FIG. 1

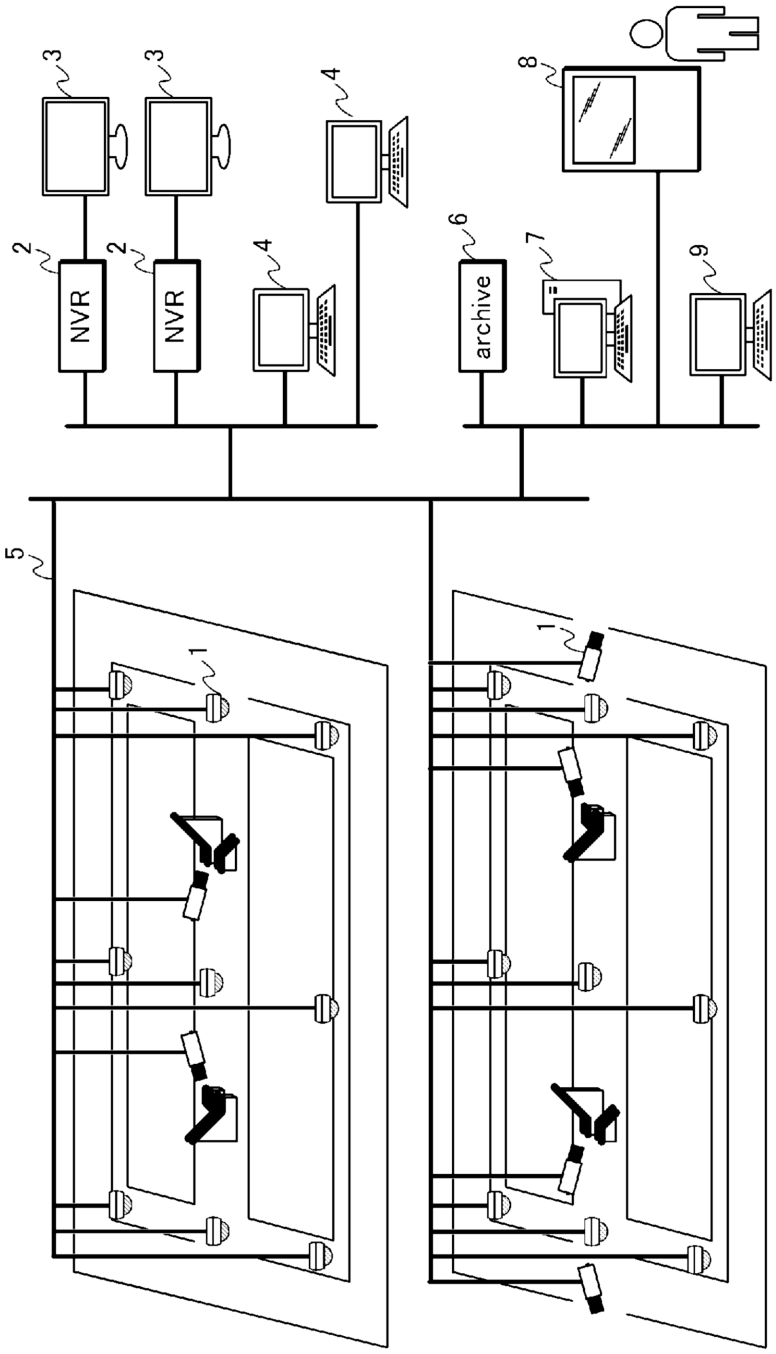


FIG. 2

NOW:16
SUM:127
18:01
18
High: Red
Middle: Yellow
Low: Green
21
25
21
23
24

FIG. 3

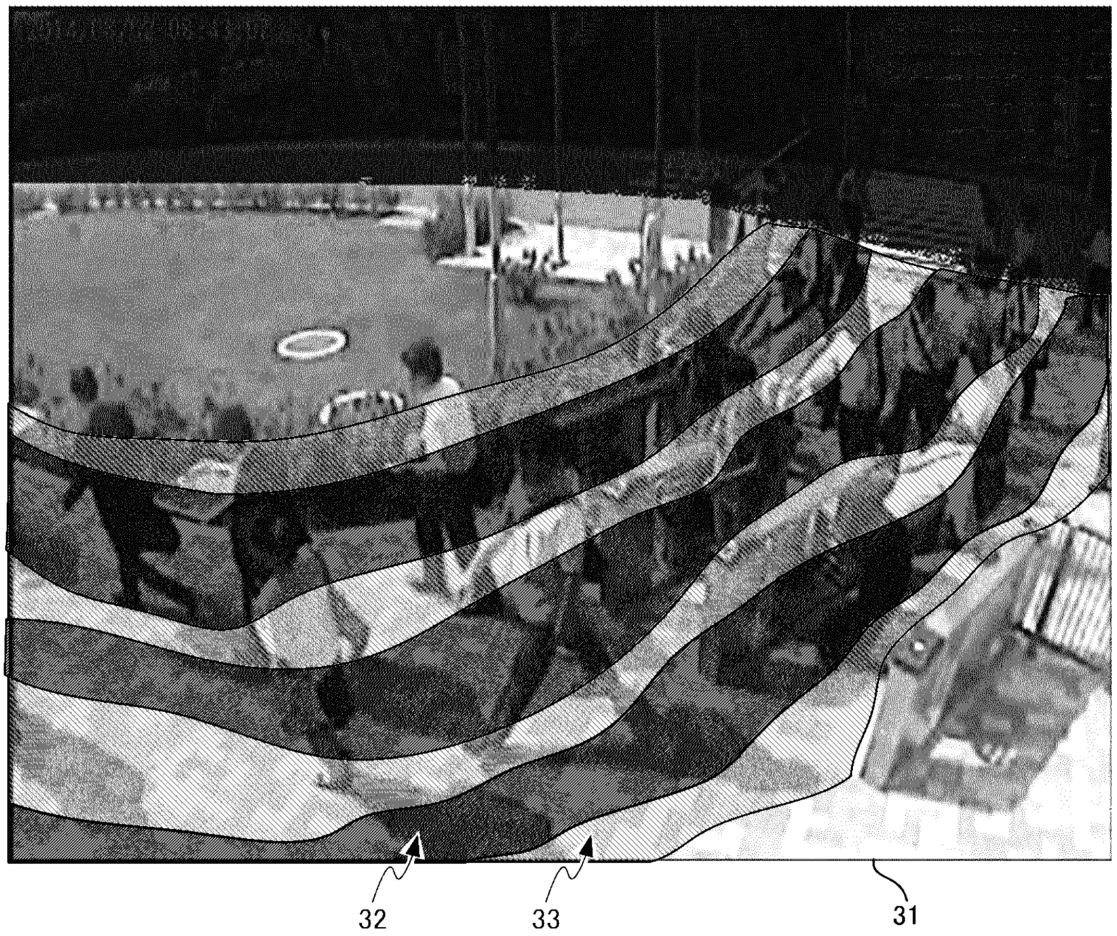


FIG. 4

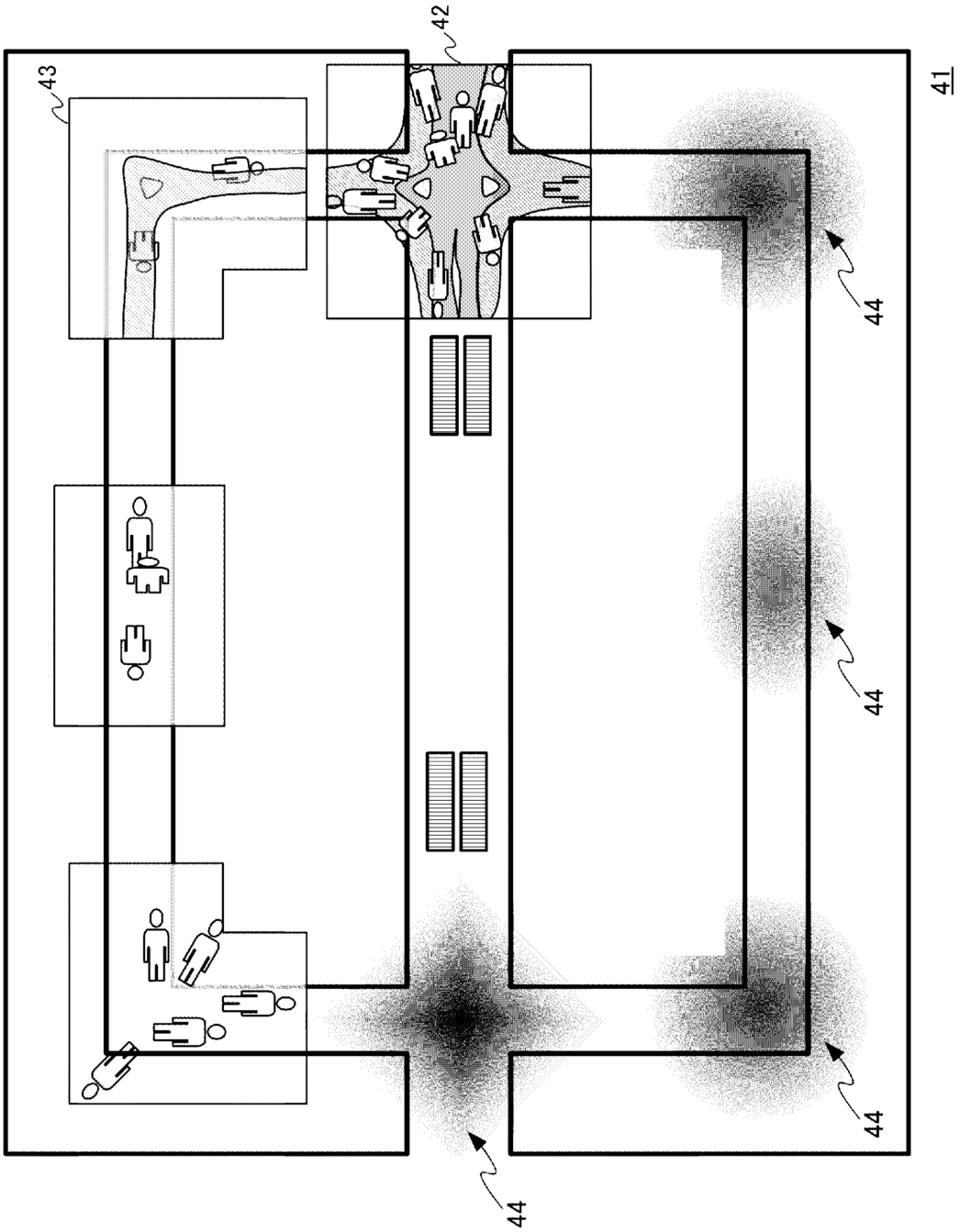


FIG. 5

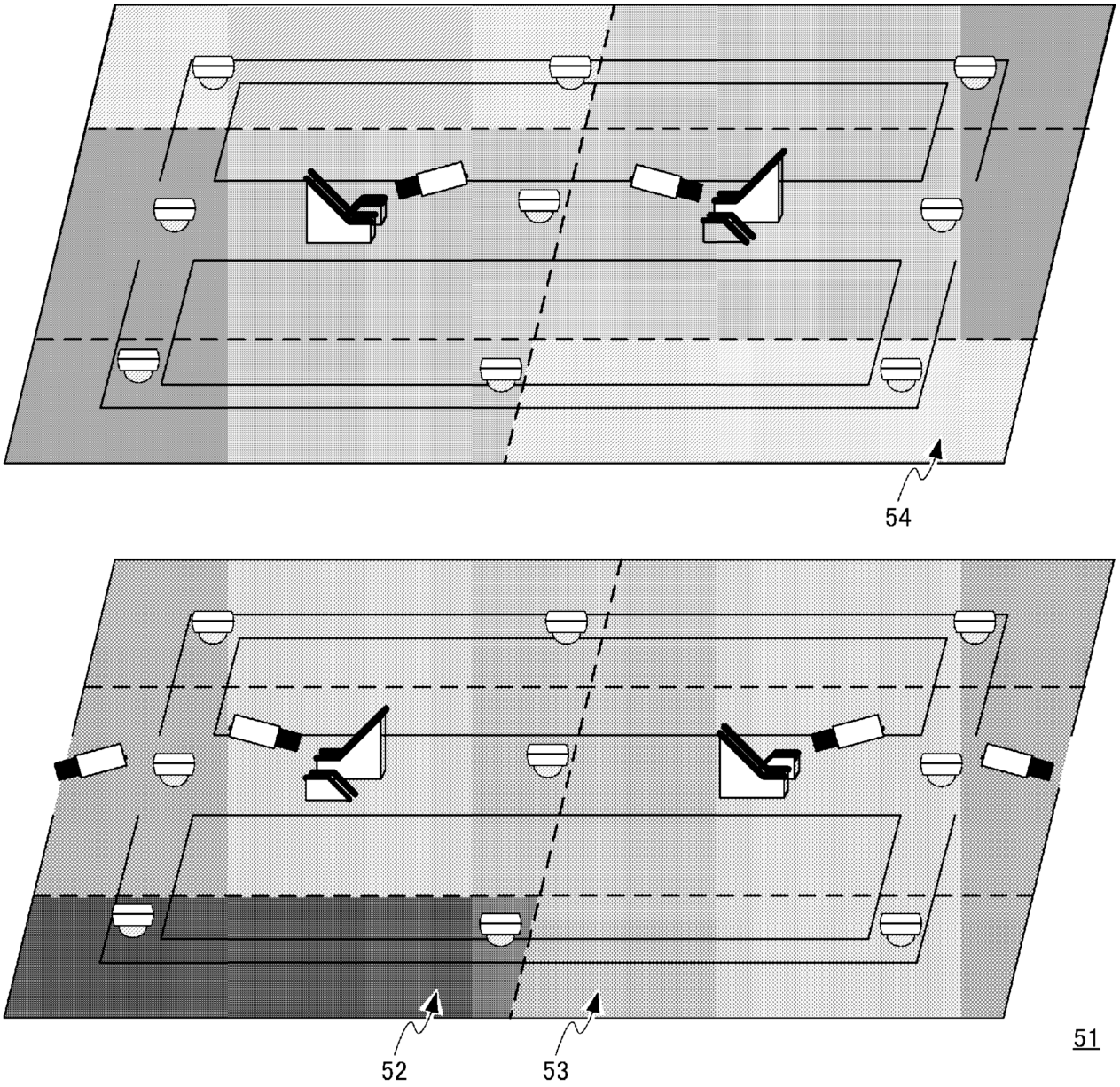


FIG. 6

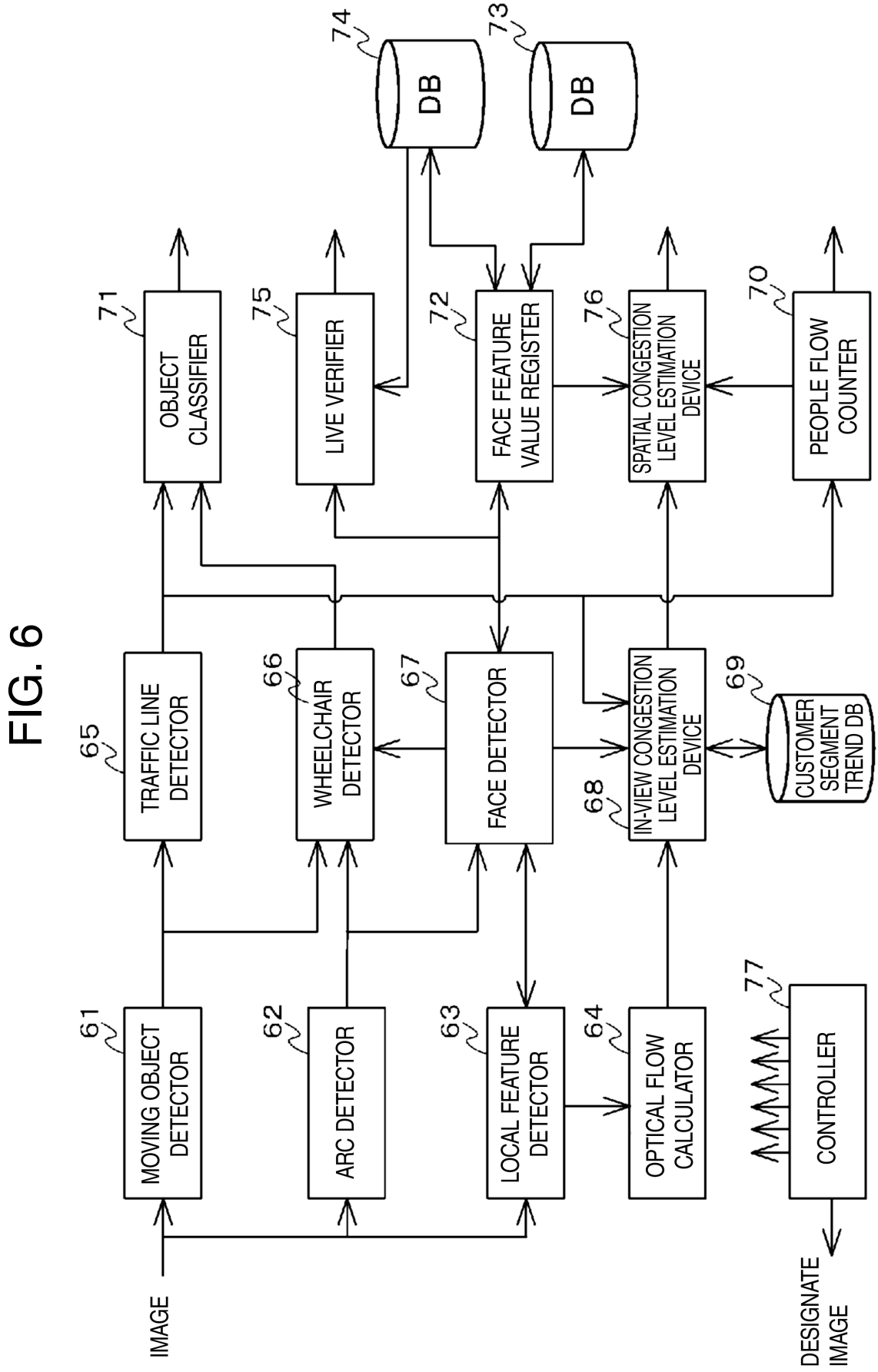


IMAGE
MOVING OBJECT DETECTOR
61
ARC DETECTOR
62
LOCAL FEATURE DETECTOR
63
OPTICAL FLOW CALCULATOR
64
CONTROLLER
77
DESIGNATE IMAGE
TRAFFIC LINE DETECTOR
65
WHEELCHAIR DETECTOR
66
FACE DETECTOR
67
IN-VIEW CONGESTION LEVEL ESTIMATION DEVICE
68
CUSTOMER SEGMENT TREND DB
69
PEOPLE FLOW COUNTER
70
OBJECT CLASSIFIER
71
FACE FEATURE VALUE REGISTER
72
DB
73
LIVE VERIFIER
75
SPATIAL CONGESTION LEVEL ESTIMATION DEVICE
76
DB
74

FIG. 7

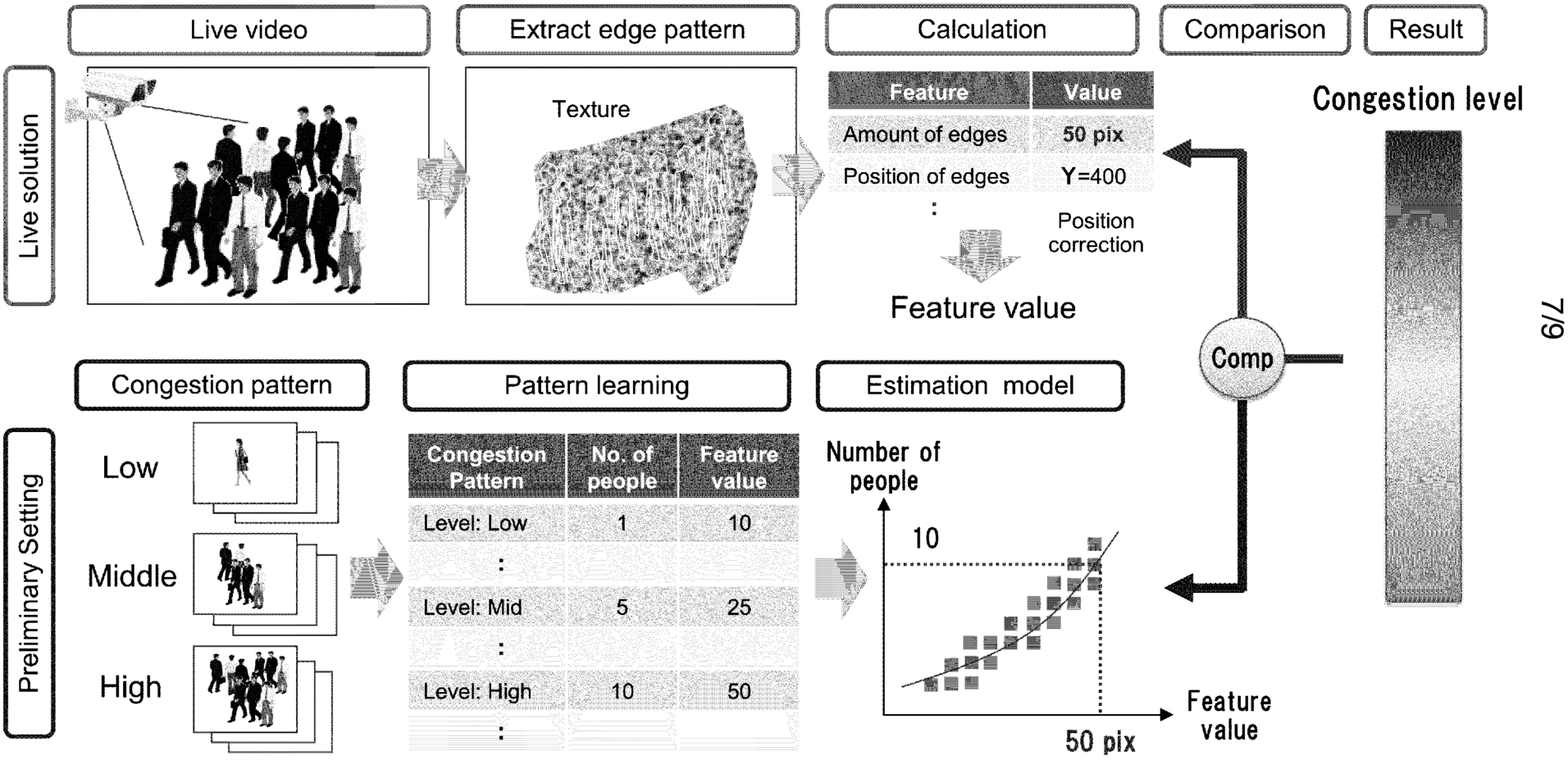

Live video
Extract edge pattern
Calculation
Comparison
Result
Live solution
Texture
Feature
Value
Amount of edges
50 pix
Position of edges
Y=400
:
Position correction
Feature value
Congestion level
Comp
Congestion pattern
Pattern learning
Estimation model
Preliminary Setting
Low
Middle
High
Congestion Pattern
No. of people
Feature value
Level: Low
1
10
:
Level: Mid
5
25
:
Level: High
10
50
:
Number of people
10
50 pix
Feature value

FIG. 8

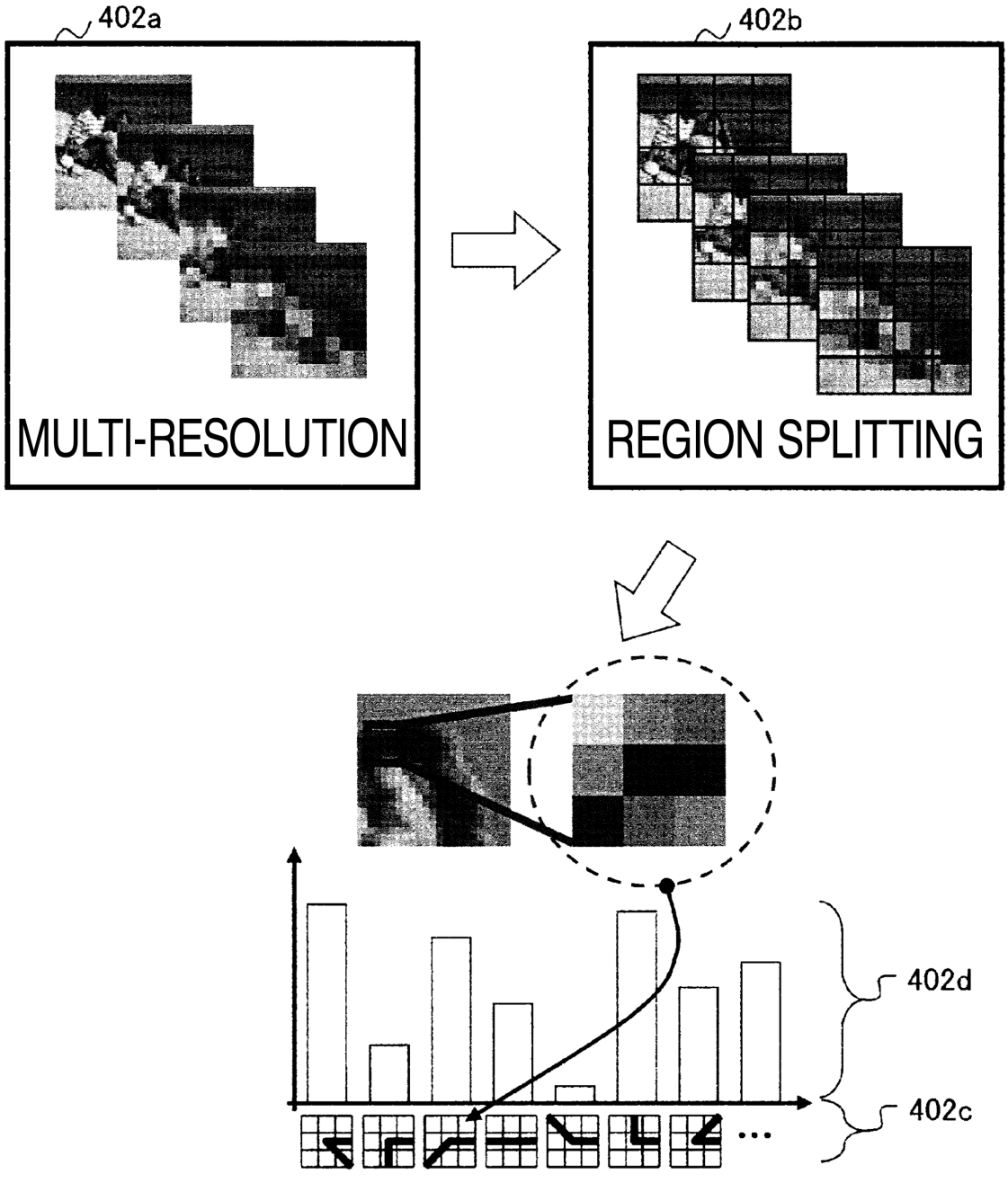
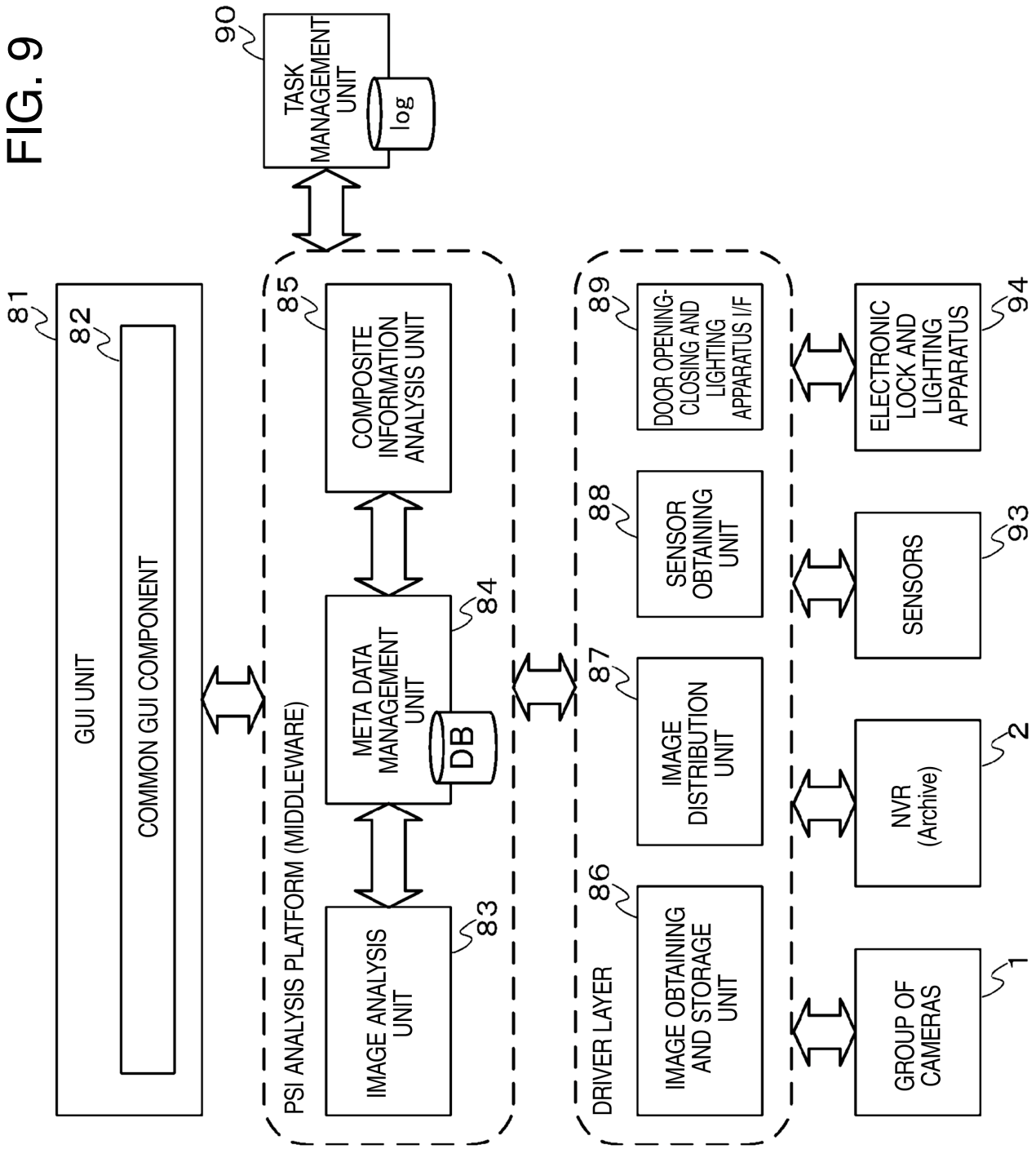


FIG. 9


90
TASK MANAGEMENT UNIT
log
81
GUI UNIT
82
COMMON GUI COMPONENT
PSI ANALYSIS PLATFORM (MIDDLEWARE)
85
COMPOSITE INFORMATION ANALYSIS UNIT
84
META DATA MANAGEMENT UNIT
DB
83
IMAGE ANALYSIS UNIT
DRIVER LAYER
89
DOOR OPENING-CLOSING AND LIGHTING APPARATUS I/F
88
SENSOR OBTAINING UNIT
87
IMAGE DISTRIBUTION UNIT
86
IMAGE OBTAINING AND STORAGE UNIT
94
ELECTRONIC LOCK AND LIGHTING APPARATUS
93
SENSORS
2
NVR (Archive)
1
GROUP OF CAMERAS