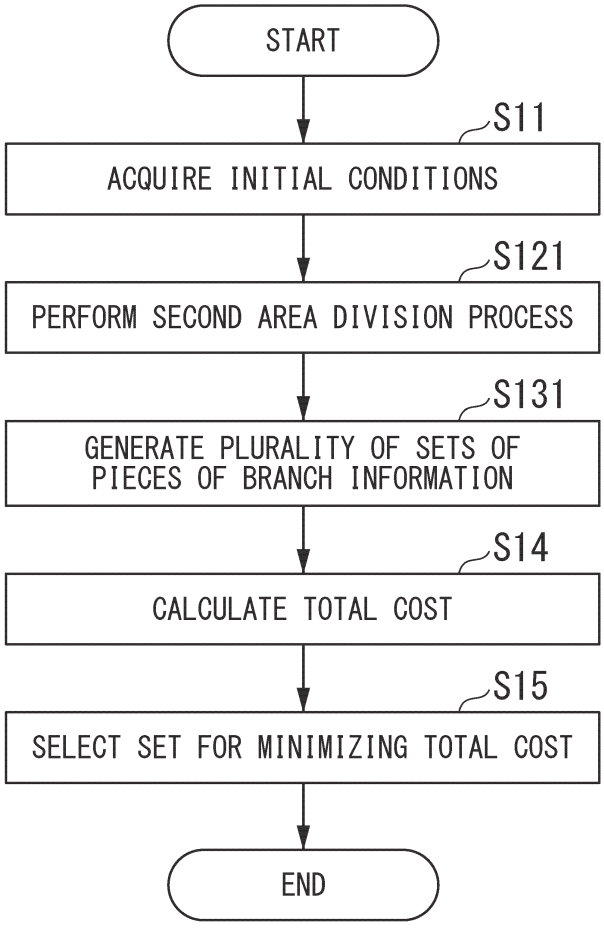

START
S11
ACQUIRE INITIAL CONDITIONS
S121
PERFORM SECOND AREA DIVISION PROCESS
S131
GENERATE PLURALITY OF SETS OF PIECES OF BRANCH INFORMATION
S14
CALCULATE TOTAL COST
S15
SELECT SET FOR MINIMIZING TOTAL COST
END

FIG. 19

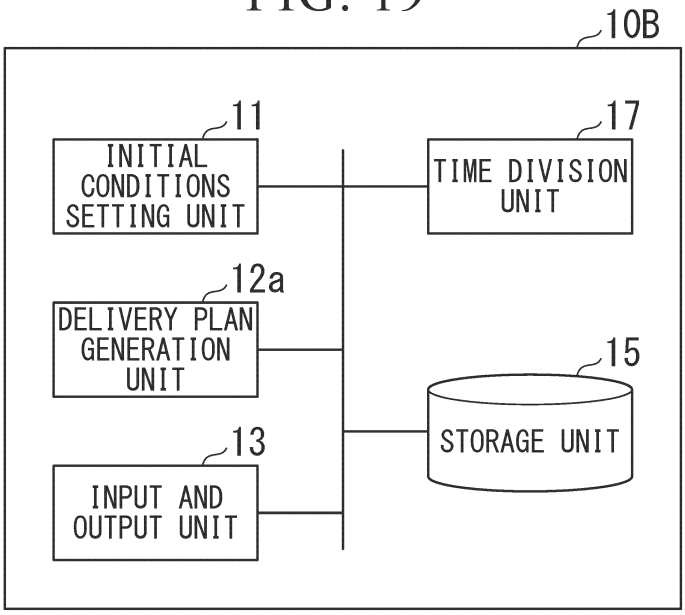

10B
11
INITIAL CONDITIONS SETTING UNIT
17
TIME DIVISION UNIT
12a
DELIVERY PLAN GENERATION UNIT
15
STORAGE UNIT
13
INPUT AND OUTPUT UNIT

FIG. 20

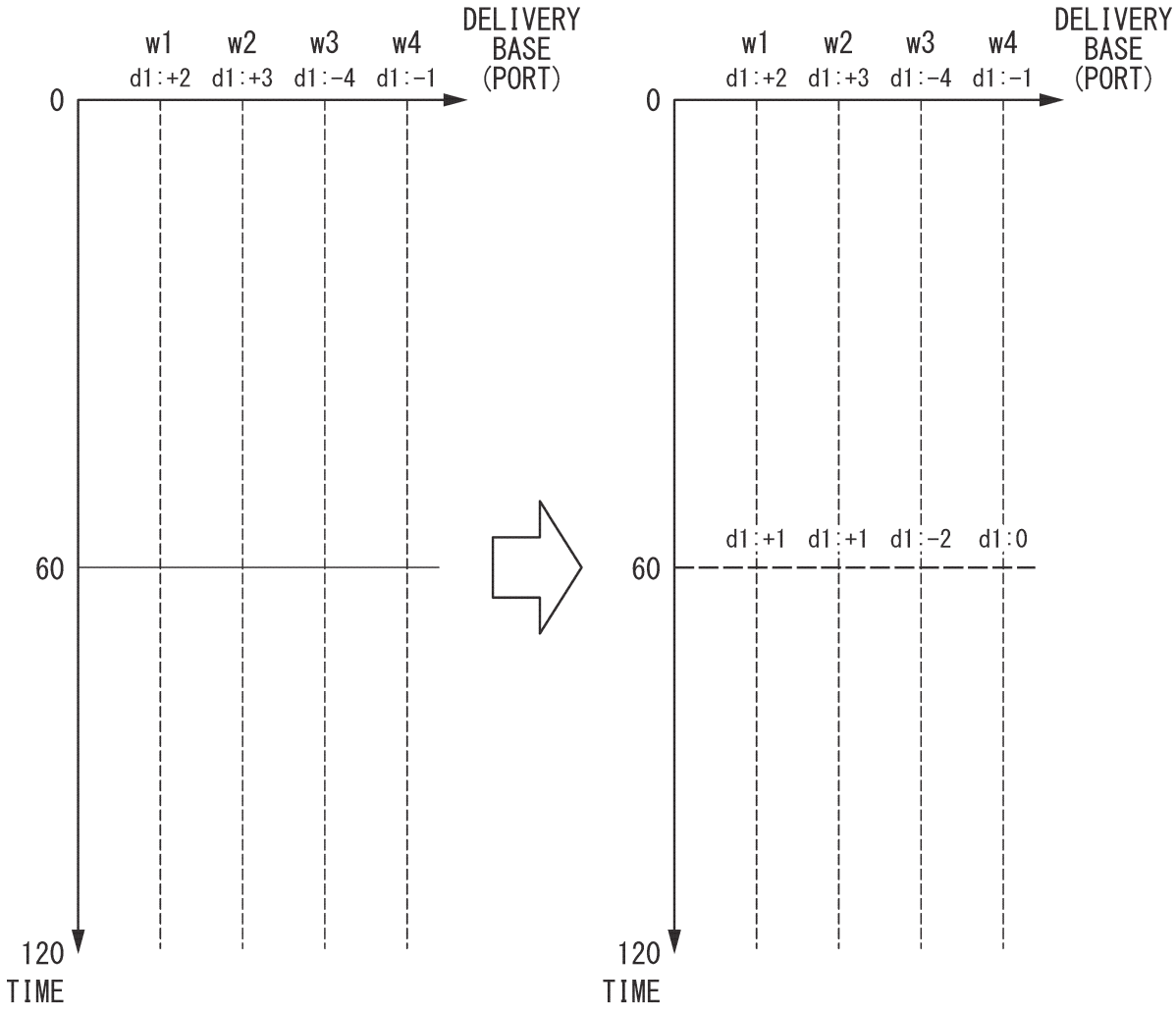

w1
w2
w3
w4
DELIVERY BASE (PORT)
d1:+2
d1:+3
d1:-4
d1:-1
0
60
120
TIME
d1:+1
d1:+1
d1:-2
d1:0

FIG. 21

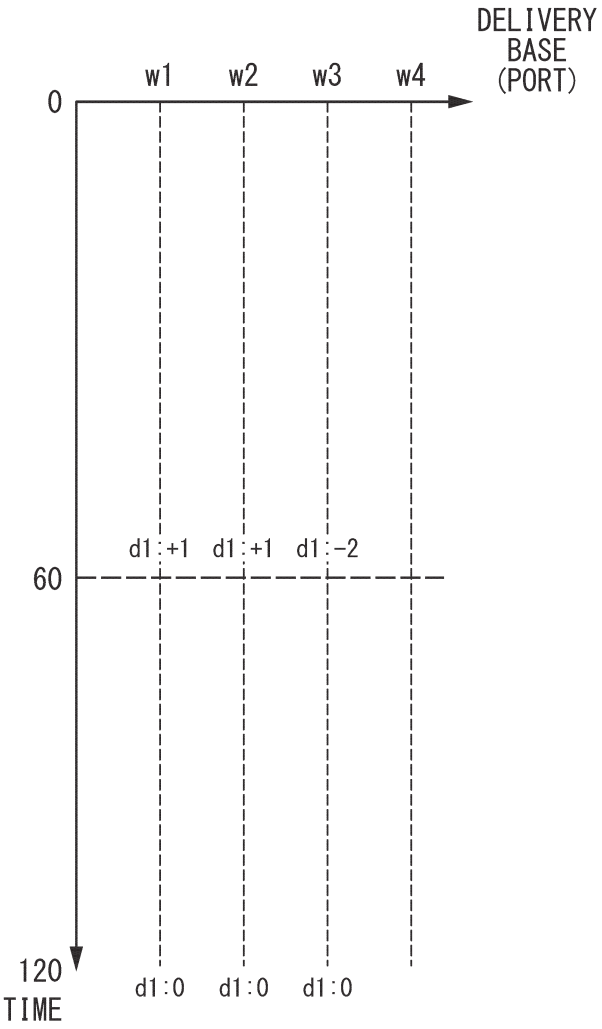
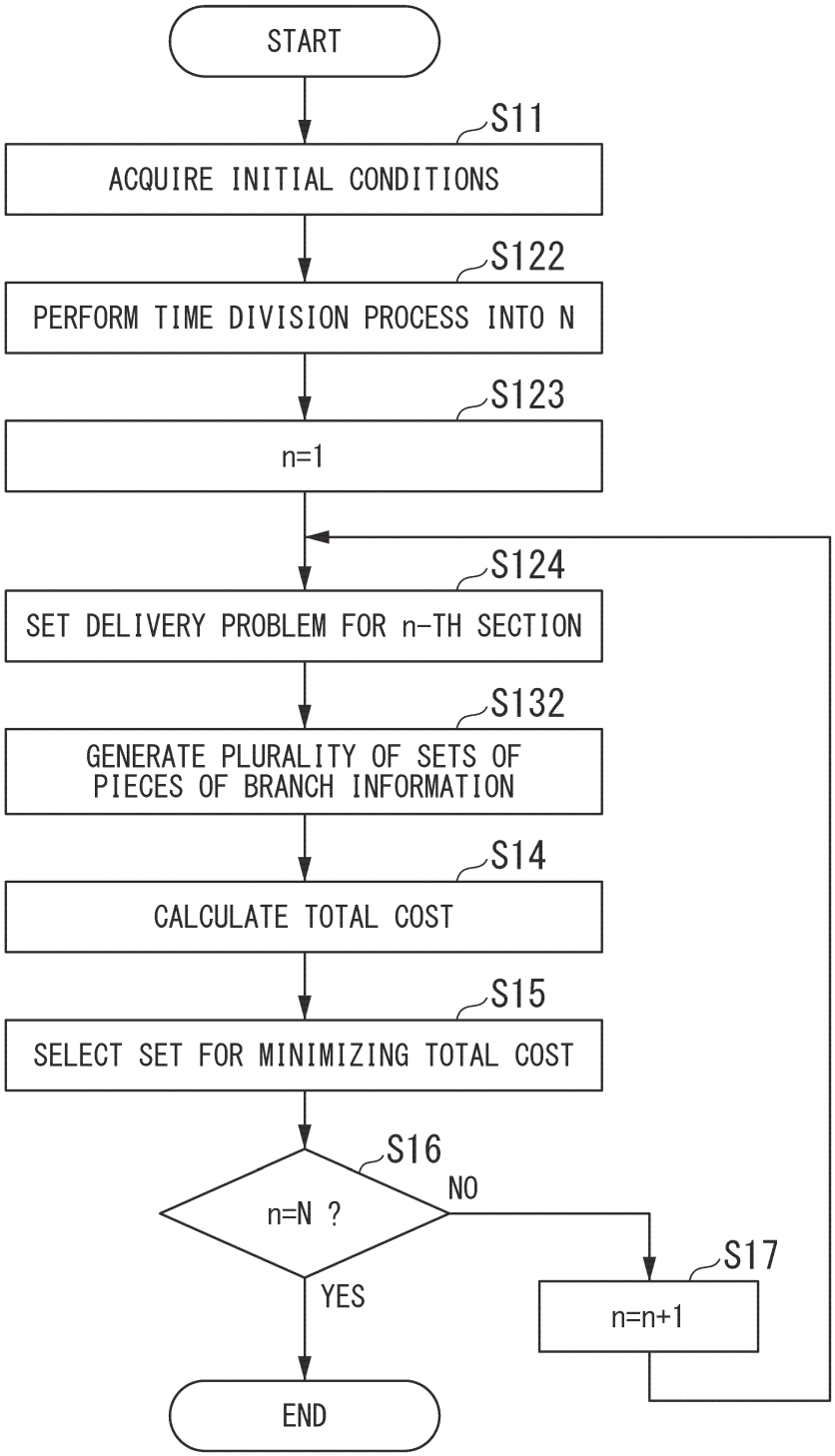

DELIVERY
BASE
(PORT)
w1
w2
w3
w4
0
d1:+1
d1:+1
d1:-2
60
120
TIME
d1:0
d1:0
d1:0

FIG. 22


START
S11
ACQUIRE INITIAL CONDITIONS
S122
PERFORM TIME DIVISION PROCESS INTO N
S123
n=1
S124
SET DELIVERY PROBLEM FOR n-TH SECTION
S132
GENERATE PLURALITY OF SETS OF PIECES OF BRANCH INFORMATION
S14
CALCULATE TOTAL COST
S15
SELECT SET FOR MINIMIZING TOTAL COST
S16
n=N ?
NO
YES
S17
n=n+1
END