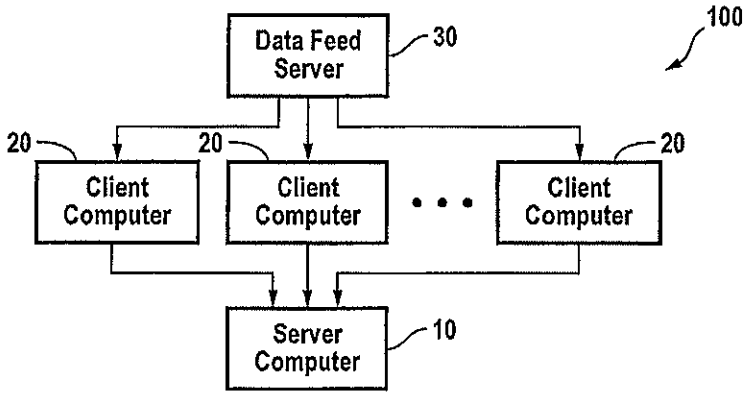
Data Feed Server
30
100
20
20
20
Client Computer
Client Computer
Client Computer
Server Computer
10

FIG. 1

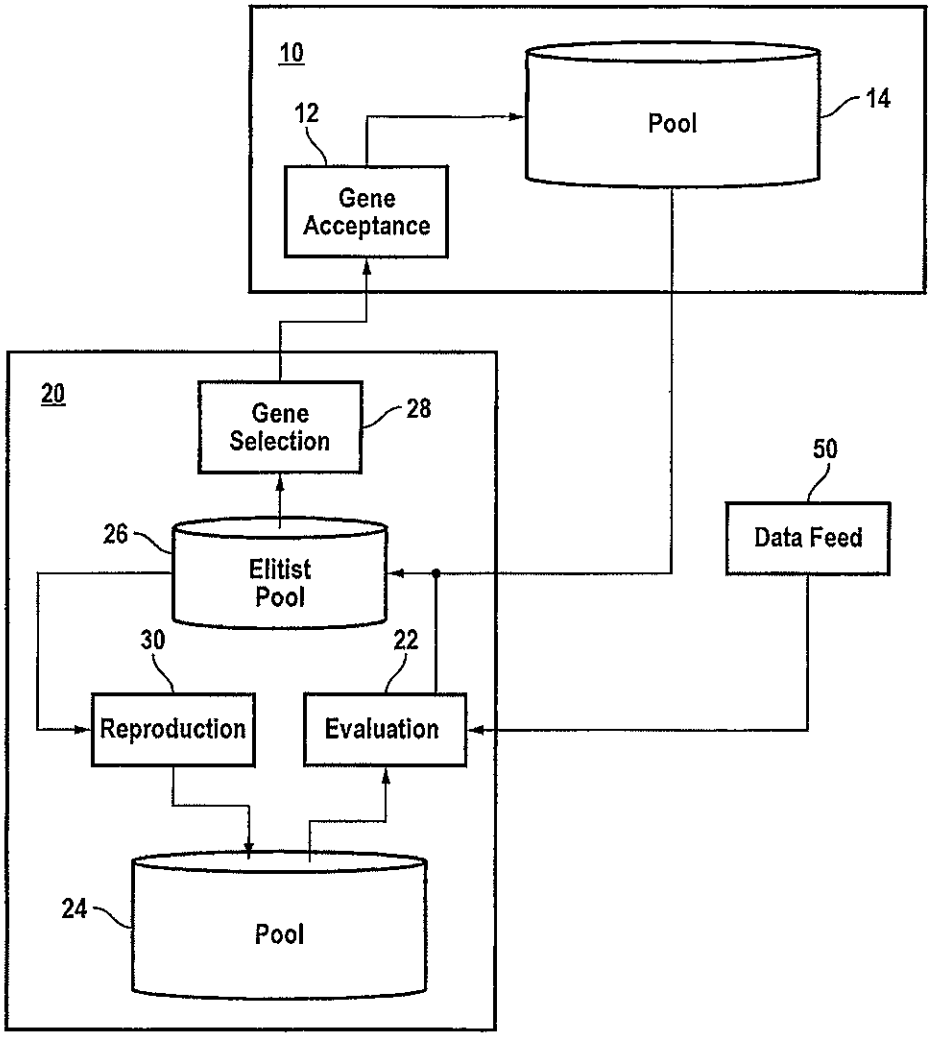
10
12
Pool
14
Gene Acceptance
20
Gene Selection
28
50
Data Feed
26
Elitist Pool
30
22
Reproduction
Evaluation
24
Pool

FIG. 2

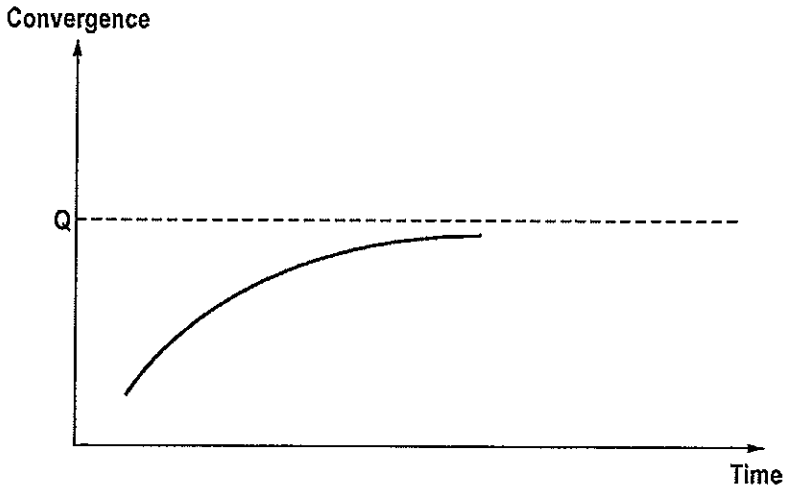
Convergence
Q
Time

FIG. 3

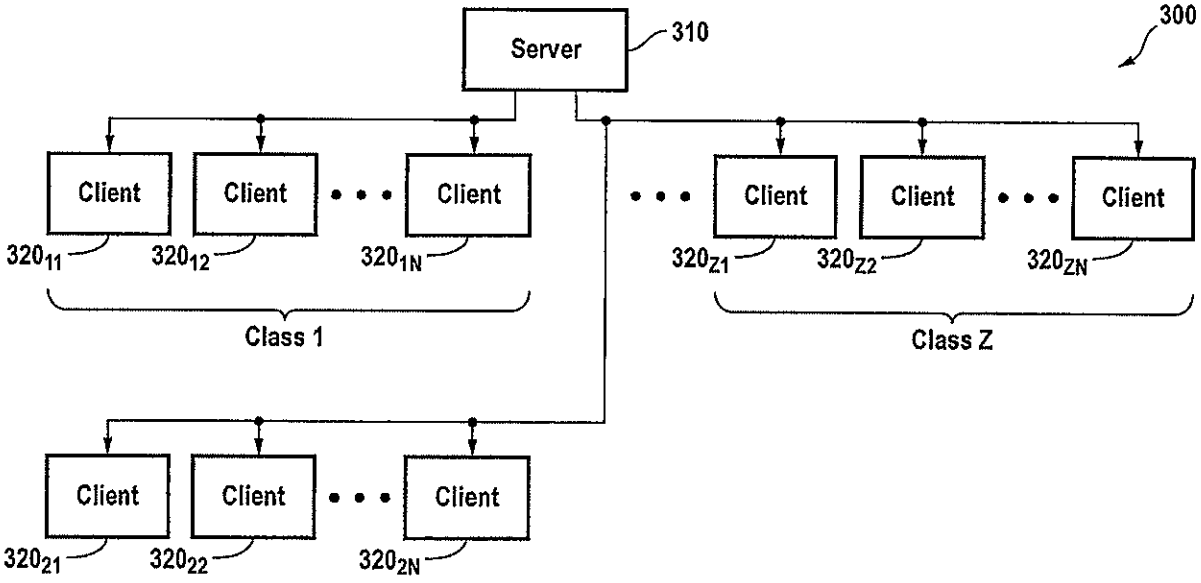
Server
310
300
Client
Client
Client
Client
Client
Client
Client
Client
Client
320$_{11}$
320$_{12}$
320$_{1N}$
320$_{Z1}$
320$_{Z2}$
320$_{ZN}$
Class 1
Class Z
320$_{21}$
320$_{22}$
320$_{2N}$

FIG. 4

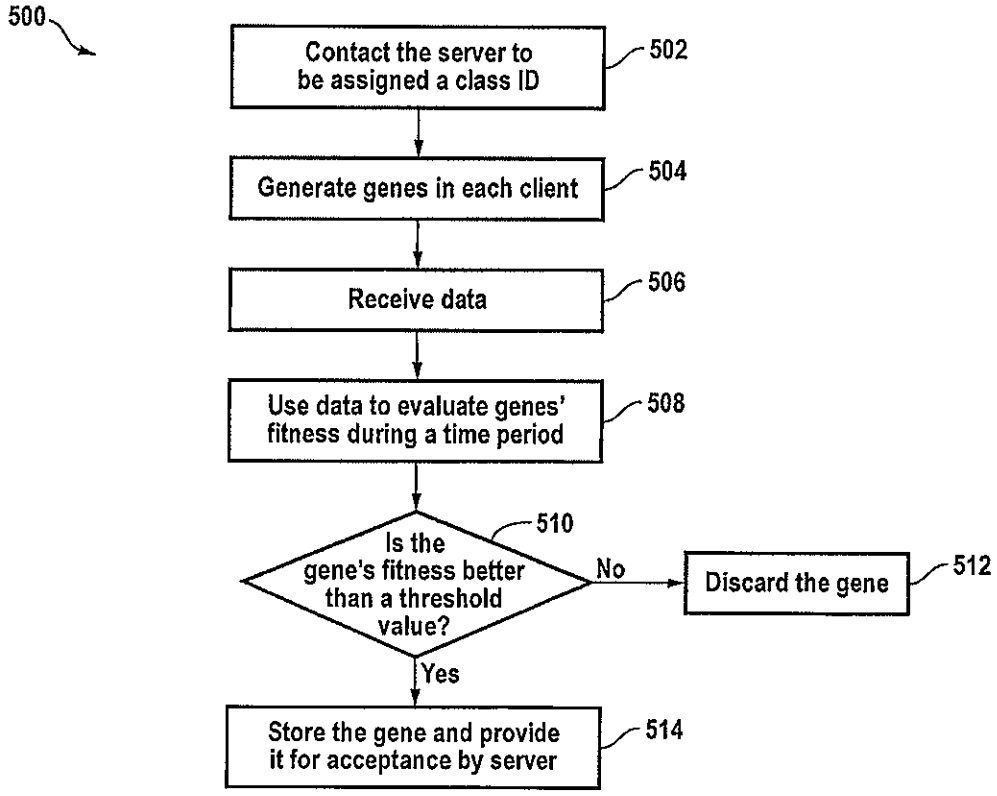
500
Contact the server to be assigned a class ID
502
Generate genes in each client
504
Receive data
506
Use data to evaluate genes' fitness during a time period
508
Is the gene's fitness better than a threshold value?
510
No
Discard the gene
512
Yes
Store the gene and provide it for acceptance by server
514

FIG. 5A

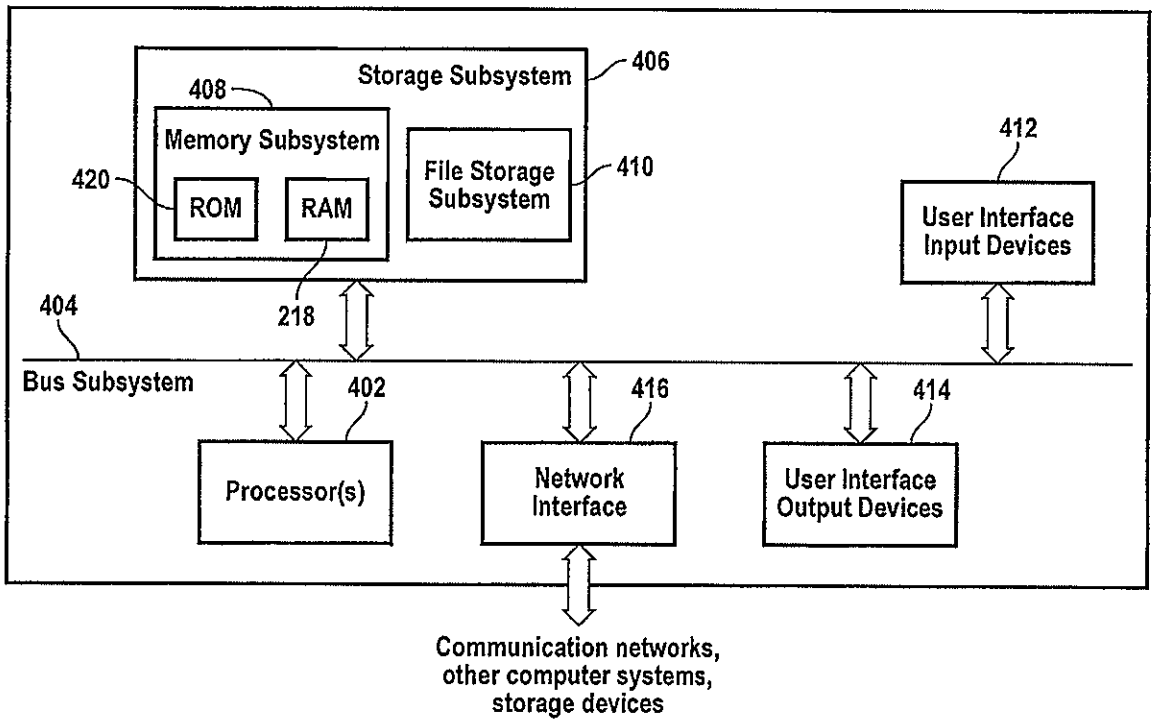
Storage Subsystem
406
408
Memory Subsystem
420
ROM
RAM
File Storage Subsystem
410
412
User Interface Input Devices
218
404
Bus Subsystem
402
416
414
Processor(s)
Network Interface
User Interface Output Devices
Communication networks, other computer systems, storage devices

FIG. 6

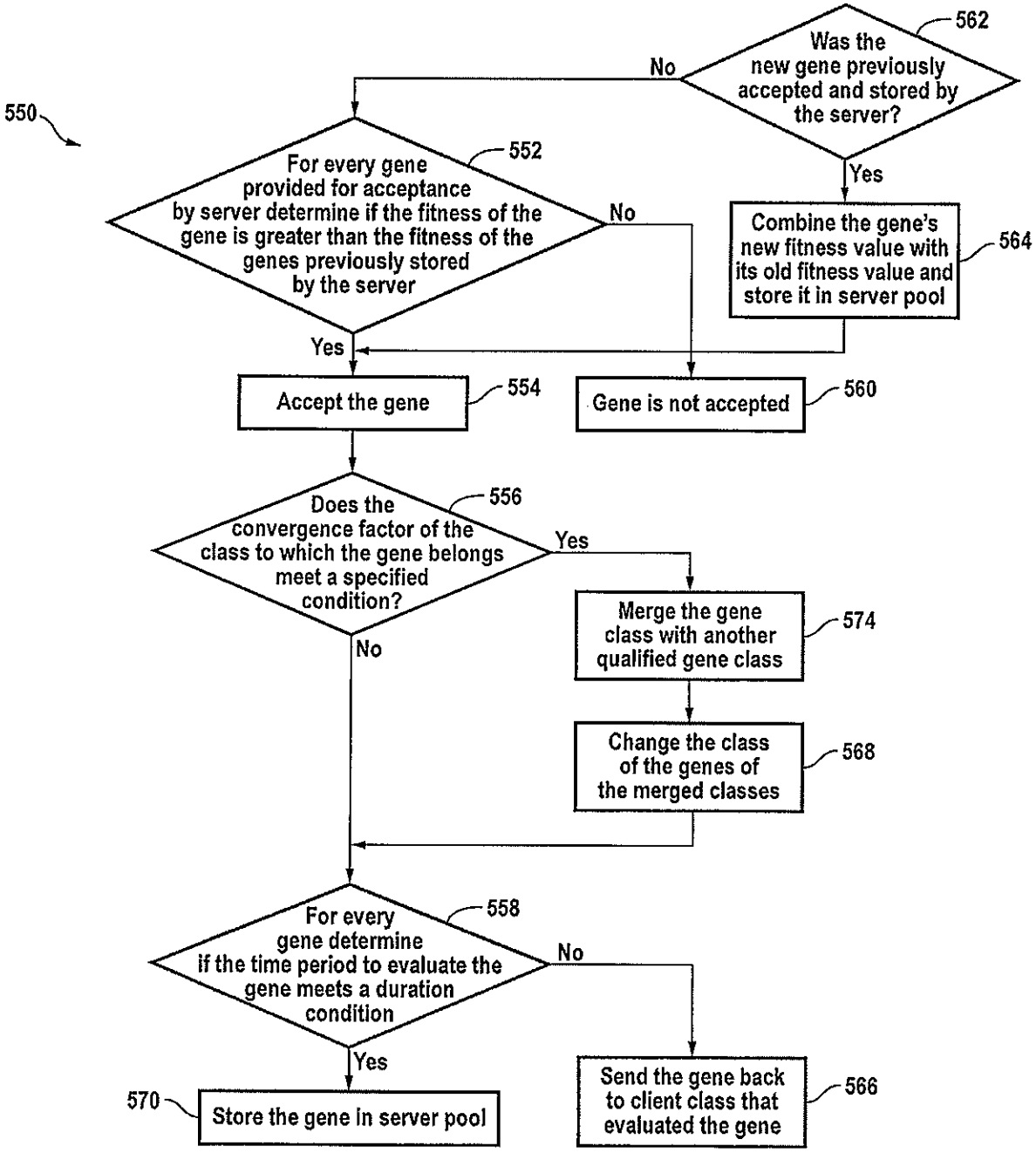
550
562
Was the new gene previously accepted and stored by the server?
No
Yes
552
For every gene provided for acceptance by server determine if the fitness of the gene is greater than the fitness of the genes previously stored by the server
No
Yes
564
Combine the gene's new fitness value with its old fitness value and store it in server pool
554
Accept the gene
560
Gene is not accepted
556
Does the convergence factor of the class to which the gene belongs meet a specified condition?
Yes
No
574
Merge the gene class with another qualified gene class
568
Change the class of the genes of the merged classes
558
For every gene determine if the time period to evaluate the gene meets a duration condition
No
Yes
570
Store the gene in server pool
566
Send the gene back to client class that evaluated the gene

FIG. 5B