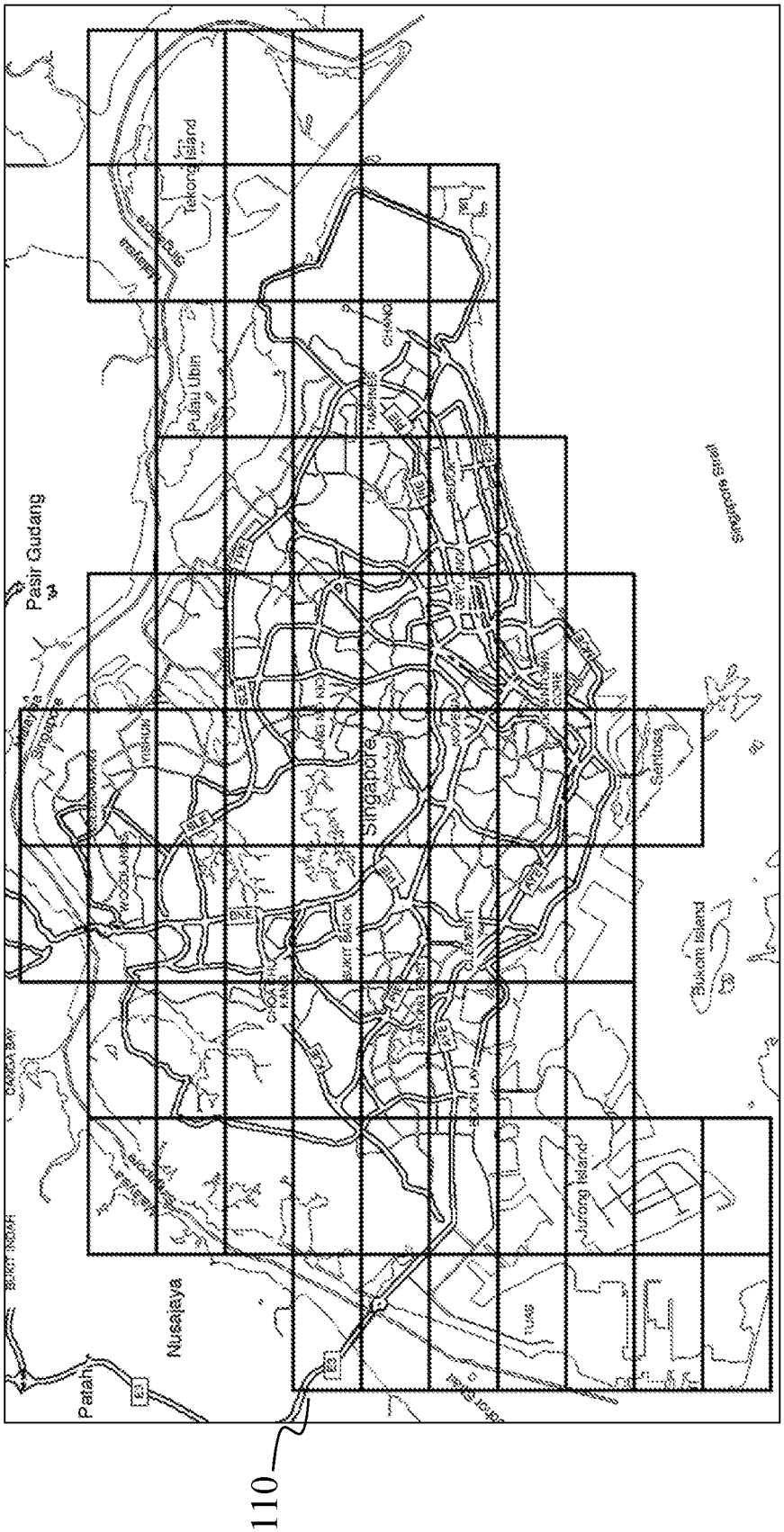
100
110
Pasir Gudang
Pulau Ubin
Tekong Island
Singapore
Singapore Strait
Sentosa
Bukom Island
Jurong Island
Nusajaya
Patah

FIG. 1

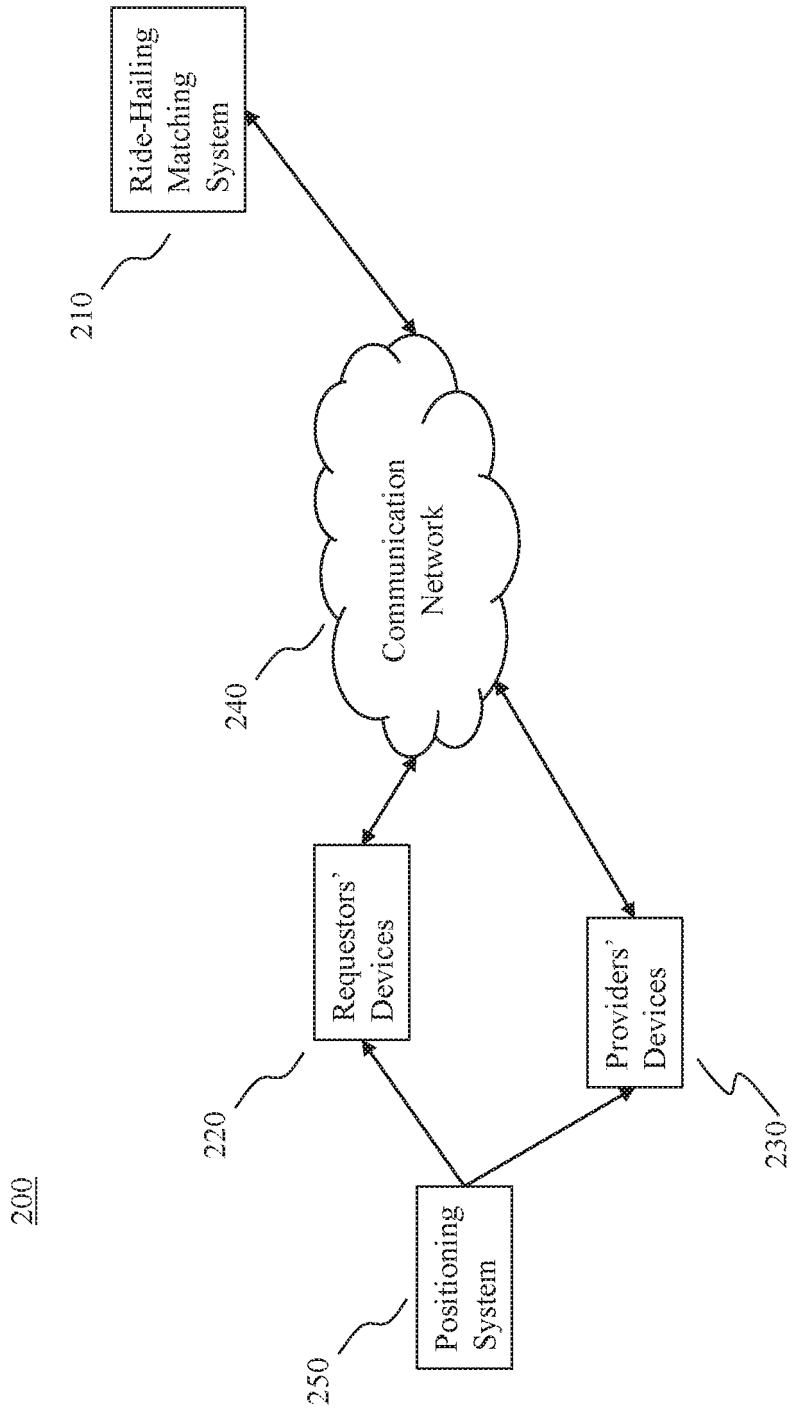
200
Ride-Hailing Matching System
210
Communication Network
240
Requestors' Devices
220
Providers' Devices
230
Positioning System
250

FIG. 2

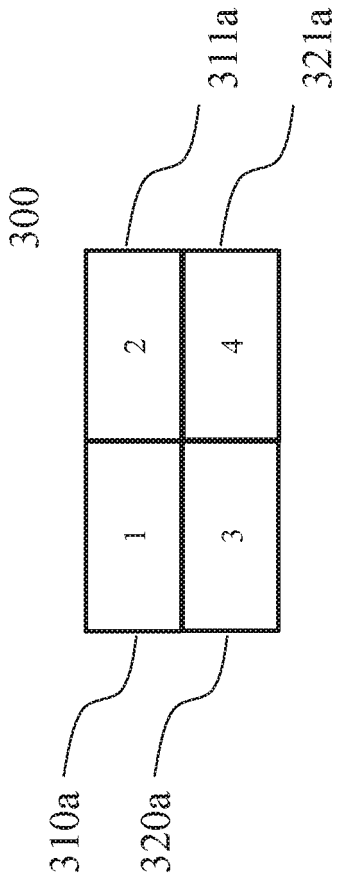
300
311a
321a
2
4
1
3
310a
320a

FIG. 3A

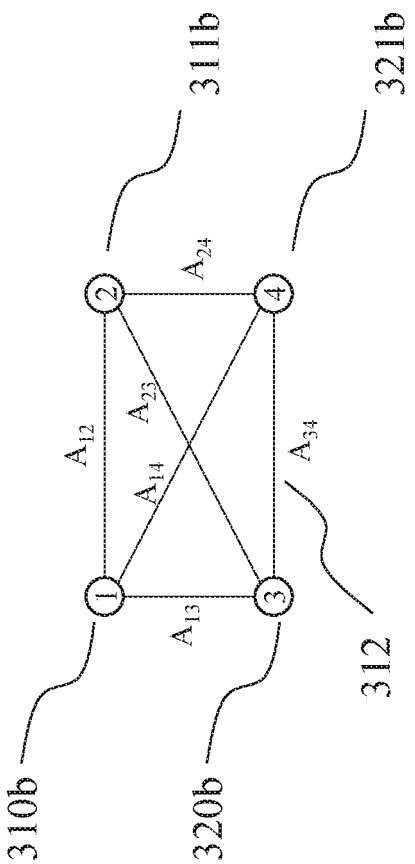
311b
321b
2
4
1
3
A_{12}
A_{23}
A_{24}
A_{14}
A_{34}
A_{13}
312
310b
320b

FIG. 3B

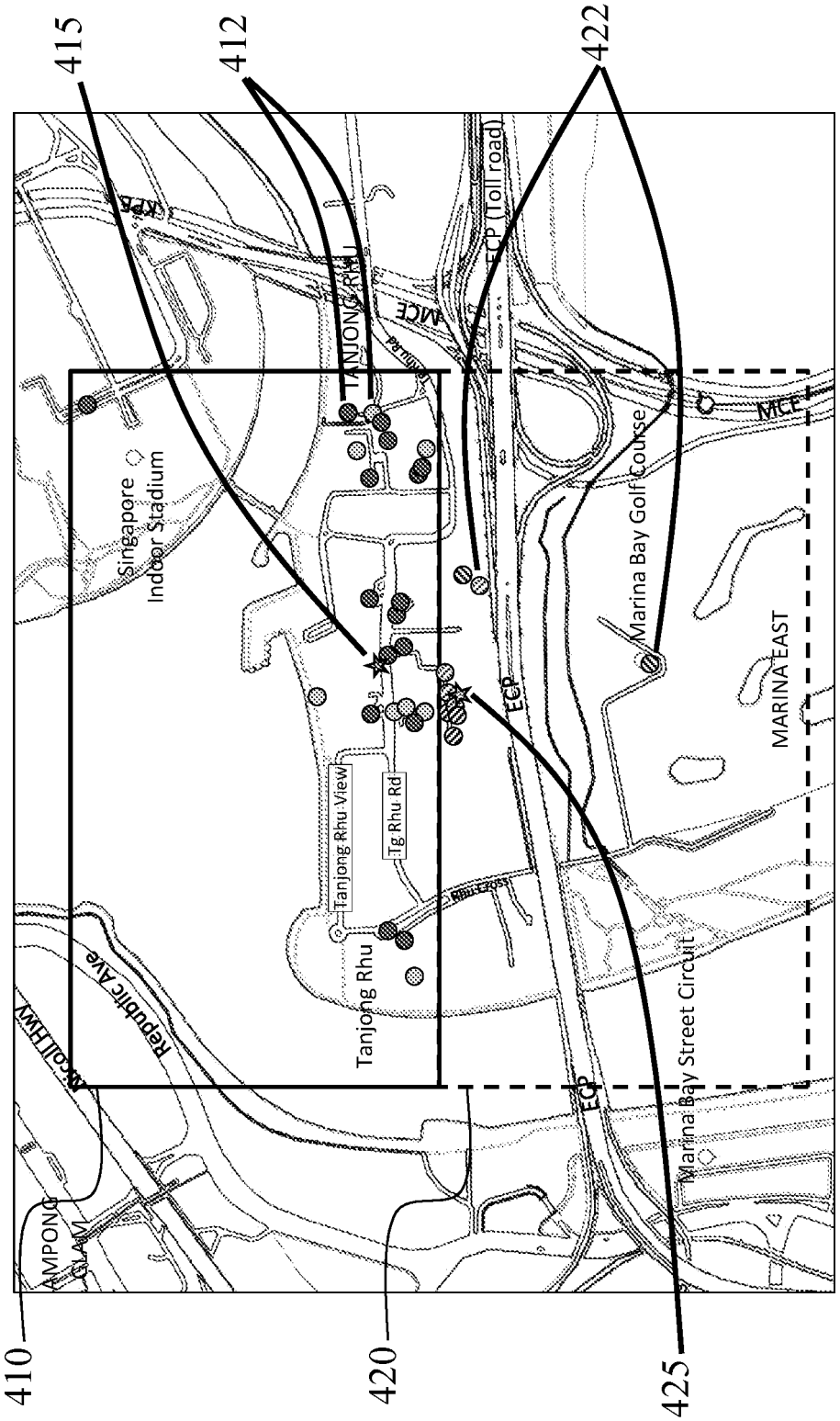
415
412
422
410
420
425
KPE
TANJONG RHU
MCE
ECP (Toll road)
Singapore Indoor Stadium
Marina Bay Golf Course
MARINA EAST
ECP
Tanjong Rhu View
Tg Rhu Rd
Tanjong Rhu
Republic Ave
AMPANG
ECP
Marina Bay Street Circuit

FIG. 4A

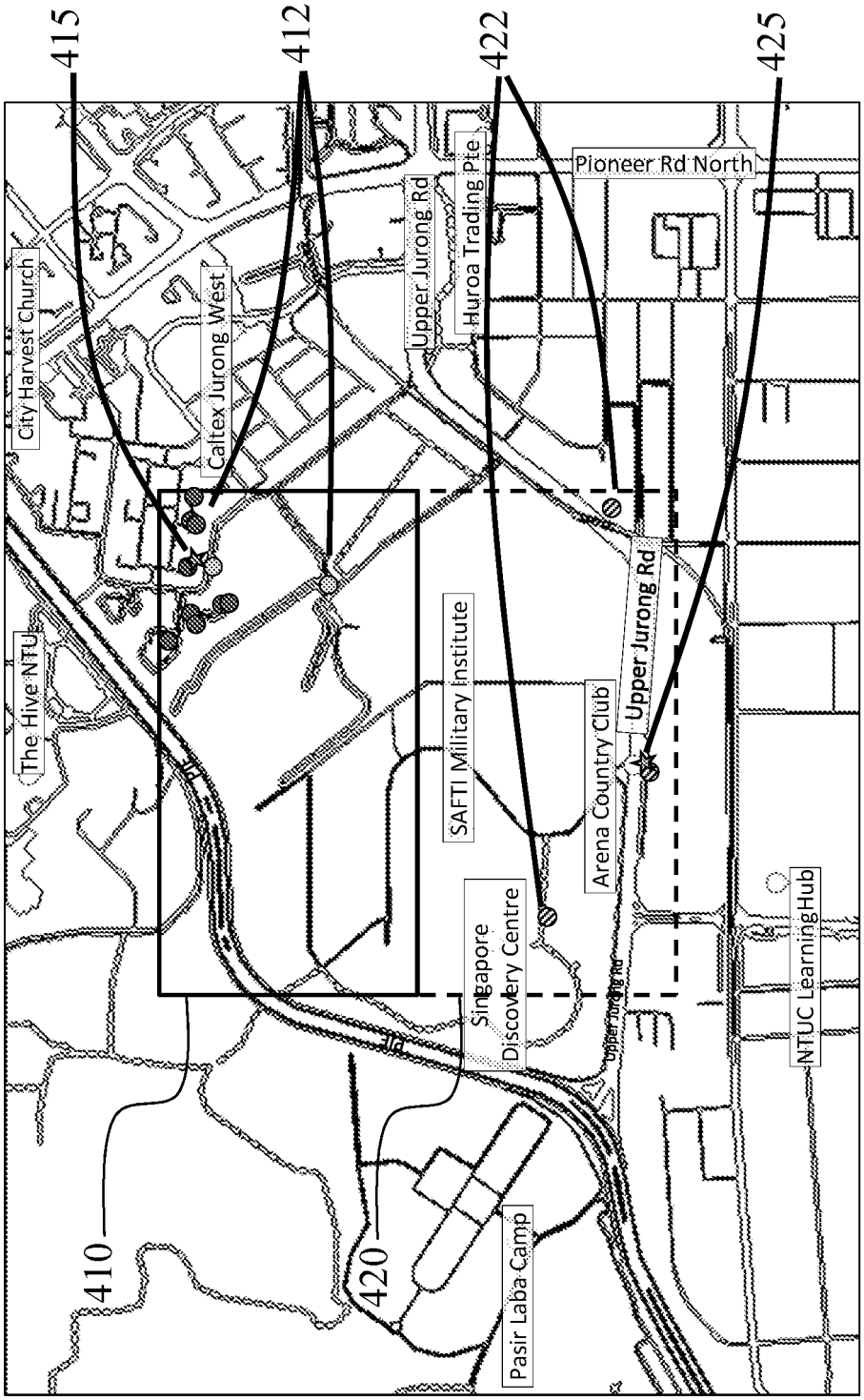
415
412
422
425
410
420
City Harvest Church
Caltex Jurong West
Upper Jurong Rd
Huroa Trading Pte
Pioneer Rd North
The Hive NTU
SAFTI Military Institute
Arena Country Club
Upper Jurong Rd
Singapore Discovery Centre
NTUC LearningHub
Pasir Laba Camp

FIG. 4B

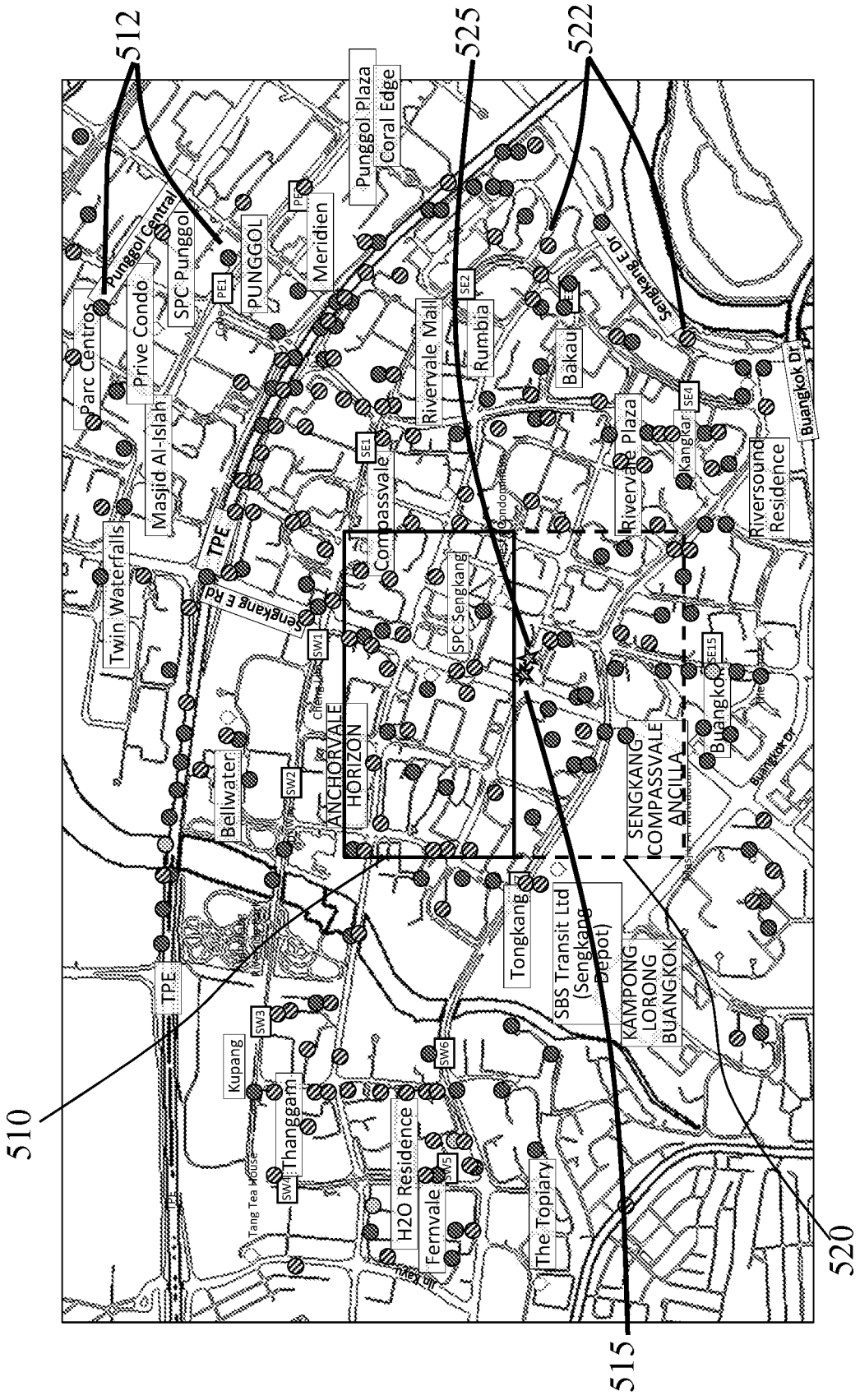
512
525
522
510
515
520
Punggol Central
Parc Centros
Prive Condo
SPC Punggol
PUNGGOL
Meridien
Punggol Plaza
Coral Edge
Masjid Al-Islah
Twin Waterfalls
TPE
Rivervale Mall
Rumbia
Bakau
Rivervale Plaza
Riversound Residence
Buangkok Dr
Sengkang E Dr
Sengkang E Rd
Compassvale
SPC Sengkang
HORIZON
ANCHORVALE
Bellwater
Kupang
Thanggam
H2O Residence
Fernvale
Tongkang
SBS Transit Ltd (Sengkang Depot)
The Topiary
SENGKANG COMPASSVALE ANCILLA
KAMPONG LORONG BUANGKOK
Buangkok
PE1
PE2
SE1
SE2
SE4
SE15
SW1
SW2
SW3
SW4
SW5
SW6

FIG. 5A

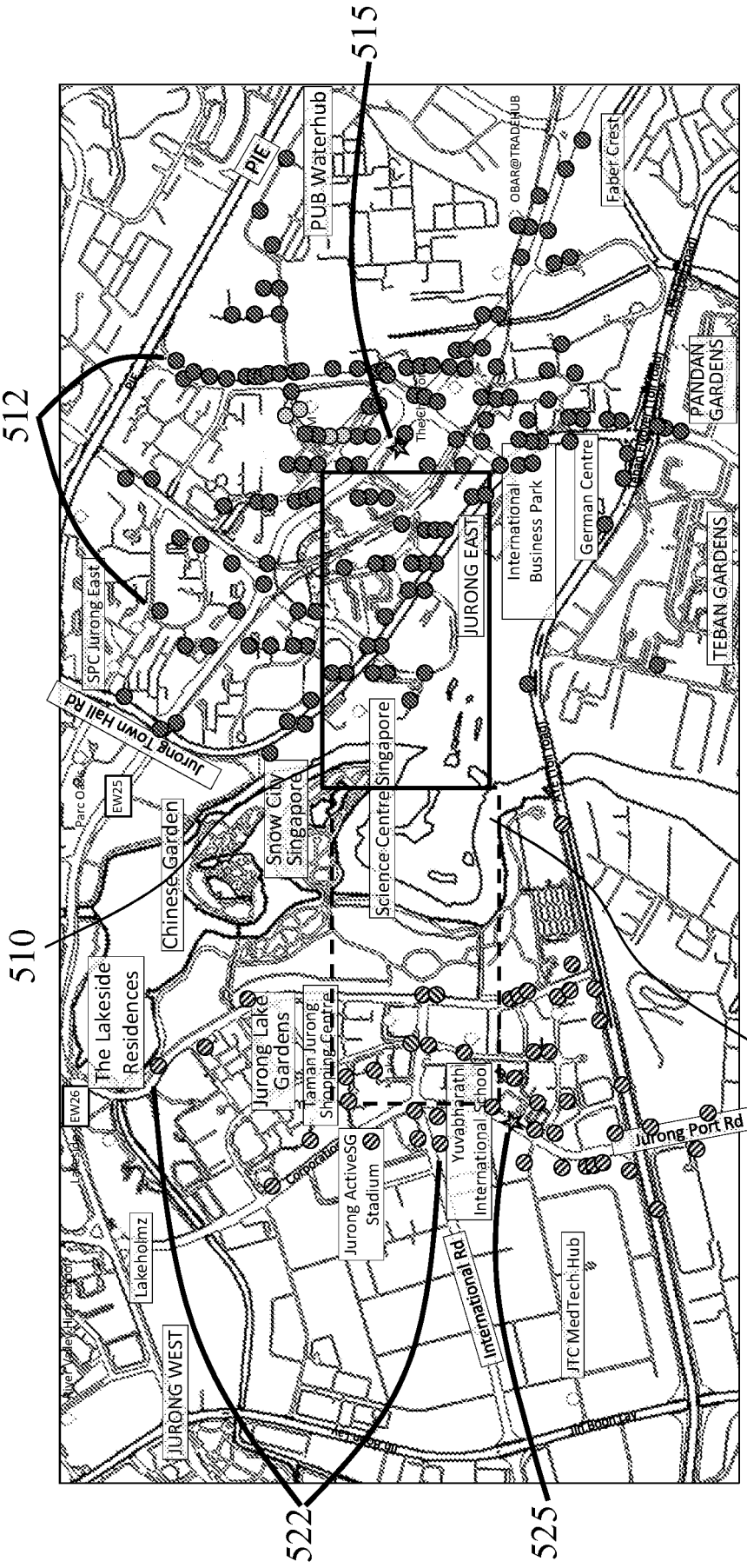
515
512
510
520
522
525
PIE
PUB Waterhub
OBAR@TRADEHUB
Faber Crest
PANDAN GARDENS
TEBAN GARDENS
JURONG EAST
International Business Park
German Centre
SPC Jurong East
Jurong Town Hall Rd
EW25
Chinese Garden
Snow City Singapore
Science Centre Singapore
The Lakeside Residences
EW26
Jurong Lake Gardens
Taman Jurong Shopping Centre
Jurong ActiveSG Stadium
Yuvabharathi International School
Jurong Port Rd
International Rd
JTC MedTech Hub
Lakeholmz
JURONG WEST

FIG. 5B

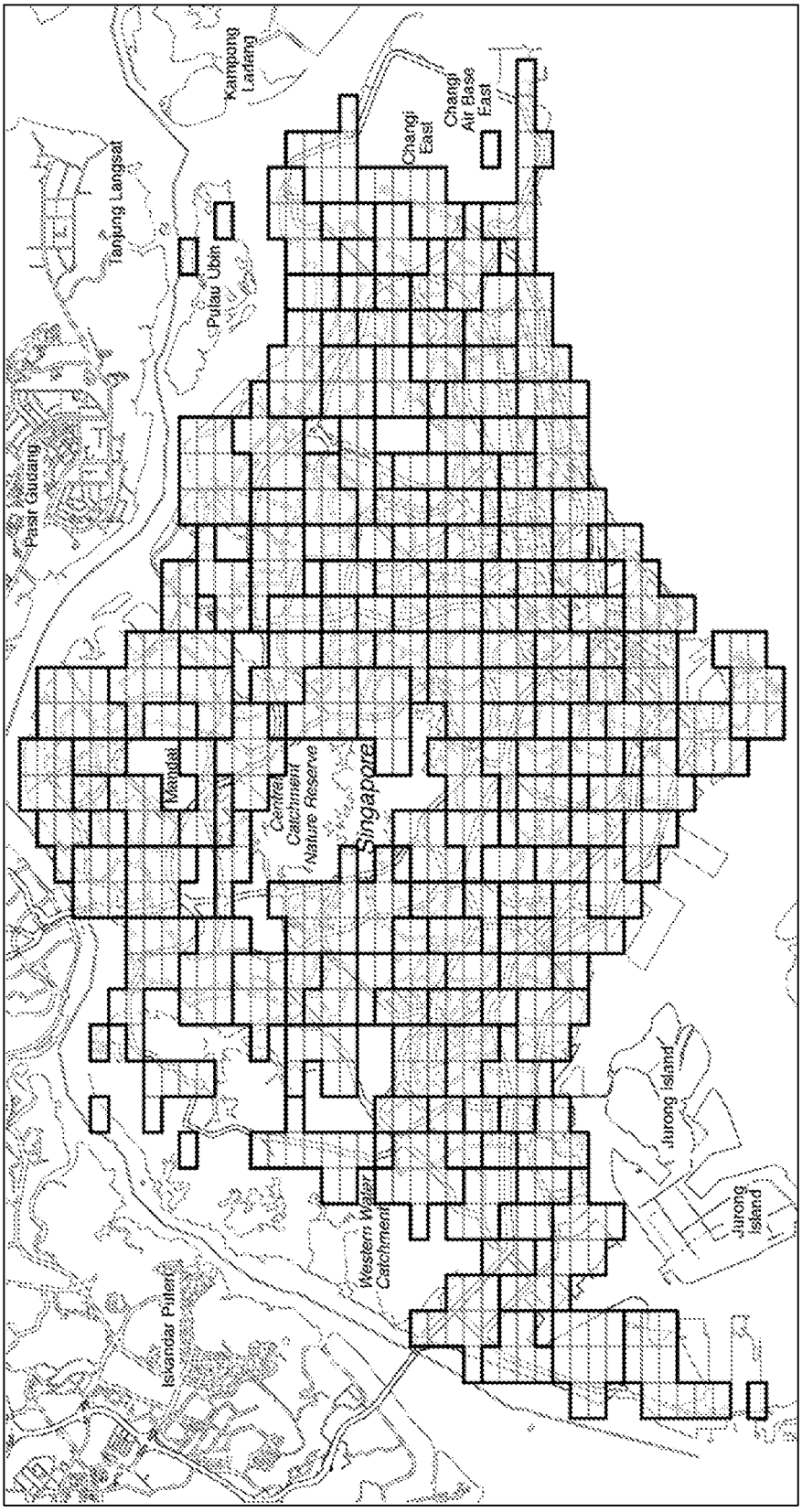
Kampong Ladang
Changi Air Base East
Changi East
Tanjung Langsat
Pulau Ubin
Pasir Gudang
Mandai
Central Catchment Nature Reserve
Singapore
Jurong Island
Jurong Island
Western Water Catchment
Iskandar Puteri

FIG. 6A

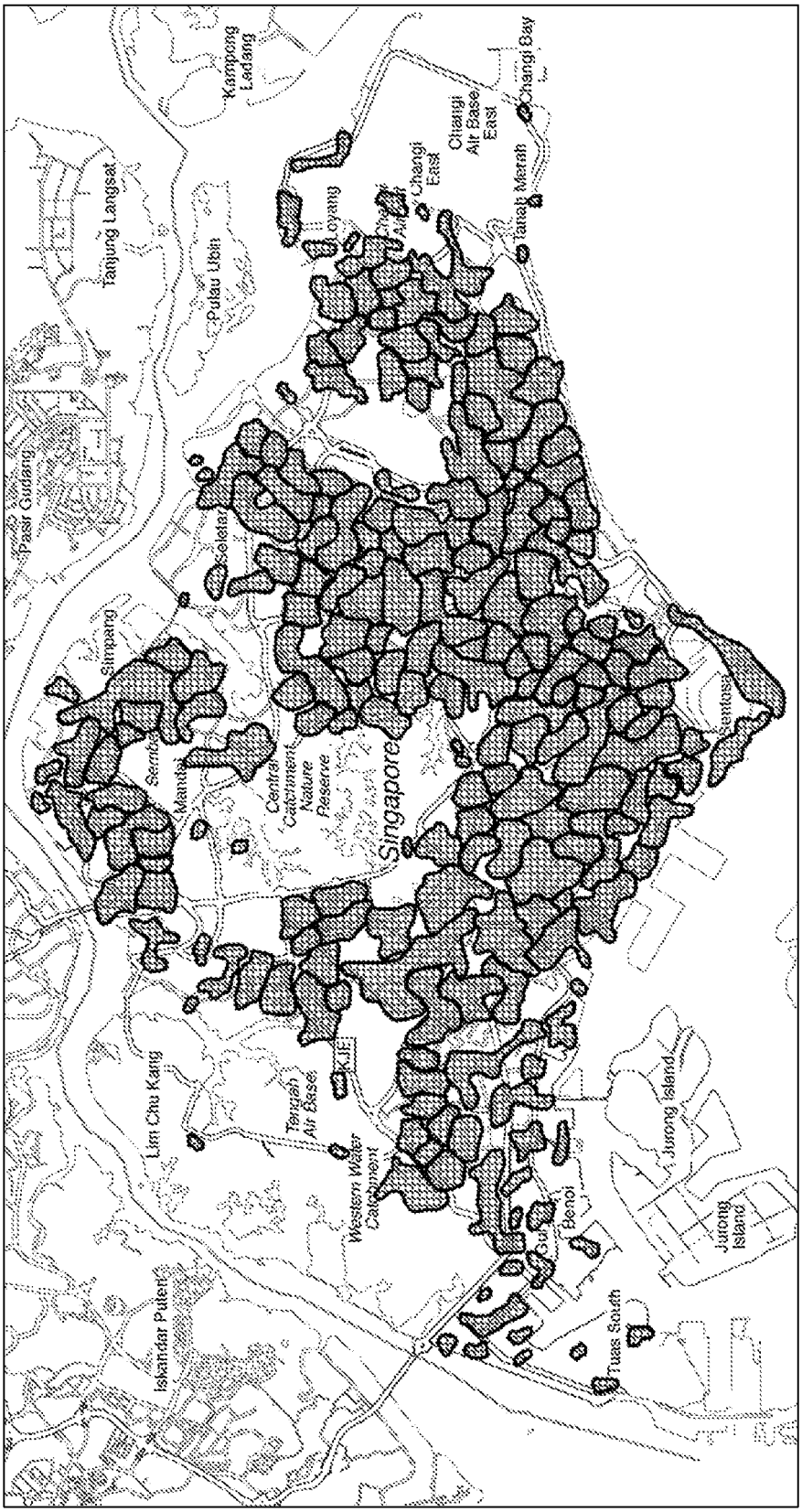
Kampong Ladang
Tanjung Langsat
Pulau Ubin
Changi Air Base East
Changi East
Changi Bay
Tanah Merah
Loyang
Pasir Gudang
Simpang
Central Catchment Nature Reserve
Singapore
Lim Chu Kang
Tengah Air Base
Western Water Catchment
Jurong Island
Benoi
Tuas South
Iskandar Puteri

FIG. 6B

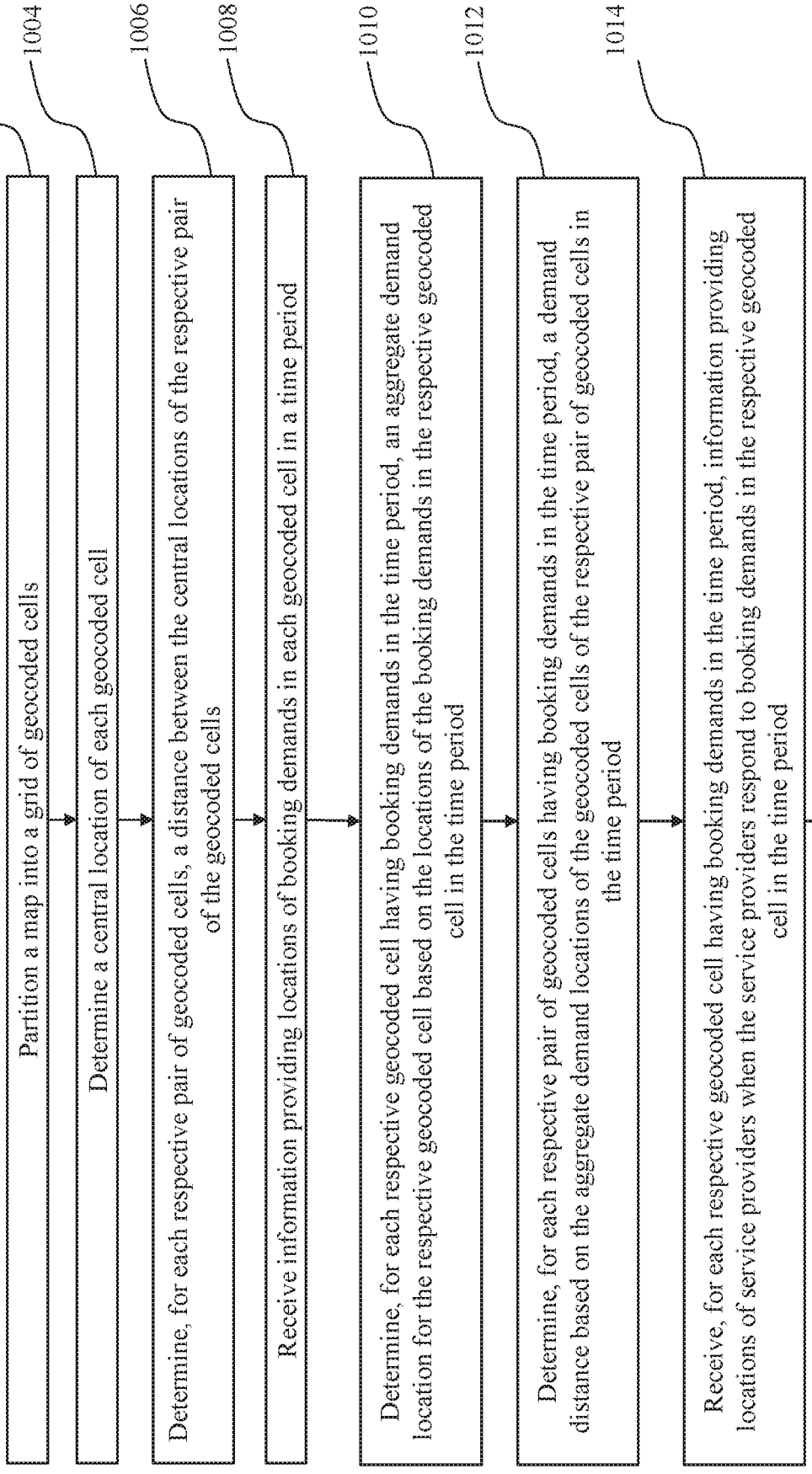
1002
Partition a map into a grid of geocoded cells
1004
Determine a central location of each geocoded cell
1006
Determine, for each respective pair of geocoded cells, a distance between the central locations of the respective pair of the geocoded cells
1008
Receive information providing locations of booking demands in each geocoded cell in a time period
1010
Determine, for each respective geocoded cell having booking demands in the time period, an aggregate demand location for the respective geocoded cell based on the locations of the booking demands in the respective geocoded cell in the time period
1012
Determine, for each respective pair of geocoded cells having booking demands in the time period, a demand distance based on the aggregate demand locations of the geocoded cells of the respective pair of geocoded cells in the time period
1014
Receive, for each respective geocoded cell having booking demands in the time period, information providing locations of service providers when the service providers respond to booking demands in the respective geocoded cell in the time period

FIG. 7A

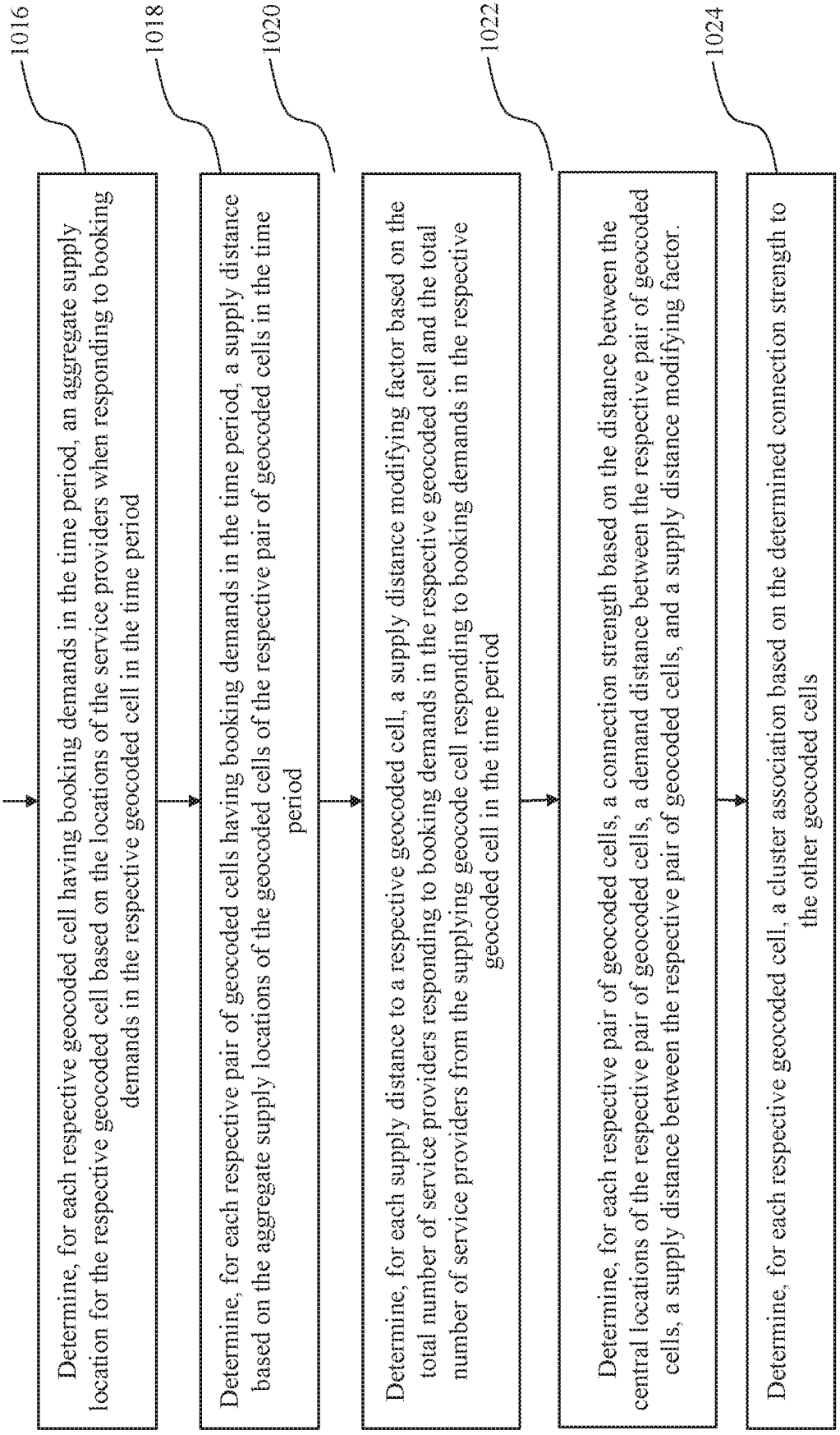
1016
Determine, for each respective geocoded cell having booking demands in the time period, an aggregate supply location for the respective geocoded cell based on the locations of the service providers when responding to booking demands in the respective geocoded cell in the time period
1018
Determine, for each respective pair of geocoded cells having booking demands in the time period, a supply distance based on the aggregate supply locations of the geocoded cells of the respective pair of geocoded cells in the time period
1020
Determine, for each supply distance to a respective geocoded cell, a supply distance modifying factor based on the total number of service providers responding to booking demands in the respective geocoded cell and the total number of service providers from the supplying geocode cell responding to booking demands in the respective geocoded cell in the time period
1022
Determine, for each respective pair of geocoded cells, a connection strength based on the distance between the central locations of the respective pair of geocoded cells, a demand distance between the respective pair of geocoded cells, a supply distance between the respective pair of geocoded cells, and a supply distance modifying factor.
1024
Determine, for each respective geocoded cell, a cluster association based on the determined connection strength to the other geocoded cells

FIG. 7B

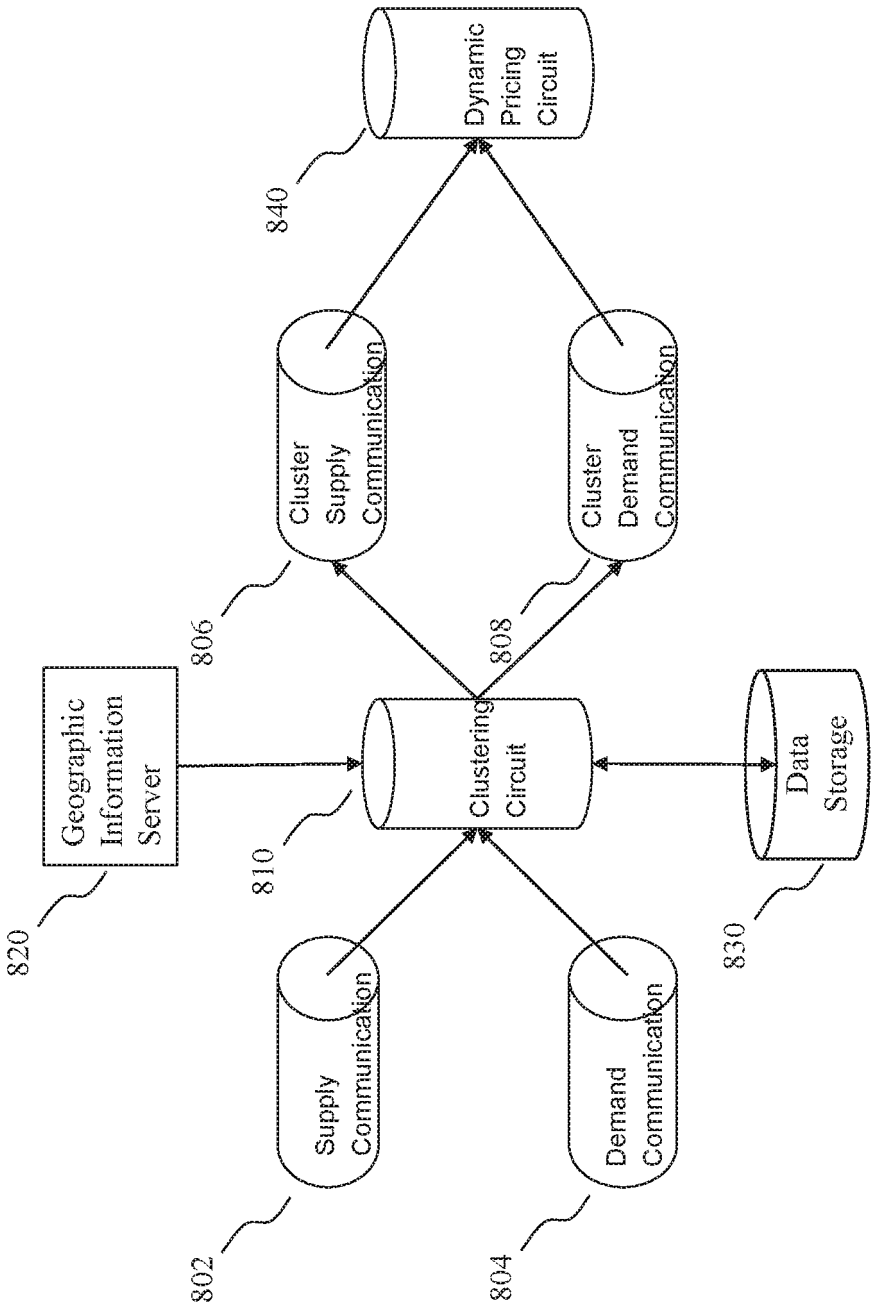
Dynamic Pricing Circuit
840
Cluster Supply Communication
Cluster Demand Communication
806
808
Geographic Information Server
820
Clustering Circuit
810
Data Storage
830
Supply Communication
Demand Communication
802
804

FIG. 8

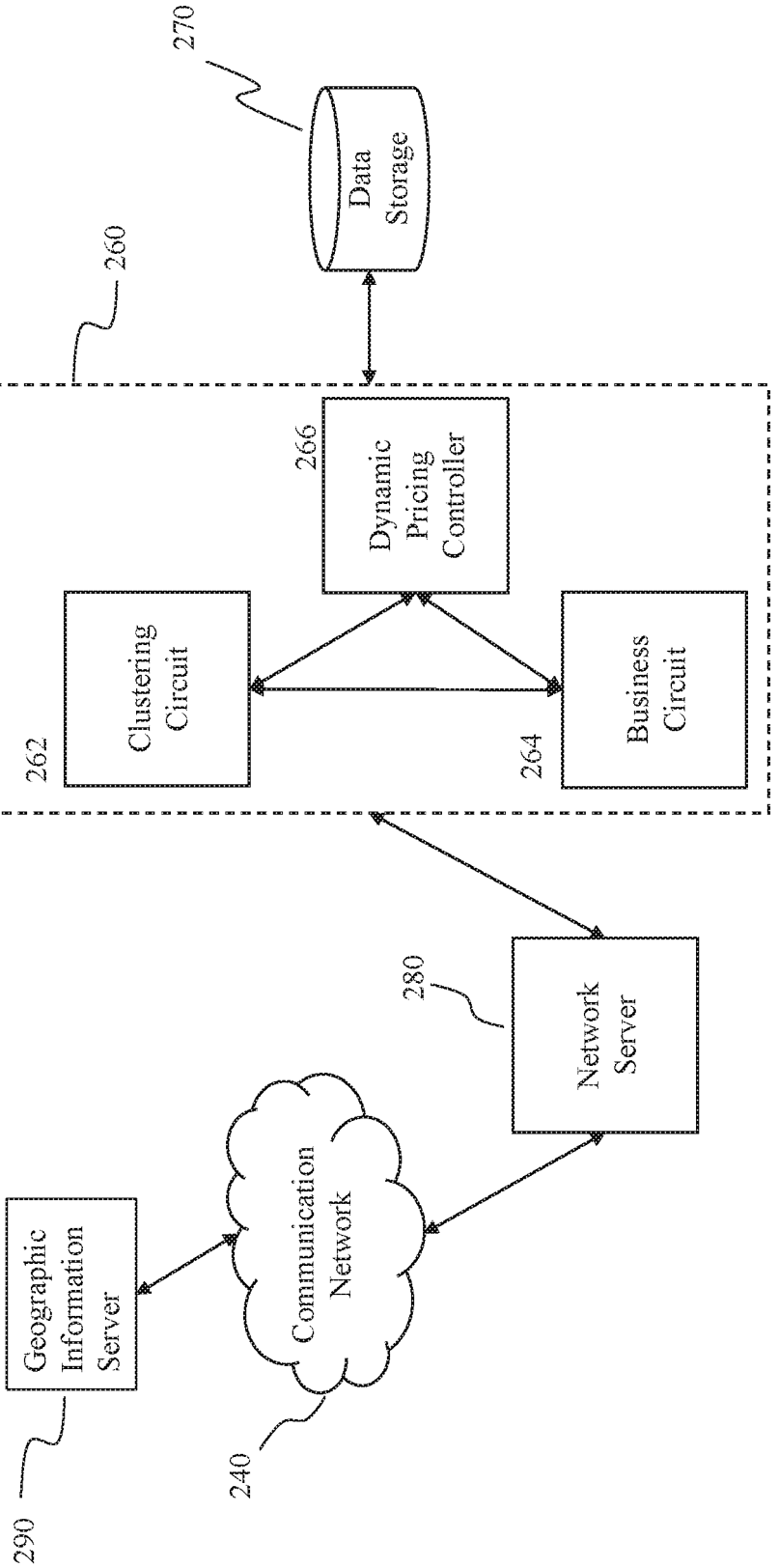
210
270
Data Storage
260
266
Dynamic Pricing Controller
262
Clustering Circuit
264
Business Circuit
280
Network Server
Communication Network
240
Geographic Information Server
290

FIG. 9