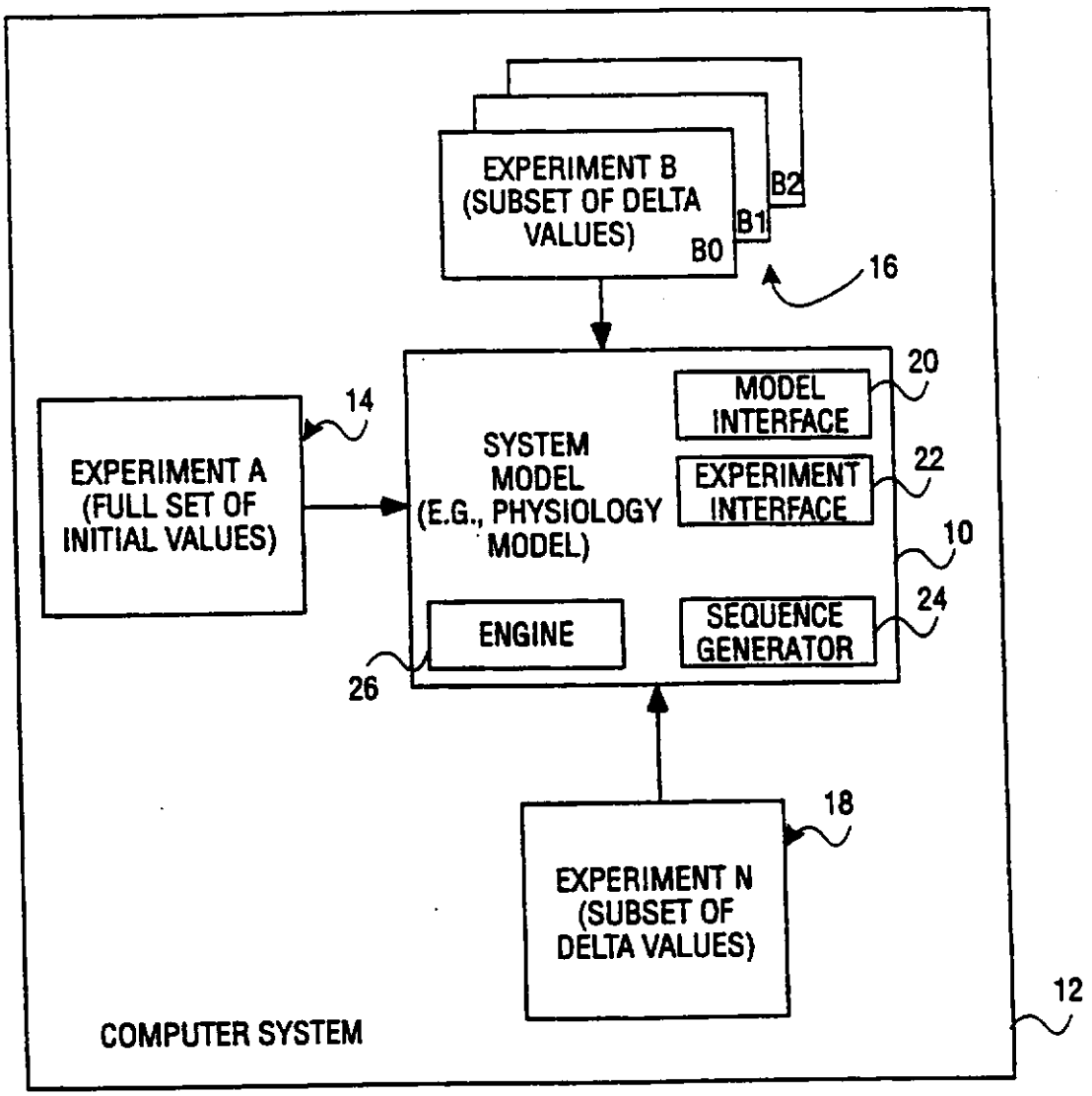

EXPERIMENT B
(SUBSET OF DELTA
VALUES)
B2
B1
B0
16
20
MODEL
INTERFACE
14
EXPERIMENT A
(FULL SET OF
INITIAL VALUES)
SYSTEM
MODEL
(E.G., PHYSIOLOGY
MODEL)
EXPERIMENT
INTERFACE
22
10
24
ENGINE
SEQUENCE
GENERATOR
26
18
EXPERIMENT N
(SUBSET OF
DELTA VALUES)
12
COMPUTER SYSTEM

FIG. 1

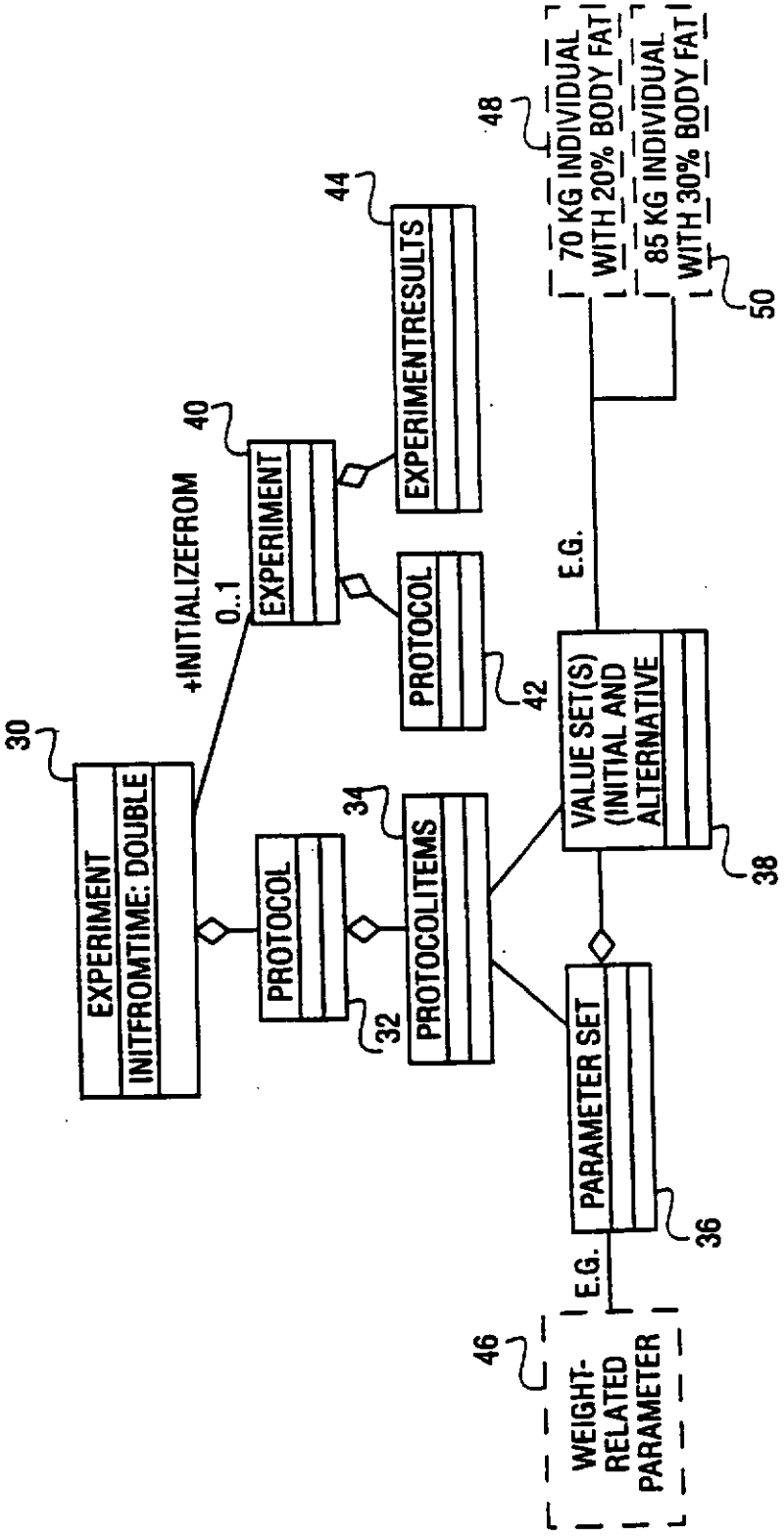

EXPERIMENT
INITFROMTIME: DOUBLE
30
+INITIALIZEFROM
0..1
EXPERIMENT
40
EXPERIMENTRESULTS
44
PROTOCOL
42
PROTOCOL
32
PROTOCOLITEMS
34
VALUE SET(S)
(INITIAL AND
ALTERNATIVE
38
E.G.
70 KG INDIVIDUAL
WITH 20% BODY FAT
85 KG INDIVIDUAL
WITH 30% BODY FAT
48
50
PARAMETER SET
36
E.G.
WEIGHT-
RELATED
PARAMETER
46

FIG. 2

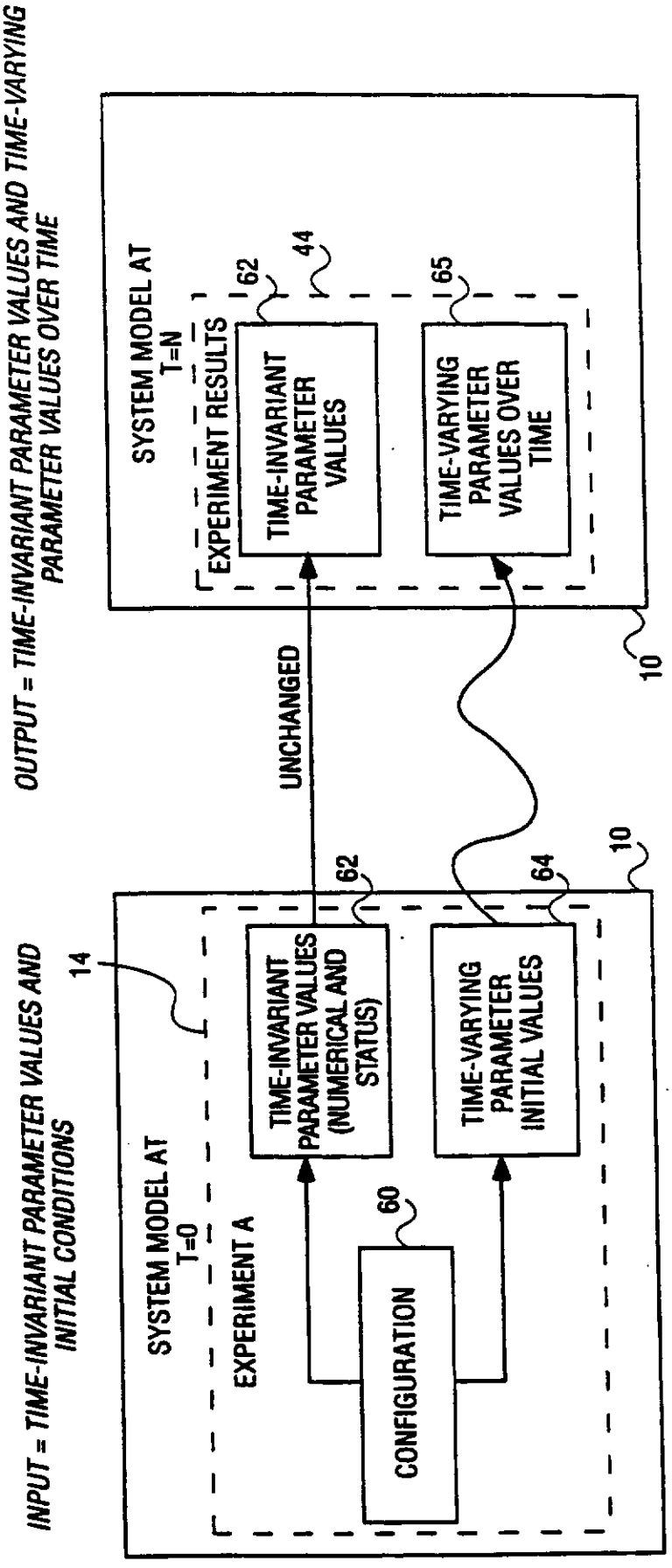

INPUT = TIME-INVARIANT PARAMETER VALUES AND INITIAL CONDITIONS
OUTPUT = TIME-INVARIANT PARAMETER VALUES AND TIME-VARYING PARAMETER VALUES OVER TIME
SYSTEM MODEL AT T=0
EXPERIMENT A
14
CONFIGURATION
60
TIME-INVARIANT PARAMETER VALUES (NUMERICAL AND STATUS)
62
TIME-VARYING PARAMETER INITIAL VALUES
64
10
UNCHANGED
SYSTEM MODEL AT T=N
EXPERIMENT RESULTS
TIME-INVARIANT PARAMETER VALUES
62
44
TIME-VARYING PARAMETER VALUES OVER TIME
65
10

FIG. 3

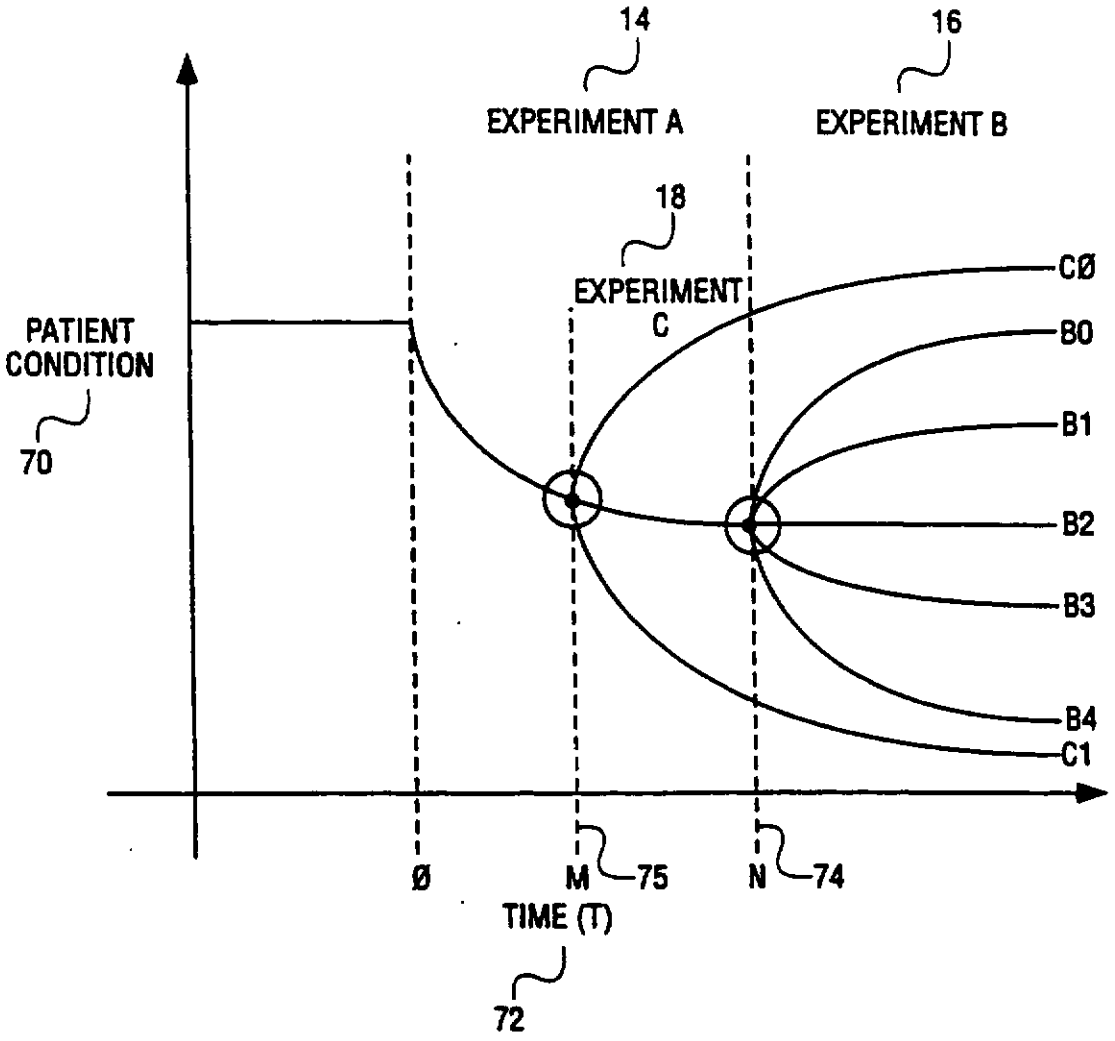

14
16
EXPERIMENT A
EXPERIMENT B
18
EXPERIMENT C
PATIENT CONDITION
70
CØ
B0
B1
B2
B3
B4
C1
Ø
M
75
N
74
TIME (T)
72

FIG. 4

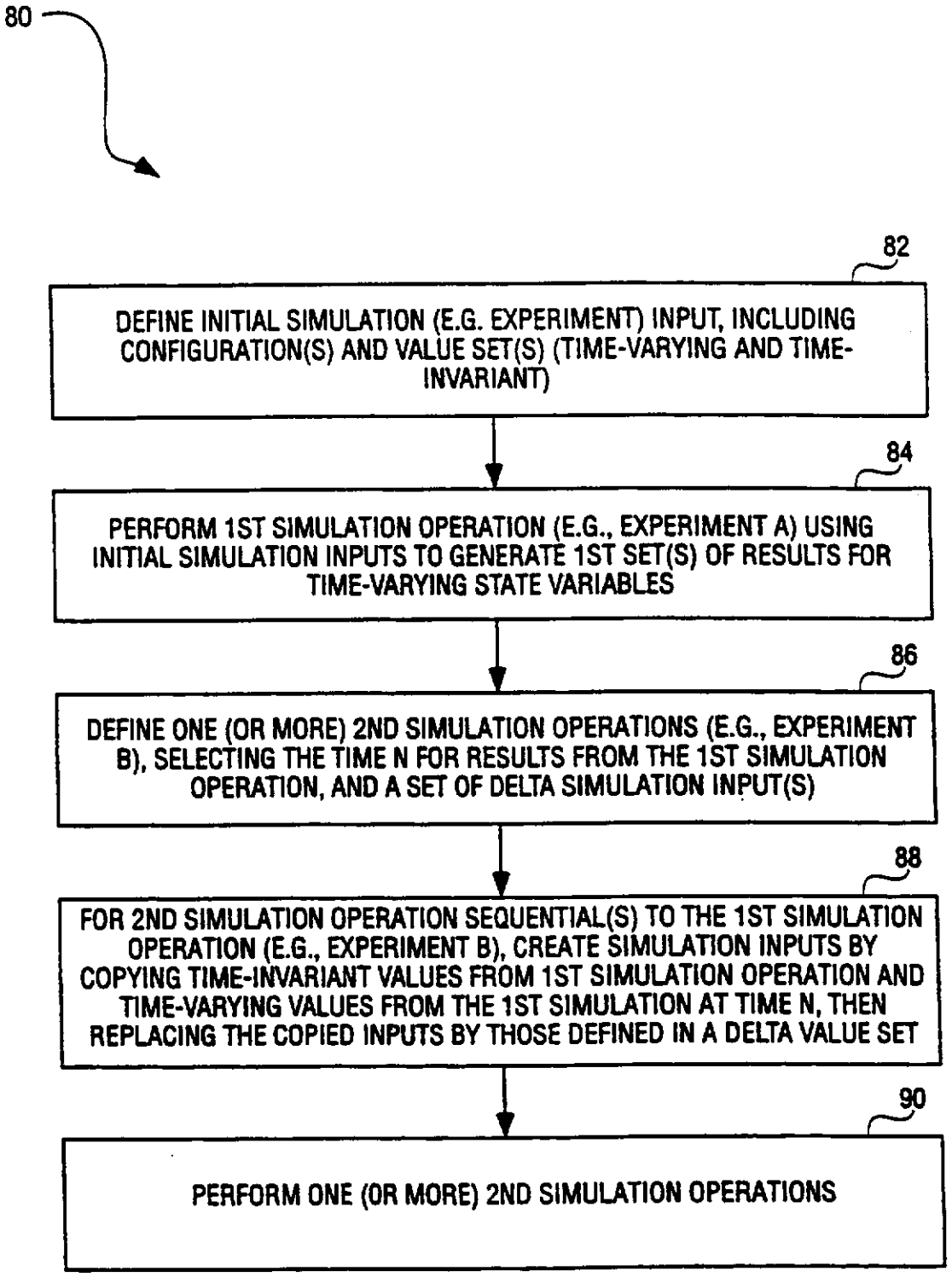

80
82
DEFINE INITIAL SIMULATION (E.G. EXPERIMENT) INPUT, INCLUDING CONFIGURATION(S) AND VALUE SET(S) (TIME-VARYING AND TIME-INVARIANT)
84
PERFORM 1ST SIMULATION OPERATION (E.G., EXPERIMENT A) USING INITIAL SIMULATION INPUTS TO GENERATE 1ST SET(S) OF RESULTS FOR TIME-VARYING STATE VARIABLES
86
DEFINE ONE (OR MORE) 2ND SIMULATION OPERATIONS (E.G., EXPERIMENT B), SELECTING THE TIME N FOR RESULTS FROM THE 1ST SIMULATION OPERATION, AND A SET OF DELTA SIMULATION INPUT(S)
88
FOR 2ND SIMULATION OPERATION SEQUENTIAL(S) TO THE 1ST SIMULATION OPERATION (E.G., EXPERIMENT B), CREATE SIMULATION INPUTS BY COPYING TIME-INVARIANT VALUES FROM 1ST SIMULATION OPERATION AND TIME-VARYING VALUES FROM THE 1ST SIMULATION AT TIME N, THEN REPLACING THE COPIED INPUTS BY THOSE DEFINED IN A DELTA VALUE SET
90
PERFORM ONE (OR MORE) 2ND SIMULATION OPERATIONS

FIG. 5

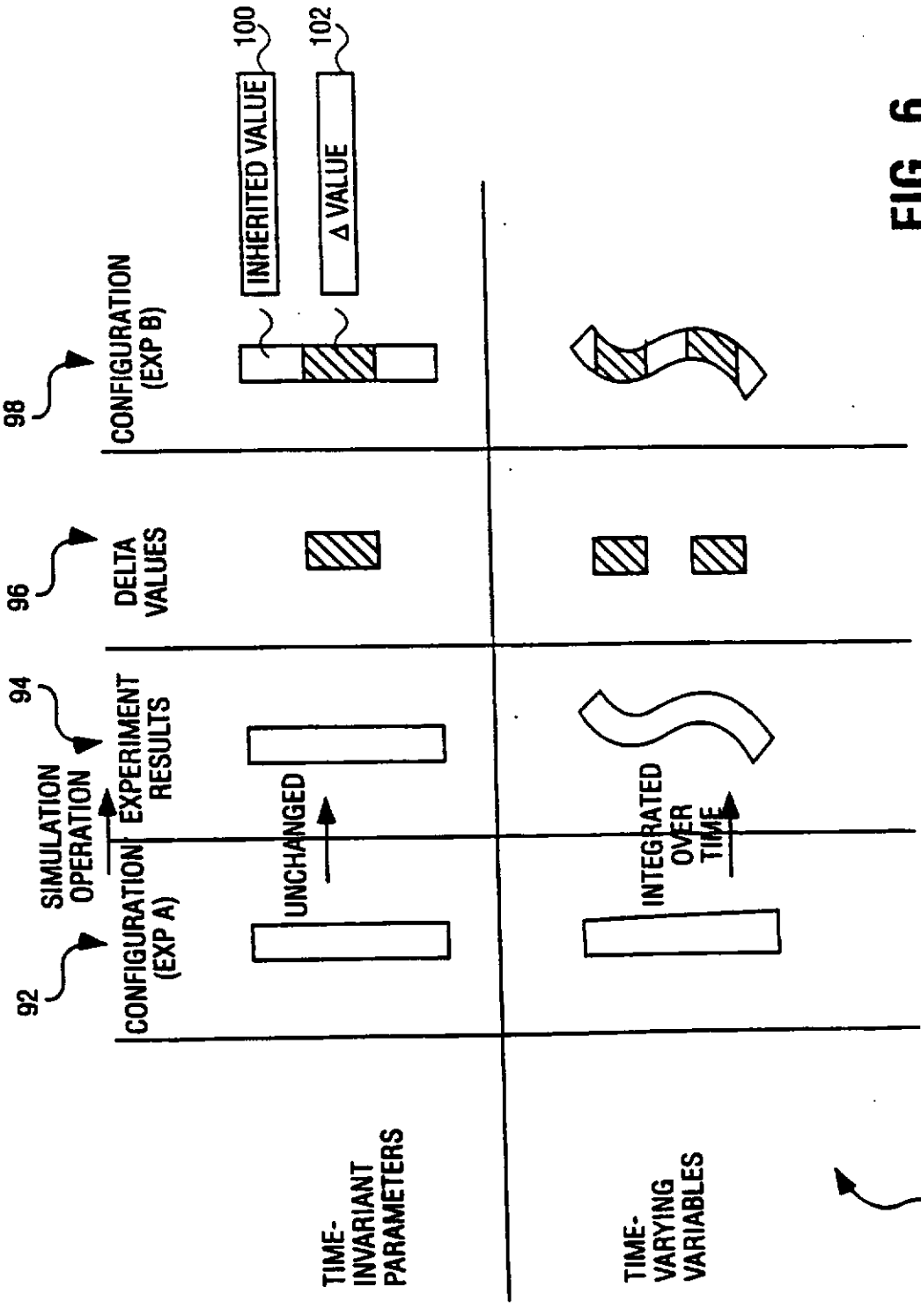

88
TIME-INVARIANT PARAMETERS
TIME-VARYING VARIABLES
92
CONFIGURATION (EXP A)
SIMULATION OPERATION
94
EXPERIMENT RESULTS
UNCHANGED
INTEGRATED OVER TIME
96
DELTA VALUES
98
CONFIGURATION (EXP B)
INHERITED VALUE
100
Δ VALUE
102

FIG. 6

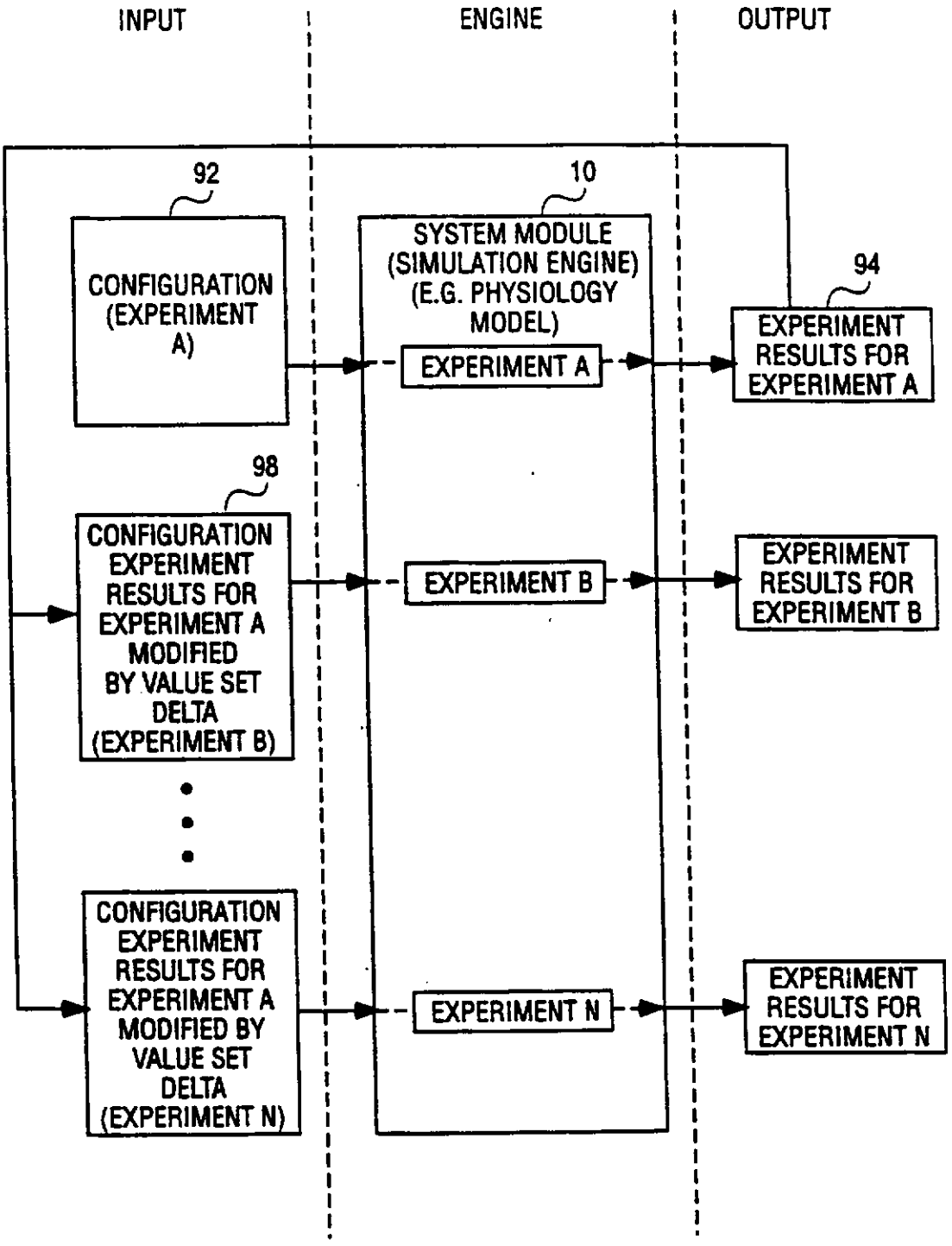

INPUT
ENGINE
OUTPUT
92
10
94
CONFIGURATION (EXPERIMENT A)
SYSTEM MODULE (SIMULATION ENGINE) (E.G. PHYSIOLOGY MODEL)
EXPERIMENT A
EXPERIMENT RESULTS FOR EXPERIMENT A
98
CONFIGURATION EXPERIMENT RESULTS FOR EXPERIMENT A MODIFIED BY VALUE SET DELTA (EXPERIMENT B)
EXPERIMENT B
EXPERIMENT RESULTS FOR EXPERIMENT B
CONFIGURATION EXPERIMENT RESULTS FOR EXPERIMENT A MODIFIED BY VALUE SET DELTA (EXPERIMENT N)
EXPERIMENT N
EXPERIMENT RESULTS FOR EXPERIMENT N

FIG. 7

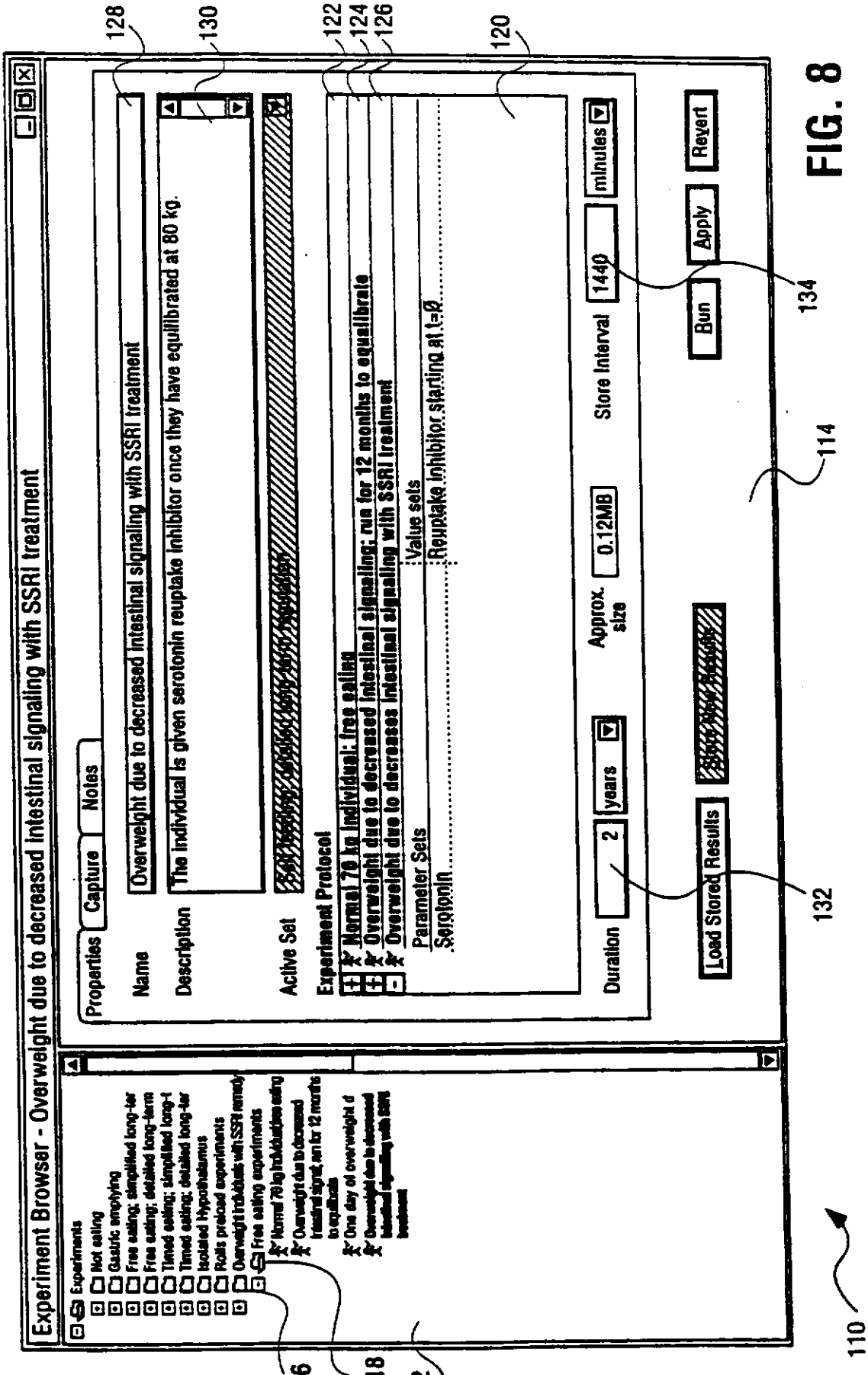

Experiment Browser - Overweight due to decreased intestinal signaling with SSRI treatment
Properties
Capture
Notes
Name
Overweight due to decreased intestinal signaling with SSRI treatment
Description
The individual is given serotonin reuptake inhibitor once they have equilibrated at 80 kg.
Active Set
Experiment Protocol
Normal 70 kg individual: free eating
Overweight due to decreased intestinal signaling; run for 12 months to equilibrate
Overweight due to decreases intestinal signaling with SSRI treatment
Parameter Sets
Value sets
Serotonin
Reuptake inhibitor starting at 1=0
Duration
2
years
Approx. size
0.12MB
Store Interval
1440
minutes
Load Stored Results
Run
Apply
Revert
110
112
114
116
118
120
122
124
126
128
130
132
134

FIG. 8

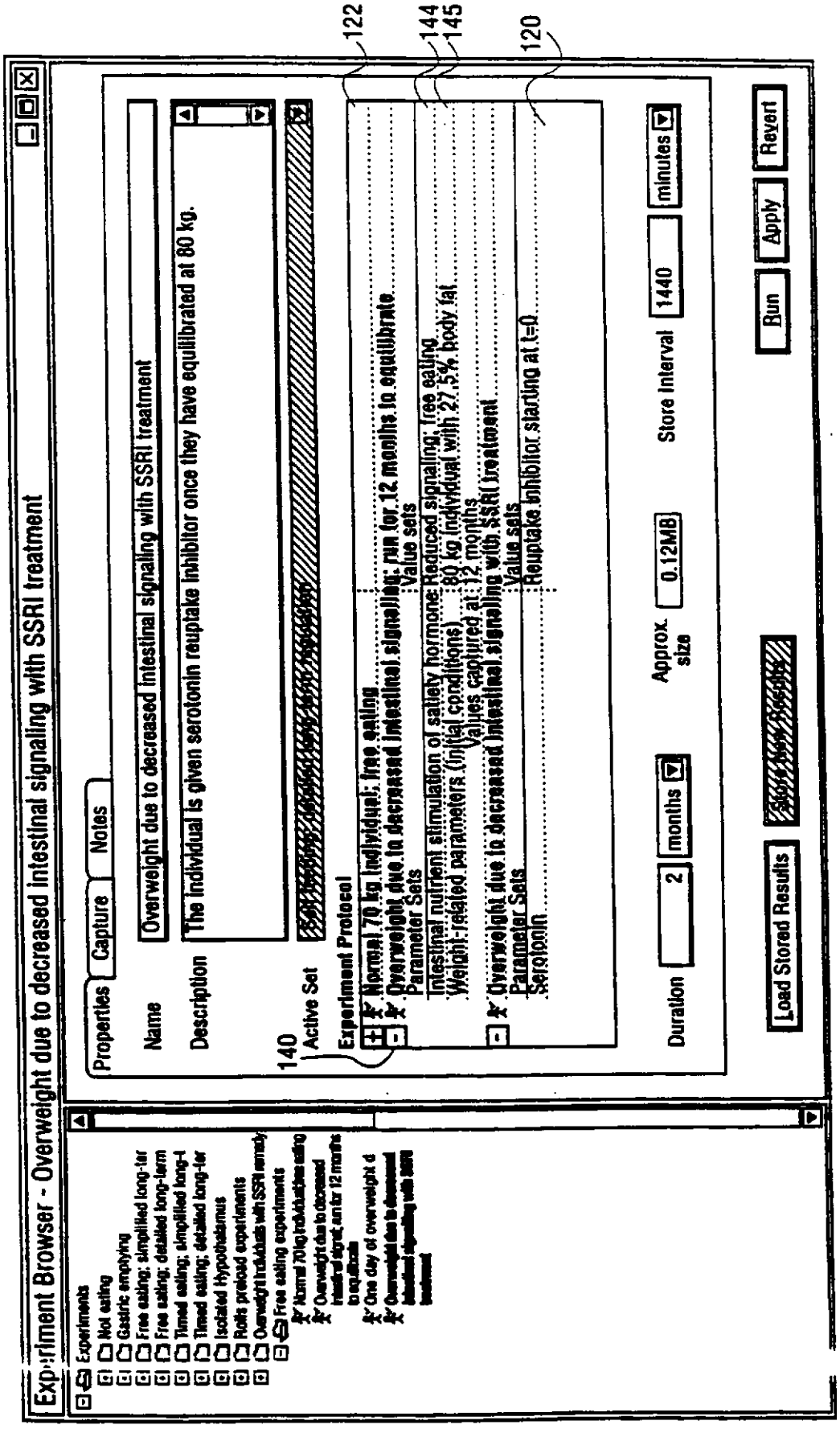

Experiment Browser - Overweight due to decreased intestinal signaling with SSRI treatment
Properties
Capture
Notes
Name
Overweight due to decreased intestinal signaling with SSRI treatment
Description
The individual is given serotonin reuptake inhibitor once they have equilibrated at 80 kg.
Active Set
Experiment Protocol
Normal 70 kg individual: free eating
Overweight due to decreased intestinal signaling: run for 12 months to equilibrate
Value sets
Parameter Sets
Intestinal nutrient stimulation of satiety hormone: Reduced signaling; free eating
Weight-related parameters (initial conditions): 80 kg individual with 27.5% body fat
Values captured at: 12 months
Overweight due to decreased intestinal signaling with SSRI treatment
Value sets
Parameter Sets
Serotonin
Reuptake inhibitor starting at t=0
Duration
2
months
Approx size
0.12MB
Store Interval
1440
minutes
Load Stored Results
Run
Apply
Revert
122
144
145
120
140
110

FIG. 9

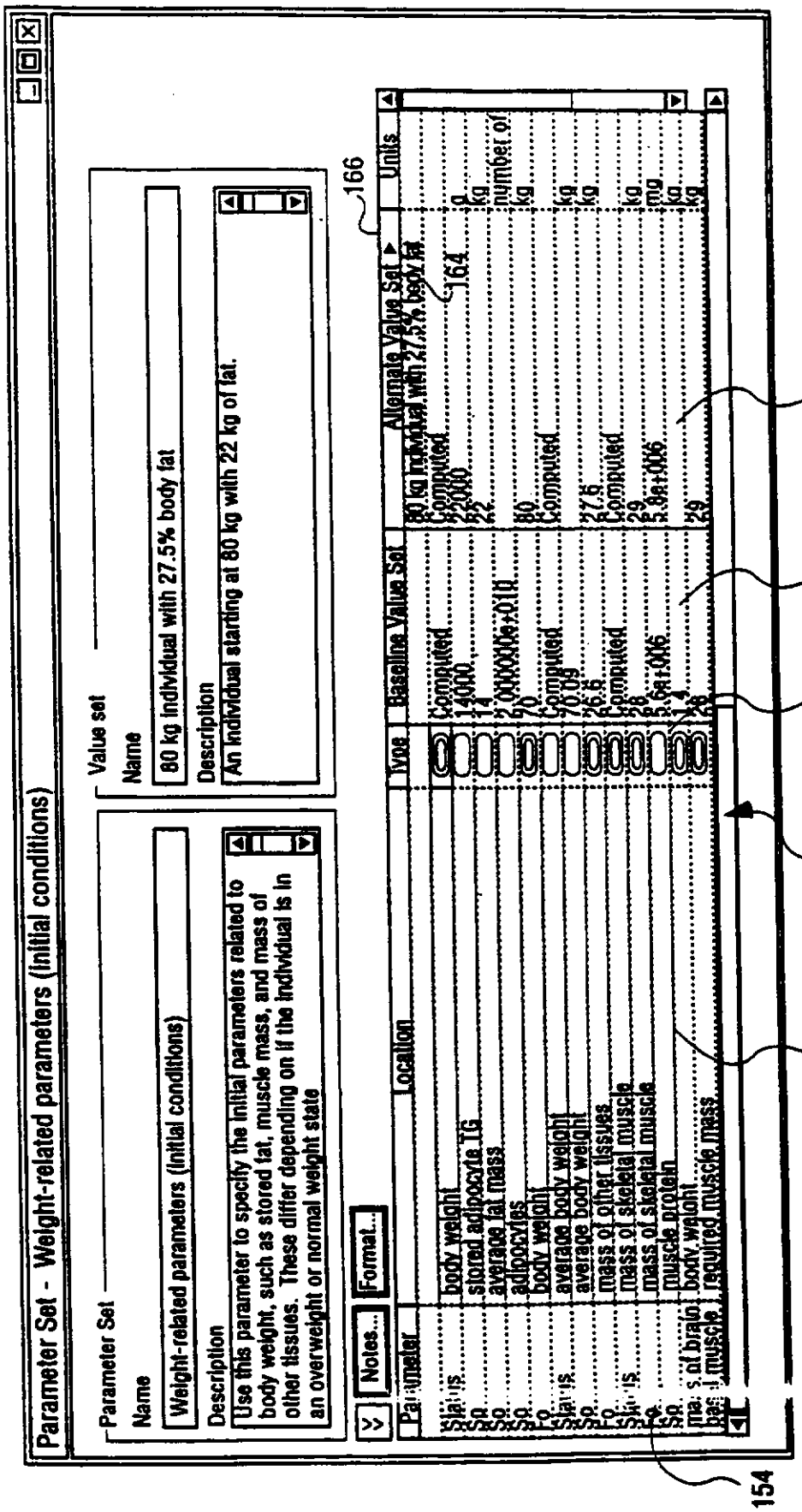

Parameter Set - Weight-related parameters (initial conditions)
Parameter Set
Name
Weight-related parameters (initial conditions)
Description
Use this parameter to specify the initial parameters related to body weight, such as stored fat, muscle mass, and mass of other tissues. These differ depending on if the individual is in an overweight or normal weight state
Value set
Name
80 kg individual with 27.5% body fat
Description
An individual starting at 80 kg with 22 kg of fat.
Notes...
Format...
Parameter
Location
Type
Baseline Value Set
Alternate Value Set
Units
154
156
158
160
162
164
166
150

FIG. 10

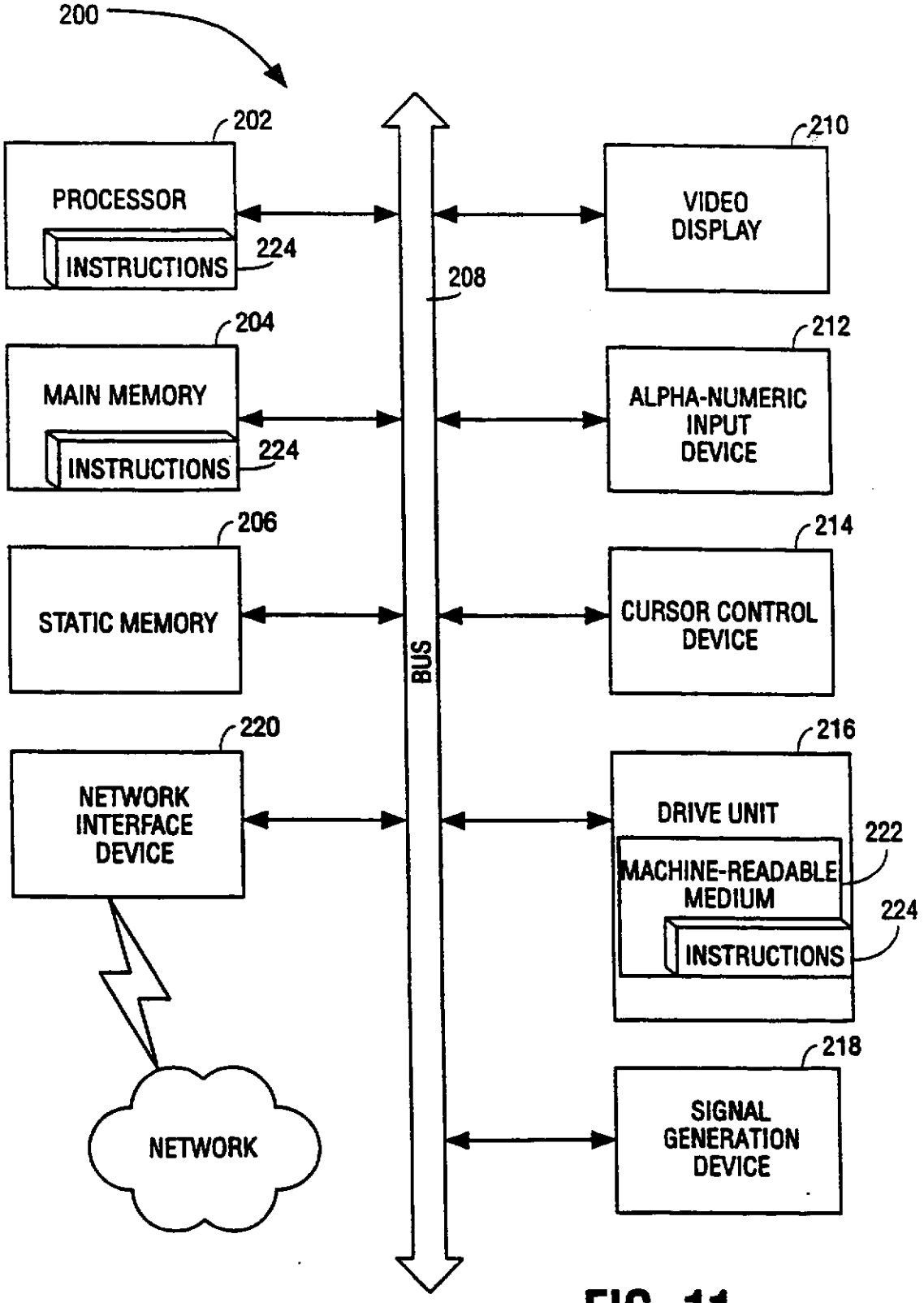

200
202
PROCESSOR
INSTRUCTIONS
224
204
MAIN MEMORY
INSTRUCTIONS
224
206
STATIC MEMORY
220
NETWORK INTERFACE DEVICE
NETWORK
BUS
208
210
VIDEO DISPLAY
212
ALPHA-NUMERIC INPUT DEVICE
214
CURSOR CONTROL DEVICE
216
DRIVE UNIT
222
MACHINE-READABLE MEDIUM
224
INSTRUCTIONS
218
SIGNAL GENERATION DEVICE

FIG. 11