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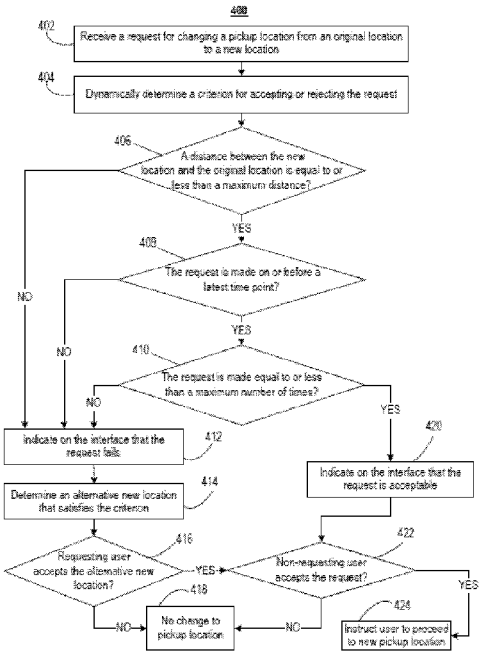

FIG. 4

(57) Abstract: Systems and methods for changing a pickup location in a transportation service are provided. An exemplary method may include receiving, through an interface displayed on a terminal device associated with a user, a request for changing a pickup location from an original location to a new location. A transportation service request initiated by a passenger based on the original location is accepted by a service provider. The method may also include determining whether the request satisfies a criterion. The method may further include, when the request satisfies the criterion, indicating on the interface that the request is acceptable, and when the request does not satisfy the criterion, indicating on the interface that the request fails.

SYSTEMS AND METHODS FOR CHANGING PICKUP LOCATIONS IN TRANSPORTATION SERVICES

TECHNICAL FIELD

[0001] The present disclosure relates to providing transportation services, and more particularly, to methods and systems for changing pickup locations in transportation services.

BACKGROUND

[0002] An online hailing platform (e.g., DiDi™ online) can receive a rideshare service request from a passenger and then route the service request to at least one transportation service provider (e.g., a taxi driver, a private car owner, or the like). The service request can be answered by a service provider or assigned to a service provider if no one picks up the service request within a predetermined time period. The driver and the passenger may each communicate via an application installed on a terminal device such as a mobile phone. The application may display various information within a display region on the terminal device. For example, on the passenger terminal, the application may display driver and/or vehicle information, trip information, trip cost, a navigation map, etc.

[0003] Sometimes, after a service request has been answered or when the service provider is already on the way, the passenger or the service provider may want to change the pickup location for various reasons such as change of mind, traffic condition, etc. Currently, the pickup location cannot be changed once set within the same service request. If a passenger needs to change the pickup location, he or she will have to cancel the current service request and initiate a new service request with the new pickup location. This is inconvenient and may be costly too as the passenger may be charged a fee for cancelling a service request when the service provider is already on the way. The service provider also does not have the ability to change the pickup location even if the traffic condition prevents the service provider from arriving at the pickup location on time. Late arrival could cause user dissatisfaction and complaint despite that the service provider was not at fault.

[0004] Embodiments of the present disclosure provide methods and systems that address the aforementioned shortcomings.

SUMMARY

[0005] Embodiments of the disclosure provide a computer-implemented method of changing a pickup location in a transportation service. An exemplary method may include

receiving, through an interface displayed on a terminal device associated with a user, a request for changing a pickup location from an original location to a new location. A transportation service request initiated by a passenger based on the original location is accepted by a service provider. The method may also include determining whether the request satisfies a criterion. The method may further include, when the request satisfies the criterion, indicating on the interface that the request is acceptable. Additionally, the method may include, when the request does not satisfy the pre-set criterion, indicating on the interface that the request fails.

[0006] Embodiments of the disclosure further disclose a system for changing a pickup location in a transportation service. An exemplary system may include a processor and a display coupled to the processor. The processor may be configured to receive, through an interface displayed on a terminal device associated with a user, a request for changing a pickup location from an original location to a new location. A transportation service request initiated by a passenger based on the original location is accepted by a service provider. The processor may be also configured to determine whether the request satisfies a criterion. The processor may further be configured to, when the request satisfies the criterion, indicate on the interface that the request is acceptable. Additionally, the processor may be configured to, when the request does not satisfy the criterion, indicate on the interface that the request fails. The display may be coupled to the processor and configured to display the interface.

[0007] Embodiments of the disclosure further disclose a system for changing a pickup location in a transportation service. An exemplary system may include a communication interface configured to receive a request for changing a pickup location from an original location to a new location and at least one processor coupled to the communication interface. The processor may be configured to determine whether the request satisfies a criterion. The processor may also be configured to, when the request satisfies the criterion, send a first instruction to a terminal device associated with a user indicating that the request is acceptable. Additionally, the processor may be configured to, when the request does not satisfy the criterion, send a second instruction to the terminal device associated with the user indicating that the request fails.

[0008] Embodiments of the disclosure further disclose a non-transitory computer-readable medium. The non-transitory computer-readable medium may store a set of instructions, when executed by at least one processor of an electronic device, cause the electronic device to perform a method of changing a pickup location in a transportation service. The method may include receiving, through an interface displayed on a terminal device associated with a

user, a request for changing a pickup location from an original location to a new location. A transportation service request initiated by a passenger based on the original location is accepted by a service provider. The method may also include determining whether the request satisfies a criterion. The method may further include, when the request satisfies the criterion, indicating on the interface that the request is acceptable. Additionally, the method may include, when the request does not satisfy the criterion, indicating on the interface that the request fails.

[0009] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 illustrates a block diagram of an exemplary terminal device configured to display information associated with changing a pickup location in a transportation service, according to embodiments of the disclosure.

[0011] FIG. 2 illustrates an exemplary display region on a terminal device displaying a map and a maximum distance the new location is permitted to be away from the original location, according to embodiments of the disclosure.

[0012] FIG. 3 illustrate an exemplary display region on a terminal device displaying an interface for changing a pickup location, according to embodiments of the disclosure.

[0013] FIG. 4 illustrates a flowchart of an exemplary method of changing a pickup location in a transportation service, according to embodiments of the disclosure.

[0014] FIG. 5 illustrates a flowchart of another exemplary method of changing a pickup location in a transportation service, according to embodiments of the disclosure.

DETAILED DESCRIPTION

[0015] Reference will now be made in detail to the exemplary embodiments, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

[0016] An aspect of the disclosure is directed to a system for changing a pickup location in a transportation service. For example, the passenger or the service provider (driver), through using a transportation service application, may request changing the pickup location from its original location to a new location. Accordingly, the system may determine whether the request satisfies a criterion such as a distance limit, a time limit, or a number of change limit.

The display of the system may display information for facilitating the user to make the request and information for indicating that the request is successful or fails.

[0017] In some embodiments, the system may be implemented as part of an online ride hailing service (also referred to as an online ride sharing service), where a driver provides transportation service to a passenger using a service vehicle. In such a context, the terminal device may be a mobile phone, a wearable device, a PDA, etc. used by the driver ("a driver terminal") or the passenger ("a passenger terminal"). The system may include a processor and a display couple to the processor. The processor may be configured to process and arrange information on the display.

[0018] FIG. 1 is a block diagram depicting an exemplary terminal device 100, according to embodiments of the disclosure. The terminal device 100 may include any suitable device that can display information to a user, e.g., a smart phone, a tablet, a wearable device, a computer, or the like. In some embodiments, the terminal device 100 may be a driver terminal used by the transportation service provider. In some other embodiments, the terminal device 100 may be a passenger terminal used by the passenger requesting the transportation service. Description of the terminal device 100 will be made using a passenger terminal as an example, but one skilled in the art will be able to adapt the described features of terminal device 100 to a driver terminal.

[0019] As shown in FIG. 1, the terminal device 100 may include a communication interface 104, a processor 106, a memory/storage device 108, and a display 110. The communication interface 104 may include an integrated service digital network (ISDN) card, a cable modem, a satellite modem, or a modem to provide a data communication connection. As another example, the communication interface 104 may include a local area network (LAN) card to provide a data communication connection to a compatible LAN. Wireless links can also be implemented by communication interface 104. In such an implementation, the communication interface 104 can send and receive electrical, electromagnetic or optical signals that carry digital data streams representing various types of information via a network. The network can typically include a cellular communication network, a Wireless Local Area Network (WLAN), a Wide Area Network (WAN), or the like.

[0020] The communication interface 104 may be configured to send a transportation service request. The transportation service request may include, among other things, passenger information, a trip origin, a trip destination, or the like. The transportation service request may be accepted by or otherwise matched with a service vehicle. The communication interface 104 may be configured to receive driver and vehicle information

from a server 140 or directly from a driver terminal (not shown) associated with a service vehicle. Service vehicles may include taxi cars or private cars enrolled with an online hailing platform. In some embodiments, service vehicles may also include autonomous driving vehicles. The online hailing platform may maintain a database for storing profiles for the enrolled vehicles and the associated drivers. Vehicle information may include, e.g., vehicle position, vehicle year, maker, and model, as well as other features or characteristics associated with the service vehicle. Driver information may include, e.g., driver's name, picture, or other identification information, driver's license number, driving record, driver's customer reviews.

[0021] The communication interface 104 may also receive navigation information, e.g., current position of the service vehicle, traffic data, map data, after the transportation service request is accepted. In some embodiments, a navigation device onboard the service vehicle or the driver terminal may provide the vehicle position to the communication interface 104 directly or through the server 140. In some embodiments, the communication interface 104 may be configured to receive other data from the server 140, such as map data, real-time traffic information, weather information, road blocking information, etc. The updates may be received periodically, e.g., every 0.1 second, every second, every 5 seconds, or upon an update request.

[0022] The processor 106 may include any appropriate type of general-purpose or special-purpose microprocessor, digital signal processor, or microcontroller. The processor 106 may be configured as a separate processor module dedicated to rendering display of transportation service, map, and/or navigation information. Alternatively, the processor 106 may be configured as a shared processor module for performing other functions unrelated to information display. The processor 106 may include one or more hardware units (e.g., portion(s) of an integrated circuit) designed for use with other components or to execute part of a program. The program may be stored on a computer-readable medium, and when executed by the processor 106, it may perform one or more functions.

[0023] The memory/storage device 108 may include any appropriate type of mass storage provided to store any type of information that the processor 106 may process. The memory/storage device 108 may be a volatile or non-volatile, magnetic, semiconductor-based, tape-based, optical, removable, non-removable, or other type of storage device or tangible (i.e., non-transitory) computer-readable medium including, but not limited to, a ROM, a flash memory, a dynamic RAM, and a static RAM. The memory/storage device 108 may be configured to store one or more computer programs that may be executed by the

processor 106 to render display of transportation service, map, and/or navigation information. For example, the memory/storage device 108 may be configured to store program(s) that may be executed by the processor 106 to arrange and update the various elements displayed within a display region.

[0024] The memory/storage device 108 may be further configured to store information and data used by the processor 106. For instance, the memory/storage device 108 may be configured to store the various types of data (e.g., transportation service request, vehicle information, driver information, updated trip information, map data, traffic data, etc.) received by communication interface 104. The memory/storage device 108 may also store intermediate data such as rendered map portions, navigation routes, size and shape of the elements displayed in the display region, etc. The various types of data may be stored permanently, removed periodically, or disregarded immediately after each frame of data is processed.

[0025] The display 110 may include a display such as a Liquid Crystal Display (LCD), a Light Emitting Diode Display (LED), a plasma display, or any other type of display, and provide a Graphical User Interface (GUI) presented on the display for user input and data depiction. The display 110 may include a number of different types of materials, such as plastic or glass, and may be touch-sensitive to receive inputs from the user. For example, the display 110 may include a touch-sensitive material that is substantially rigid, such as Gorilla Glass™, or substantially pliable, such as Willow Glass™.

[0026] In some embodiments, the processor 106 may be configured to render the various information to be displayed in a display region on the display 110. For example, the processor 106 may determine a relevant portion of the map data and render it into a navigation map for displaying in the display region. The processor 106 may also render various other elements, including e.g., display elements, location symbols, and a navigation route, to be displayed within the display region and overlapped with (e.g., on top of) the navigation map. As shown in FIG. 2, the display region 200 may display a navigation map 210 and an information section 220. The information section 220 may include the information of a pickup location and instruction for user to request a change of the pickup location. Displayed on top of the navigation map are an original pickup location symbol 230, a circle 240 around the original pickup location symbol 230 for indicating the distance limit within which a new pickup location (such as a new pickup location 250 where the passenger is current located) may be requested.

[0027] FIG. 3 shows another interface for making changes to a pickup location. As shown in FIG. 3, a display region 300 may display a navigation map 310 and an information section 320. The information section 320 may include the trip information such as the diver's name, vehicle ID number, and contact methods (e.g., by phone calls or messages) as well as instruction for the user to cancel the ride, share the ride, or request help. Displayed on top of the navigation map 310 are an original pickup location symbol 330 and an associated display element 340, a navigation route 350, and a service vehicle symbol 360 and an associated display element 370. The display element 340 associated with the original pickup location symbol 330 may include a button 345 (such as an "Edit" button) for the user to initiate a request to change the pickup location. The display element 370 associated with the service vehicle symbol 360 may include information for indicating the distance between the current location of the service vehicle to the original pickup location and the time needed for the service vehicle to arrive at the original pickup location from the current location of the service vehicle. The distance and time information may be used to determine whether a user's request to change the pickup location would be granted.

[0028] In some embodiments, the processor 106 may position the location symbols, including the service vehicle symbol 360 and the pickup location symbols 230, 330, on the navigation map corresponding to their physical locations. For example, the service vehicle symbol 360 may be placed at the current location of the service vehicle. As the vehicle travels along route 350, the service vehicle symbol 360 may move accordingly to indicate the vehicle's current location. Likewise, the pickup location symbols 230, 330 may be positioned at the location where the passenger will be picked up.

[0029] FIG. 4 illustrates a flowchart of an exemplary method 400 of changing a pickup location in a transportation service, according to embodiments of the disclosure. The method 400 may be implemented by the terminal device 100, the server 140, or jointed by the terminal device 100 and the server 140. In the following, the method 400 will be described as being implemented by the terminal device 100. But this implementation is only exemplary. The method 400 may include steps 402-424 as described below. It is to be appreciated that some of the steps may be optional to perform the disclosure provided herein. Further, some of the steps may be performed simultaneously, or in a different order than shown in FIG. 4.

[0030] In step 402, the terminal device 100 may receive a request for changing a pickup location from an original location to a new location. The terminal device 100 may receive such information through its communication interface 104. In some embodiments, the

request information may be received from the server 140, a user terminal associated with the passenger, or a driver terminal associated with the service vehicle. Similarly, the current location of the service vehicle may be received directly from the driver terminal or through the server 140. The transportation service request initiated by a passenger based on the original location may be accepted by a service provider. In some embodiments, a user may request to change the pickup location after the transportation service request is accepted by a service provider. For example, a passenger may request to change the pickup location when the original pickup location is inconvenient to reach due to, for example, distance from the passenger's current location to the original pickup location, traffic conditions, lack of pedestrian pathways, etc. In another example, a driver may request to change the pickup location when, for example, current traffic conditions prevent the driver form arriving at the original location on time, route to the original pickup location is complicated or difficult, etc. The request for changing the pickup location may be received by receiving an input from the user indicating the new location.

[0031] The input may include dragging a pointer on a map or dragging the map with respect to the pointer. For example, a user may drag symbol 230 shown in FIG. 2 or drag map 210 with respect to symbol 230 shown in FIG. 2. The request for changing the pickup location may also be received by receiving an input from the user indicating an address of the new location. For example, a user may enter the address of the new pickup location by clicking button 345 shown in FIG. 3.

[0032] The request for changing a pickup location may further be received by providing one or more suggested pickup locations to the user and receiving an input from the user indicating a selection of the new location from the suggested pickup locations. For example, the suggested pickup locations may be determined using a learning model trained based on historical transportation service data including past pickup locations within the area 240 (shown in FIG. 2). The user may select the preferred pickup location from the one or more suggested pickup locations by, for example, clicking on a corresponding symbol displayed on map 210 or selecting the address or name of the new pickup location from a list.

[0033] In some embodiments, one or more suggested pick-up locations may be determined based on historical transportation service data. For example, pick-up location information of past transportation requests may be collected and analyzed to determine optimal pick-up locations within a pick-up area. Various factors may be used to determine the pick-up location. For example, the frequency of a particular place is used as a pick-up location may

indicate the place is suitable for serving as a convenient pick-up place. Similarly, the number of orders, the distribution of pick-ups throughout the day, etc., can also be used as the factors.

[0034] In some embodiments, a pick-up location may be determined by optimizing a pick-up route between a service vehicle's location to the pick-up location. For example, a pick-up location may be selected at places that minimize the distance, driving time, or traffic for a driver to reach the pick-up location from its current location. In another example, a pick-up location may be selected at one side of a road so that a driver does not have to make a U-turn or other complicated or time-consuming routes. In a further example, a pick-up location may be selected at places permitting passenger pick-up, such as the entrance of a hotel, park, etc., and by avoiding places such as bus stops, traffic circles, etc.

[0035] In some embodiments, a pick-up location may be determined to minimize a likelihood of cancellation of the transportation service. For example, a learning model may be trained based on historical data correlating pick-up locations and cancellations of service. The learning model may then be used to predict, based on factors of a current service request and available pick-up locations, a probability of cancellation for each available pick-up location. The processor 106 may select the pick-up location that is associated with the lowest probability of cancellation.

[0036] In step 404, a criterion for accepting or rejecting the request may be dynamically determined. The determination may be made at the terminal device 100, the server 140, or jointed by the terminal device 100 and the server 140. The criterion may include at least one of a distance limit, a time limit, and a number of change limit. The distance limit may set a maximum distance the new location is permitted to be away from the original location. The time limit may set a latest time point at which the request is permitted. The number of change limit may set a maximum number of times the request can be made.

[0037] The determination of the criterion may be made dynamically based on multiple factors including circumstances associated with the new location, circumstances associated with a time the request being made, traffic conditions, availability of service providers, and historical transportation service data. In some embodiments, the criterion may be determined in real time.

[0038] In some embodiments, circumstances associated with the new location may include the types of the location such as city, suburban or rural area. For a same distance, a city location may require more driving time than a suburban location or a rural location due to, for example, heavier traffic. Therefore, for example, if a user requests to change the pickup location to a city location, the maximum distance the new location is permitted to be away

from the original location may be set to be shorter than if the user requests to change the pickup location to a suburban location or a rural location, because the driver would need more time to travel the same distance. The circumstances associated with the requested new pickup location may also include the accessibility of the location such as whether it is easy to park at the location and whether a U-turn is required, etc.

[0039] In some embodiments, circumstances associated with a time the request being made may include the time of the day. For example, during the morning or afternoon rush hour, the maximum distance the new location is permitted to be away from the original location may be set to be shorter due to the anticipated heavy traffic, than when the request is made during the day in between the rush hours or evening. Circumstances associated with a time the request being made may also include whether it is a holiday, a no school day or other special circumstances that would affect the traffic.

[0040] Other factors to be considered in dynamically determining the criterion may include traffic conditions, availability of service providers, and historical transportation service data. For example, when traffic is light, a relatively large maximum distance may be set to allow greater flexibility to change the pickup location. When traffic is heavy, however, a relatively small maximum distance may be set to avoid wasting time and resource involved in changing the pickup location. Similarly, when there are more service providers available, a relatively large maximum distance may be set to allow greater flexibility to change the pickup location, whereas when there are fewer service providers available, a relatively short maximum distance may be set so as to avoid causing delay which can affect the service availability to other customers. Historical transportation service data to be considered may include past pickup success, cancellations or complains associated with the requested new pickup location.

[0041] The above examples illustrated how different circumstances may affect the determination of the maximum distance the new location is permitted to be away from the original location. Similarly, these different circumstances may also affect the determination of the latest time point at which the request is permitted and the maximum number of times the request can be made, as these three types of criterion are generally interrelated. For example, when the traffic is light, the latest time point at which the request is permitted may be set closer to the anticipated arrival time and the maximum number of times the request can be made may be set more than one as the likelihood of delay is low. As another example, when there are more service providers available, the latest time point at which the request is permitted may be set closer to the anticipated arrival time and the maximum number of times

the request can be made may be set more than one as any potential delay would have less impact on the service availability to other customers.

[0042] Generally, the maximum number of times the request may be set to be one. As a result, a user may only be allowed to change the pickup location once. However, under certain circumstance as described above, a user may be allowed to change the pickup location multiple times. A user may also be allowed to change the pickup location multiple times by paying a fee. For example, the first time may be free of charge, and later changing of the pickup location may be subject to a change fee. Whether more than one change request is allowed may be dynamically determined based on the user history such as past willingness to pay extra or may be determined through interaction with the user.

[0043] In some embodiments, the user may be allowed to change the pickup locations any time before the driver arrives at the original pickup location. For example, a user may pay a fee for this privilege or a service provider may offer this benefit as a promotion to attract more customers.

[0044] The dynamical determination of the criterion for accepting or rejecting a request is not be limited to the manner as described above. Rather, the dynamical determination may be implemented in a different or even opposite manner.

[0045] In steps 406-410, the terminal device 100 and/or the server 140 may determine whether the request satisfies the dynamically determined criterion. Specifically, in the example as shown in FIG. 4, in step 406, it is determined whether a distance between the new location and the original location is equal to or less than a maximum distance permitted. If the distance is equal to or less than the maximum distance, it may then be determined in step 408 whether the request is made on or before a latest time point. If the request is made on or before a latest time point, it may be further determined in step 410 whether the request is made equal to or less than a maximum number of times. If the request is made equal to or less than a maximum number of times, the interface 104 may indicate that the request is acceptable in step 420. However, if it is determined in any one of steps 406-410 that the request does not satisfy the specific criterion, the interface may indicate that the request fails in step 412. It is noted that steps 406-410 may be performed in any order. In addition, one or more of steps 406-410 may be omitted according to some embodiments.

[0046] It is noted that the user may be the passenger or the service provider. In other words, both the passenger and the service provider (such as the driver) may request the change of the pickup location. After the request is determined to be acceptable, in step 422, the non-requesting user (either the passenger or the service provider) may be afforded the

opportunity to accept or reject the request. Specifically, when it is the passenger who initiates the request, the system will provide an option to the service provider to allow the service provider to accept the request or reject of the request even if it is determined that the request satisfies the criterion. Similarly, when it is the service provider who initiates the request, the system will provide an option to the passenger to allow the passenger to accept the request or reject of the request even if it is determined that the request satisfies the criterion. If the non-requesting user accepts the request, in step 424, the service provider and/or the passenger may be instructed to proceed to the new pickup location to carry out the pickup. If the non-requesting user rejects the request, the process ends in step 418, in which no change to the pickup location occurs.

[0047] After it is determined that the request does not satisfy the criterion and indicated on the interface that the request fails in step 412, an alternative new location that satisfies the criterion may be optionally determined in step 414. The alternative new location may be determined in a way similar to the determination of a suggested pickup location as described above. If the requesting user accepts the alternative new location in step 416, the process may proceed to step 422 for the non-requesting user to accept or reject the request based on the alternative new location. If the requesting user does not accept the alternative new location in step 416 the process ends in step 418. If the non-requesting user rejects the request based on the alternative new location in step 422, the process ends in step 418.

[0048] FIG. 5 illustrates a flowchart of another exemplary method 500 of changing a pickup location in a transportation service, according to embodiments of the disclosure. In step 502, the terminal device 100 may receive, through an interface displayed on the terminal device associated with a user, a request for changing a pickup location from an original location to a new location. A transportation service request initiated by a passenger based on the original location has been accepted by a service provider. The request may be received in similar ways as described in detail above associated with step 402.

[0049] In step 504, a determination may be made as to whether the request satisfies a criterion. The criterion may include at least one of a distance limit, a time limit, and a number of change limit. The criterion may be pre-determined. For example, the distance limit may be set at 200 meters, the time limit may be set as 2 minutes before arrival time, and the number of change limit may be set as one change allowed. Alternatively, the criterion may be dynamically determined in similar ways as described in detail above associated with step 404. The determination of whether the criterion is satisfied or not may be implemented by any combination of steps 406, 408, and/or 410.

[0050] When the request satisfies the criterion, in step 508 it may be indicated on the interface that the request is acceptable, similar to step 420. When the request does not satisfy the criterion, in step 506 it may be indicated on the interface that the request fails, similar to step 412. Additional steps may be implemented following step(s) 506/508, similar to those shown in FIG. 4.

[0051] Another aspect of the disclosure is directed to a non-transitory computer-readable medium storing instructions which, when executed, cause one or more processors to perform the methods, as discussed above. The computer-readable medium may include volatile or non-volatile, magnetic, semiconductor-based, tape-based, optical, removable, non-removable, or other types of computer-readable medium or computer-readable storage devices. For example, the computer-readable medium may be the storage device or the memory module having the computer instructions stored thereon, as disclosed. In some embodiments, the computer-readable medium may be a disc or a flash drive having the computer instructions stored thereon.

[0052] It will be apparent to those skilled in the art that various modifications and variations can be made to the disclosed system and related methods. Other embodiments will be apparent to those skilled in the art from consideration of the specification and practice of the disclosed system and related methods.

[0053] It is intended that the specification and examples be considered as exemplary only, with a true scope being indicated by the following claims and their equivalents.

WHAT IS CLAIMED IS:

1. A computer-implemented method of changing a pickup location in a transportation service, comprising:

receiving, through an interface displayed on a terminal device associated with a user, a request for changing a pickup location from an original location to a new location, wherein a transportation service request initiated by a passenger based on the original location is accepted by a service provider;

determining whether the request satisfies a criterion;

when the request satisfies the criterion, indicating on the interface that the request is acceptable; and

when the request does not satisfy the criterion, indicating on the interface that the request fails.

2. The method of claim 1, further comprising:

receiving an input from the user indicating the new location, wherein the input includes dragging a pointer on a map or dragging the map with respect to the pointer.

3. The method of claim 1, further comprising:

receiving an input from the user indicating an address of the new location.

4. The method of claim 1, further comprising:

determining one or more suggested pickup locations using a learning model, the learning model is trained based on historical transportation service data;

providing the one or more suggested pickup locations to the user on the interface; and

receiving an input from the user indicating a selection of the new location from the suggested pickup locations.

5. The method of any one of claims 1 to 4, wherein the criterion is predetermined.

6. The method of any one of claims 1 to 4, further comprising:

dynamically determining the criterion for accepting or rejecting the request.

7. The method of claim 6, further comprising:

dynamically determining the criterion based on at least one of:

circumstances associated with the new location;

circumstances associated with a time the request being made;

traffic conditions;

availability of service providers; or

historical transportation service data.

8. The method of any one of claims 1 to 7, wherein the criterion includes at least one of a distance limit, a time limit, or a number of change limit.

9. The method of claim 8, wherein:

the criterion includes the distance limit defining a maximum distance the new location is permitted to be away from the original location; and

the method further comprises:

determining that the request satisfies the criterion when a distance between the new location and the original location is equal to or less than the maximum distance.

10. The method of claim 8, wherein:

the criterion includes the time limit defining a latest time point at which the request is permitted; and

the method further comprises:

determining that the request satisfies the criterion when the request is made on or before the latest time point.

11. The method of claim 8, wherein:

the criterion includes the number of change limit defining a maximum number of times the request can be made; and

the method further comprises:

determining that the request satisfies the pre-determined criterion when the request is made equal to or less than the maximum number of times.

12. The method of any one of claims 1 to 11, wherein:

the user is the passenger; and

the method further comprises:

receiving a response from the service provider indicating acceptance or rejection of the request.

13. The method of any one of claims 1 to 11, wherein:

the user is the service provider; and

the method further comprises:

receiving a response from the passenger indicating acceptance or rejection of the request.

14. The method of any one of claims 1 to 13, further comprising:

when the request does not satisfy the criterion, determining an alternative new location that satisfies the criterion and providing information of the alternative new location on the interface.

15. The method of claim 14, further comprising:

receiving a response from the user indicating acceptance or rejection of the alternative new location.

16. A system for changing a pickup location in a transportation service, comprising:

a processor configured to:

receive, through an interface, a request from a user for changing a pickup location from an original location to a new location, wherein a transportation service request initiated by a passenger based on the original location is accepted by a service provider;

determine whether the request satisfies a criterion;

when the request satisfies the criterion, indicate on the interface that the request is acceptable; and

when the request does not satisfy the criterion, indicate on the interface that the request fails; and

a display coupled to the processor and configured to display the interface.

17. The system of claim 16, wherein:

the processor is further configured to receive an input from the user indicating the new location, wherein the input includes dragging a pointer on a map or dragging the map with respect to the pointer; and

the display is further configured to display the pointer on the map.

18. The system of claim 16, wherein:

the processor is further configured to receive an input from the user indicating an address of the new location; and

the display is further configured to display an address bar for entering the address of the new location.

19. The system of claim 16, wherein:

the processor is further configured to:

determine one or more suggested pickup locations using a learning model, the learning model is trained based on historical transportation service data;

provide the one or more suggested pickup locations to the user on the interface; and

receive an input from the user indicating a selection of the new location from the suggested pickup locations; and

the display is further configured to display the one or more suggested pickup locations.

20. The system of any one of claims 16 to 19, wherein the criterion is predetermined.

21. The system of any one of claims 16 to 19, wherein the processor is further configured to dynamically determine the criterion for accepting or rejecting the request.

22. The system of claim 21, wherein the criterion is dynamically determined based on at least one of:

circumstances associated with the new location;

circumstances associated with a time the request being made;

traffic conditions;

availability of service providers; or

historical transportation service data.

23. The system of claim any one of claims 16-22, wherein the criterion includes at least one of a distance limit, a time limit, or a number of change limit.

24. The system of claim 23, wherein:

the criterion includes the distance limit defining a maximum distance the new location is permitted to be away from the original location; and

the processor is further configured to:

determine that the request satisfies the criterion when a distance between the new location and the original location is equal to or less than the maximum distance.

25. The system of claim 23, wherein:

the criterion includes the time limit defining a latest time point at which the request is permitted; and

the processor is further configured to:

determine that the request satisfies the criterion when the request is made on or before the latest time point.

26. The system of claim 23, wherein:

the criterion includes the number of change limit defining a maximum number of times the request can be made; and

the processor is further configured to:

determine that the request satisfies the criterion when the request is made equal to or less than the maximum number of times.

27. The system of any one of claims 16 to 26, wherein:

the user is the passenger; and

the processor is further configured to receive a response from the service provider indicating acceptance or rejection of the request.

28. The system of any one of claims 16 to 26, wherein:

the user is the service provider; and

the processor is further configured to receive a response from the passenger indicating acceptance or rejection of the request.

29. The system of any one of claims 16 to 28, wherein:

the processor is further configured to, when the request does not satisfy the criterion,

determine an alternative new location that satisfies the criterion and provide information of the alternative new location on the interface.

30. The system of claim 29, wherein:

the processor is further configured to receive a response from the user indicating acceptance or rejection of the alternative new location.

31. A system for changing a pickup location in a transportation service, comprising:

a communication interface configured to receive a request for changing a pickup location from an original location to a new location, wherein a transportation service request initiated by a passenger based on the original location is accepted by a service provider; and

at least one processor coupled to the communication interface and configured to:

determine whether the request satisfies a criterion;

when the request satisfies the criterion, send a first instruction to a terminal device associated with a user instructing the user that the request is acceptable; and

when the request does not satisfy the criterion, send a second instruction to the terminal device associated with the user indicating that the request fails.

32. The system of claim 31, wherein the processor is further configured to:

determine one or more suggested pickup locations using a learning model, the learning model is trained based on historical transportation service data;

provide the one or more suggested pickup locations to the terminal device associated with the user; and

receive an input from the user indicating a selection of the new location from the suggested pickup locations.

33. The system of any one of claims 31 to 32, wherein the processor is further configured to: dynamically determine the criterion for accepting or rejecting the request.

34. The system of claim 33, wherein the processor is further configured to:

dynamically determine the criterion based on at least one of:

circumstances associated with the new location;

circumstances associated with a time the request being made;

traffic conditions;

availability of service providers; or

historical transportation service data.

35. The system of any one of claims 31-34, wherein the processor is further configured to:

when the request does not satisfy the criterion, determine an alternative new location that satisfies the criterion and provide information of the alternative new location to the terminal device associated with the user.

36. The system of claim 35, wherein the processor is further configured to:

receive a response from the user indicating acceptance or rejection of the alternative new location.

37. A non-transitory computer-readable medium that stores a set of instructions, when executed by at least one processor of an electronic device, cause the electronic device to perform a method of changing a pickup location in a transportation service, the method comprising:

receiving, through an interface displayed on a terminal device associated with a user, a request for changing a pickup location from an original location to a new location, wherein a transportation service request initiated by a passenger based on the original location is accepted by a service provider;

determining whether the request satisfies a criterion;

when the request satisfies the criterion, indicating on the interface that the request is acceptable; and

when the request does not satisfy the criterion, indicating on the interface that the request fails.

38. The non-transitory computer-readable medium of claim 37, wherein the method further comprises:

receiving input from the user indicating the new location, wherein the input includes dragging a pointer on a map or dragging the map with respect to the pointer.

39. The non-transitory computer-readable medium of claim 37, wherein the method further comprises:

receiving input from the user indicating an address of the new location.

40. The non-transitory computer-readable medium of claim 37, wherein the method further comprises:

determining one or more suggested pickup locations using a learning model, the learning model is trained based on historical transportation service data;

providing the one or more suggested pickup locations to the user on the interface; and

receiving an input from the user indicating a selection of the new location from the suggested pickup locations.

41. The non-transitory computer-readable medium of any one of claims 37 to 40, wherein the criterion is predetermined.

42. The non-transitory computer-readable medium of any one of claims 37 to 40, wherein the method further comprises:

dynamically determining the criterion for accepting or rejecting the request.

43. The non-transitory computer-readable medium of claim 42, wherein the method further comprises:

dynamically determining the criterion based on at least one of:

circumstances associated with the new location;

circumstances associated with a time the request being made;

traffic conditions;

availability of service providers; or

historical transportation service data.

44. The non-transitory computer-readable medium of any one of claims 37-44, wherein the criterion includes at least one of a distance limit, a time limit, and a number of change limit.

45. The non-transitory computer-readable medium of claim 44, wherein:

the criterion includes the distance limit defining a maximum distance the new location is permitted to be away from the original location; and

the method further comprises:

determining that the request satisfies the criterion when a distance between the new location and the original location is equal to or less than the maximum distance.

46. The non-transitory computer-readable medium of claim 44, wherein:

the criterion includes the time limit defining a latest time point at which the request is permitted; and

the method further comprises:

determining that the request satisfies the criterion when the request is made on or before the latest time point.

47. The non-transitory computer-readable medium of claim 44, wherein:

the criterion includes the number of change limit defining a maximum number of times the request can be made; and

the method further comprises:

determining that the request satisfies the criterion when the request is made equal to or less than the maximum number of times.

48. The non-transitory computer-readable medium of any one of claims 37 to 47, wherein:

the user is the passenger; and

the method further comprises:

receiving a response from the service provider indicating acceptance or rejection of the request.

49. The non-transitory computer-readable medium of any one of claims 37 to 47, wherein:

the user is the service provider; and

the method further comprises:

receiving a response from the passenger indicating acceptance or rejection of the request.

50. The non-transitory computer-readable medium of any one of claims 37 to 49, wherein the method further comprises:

when the request does not satisfy the criterion, determining an alternative new location that satisfies the pre-determined criterion and providing information of the alternative new location on the interface.

51. The non-transitory computer-readable medium of claim 50, wherein the method further comprises:

receiving a response from the user indicating acceptance or rejection of the alternative new location.

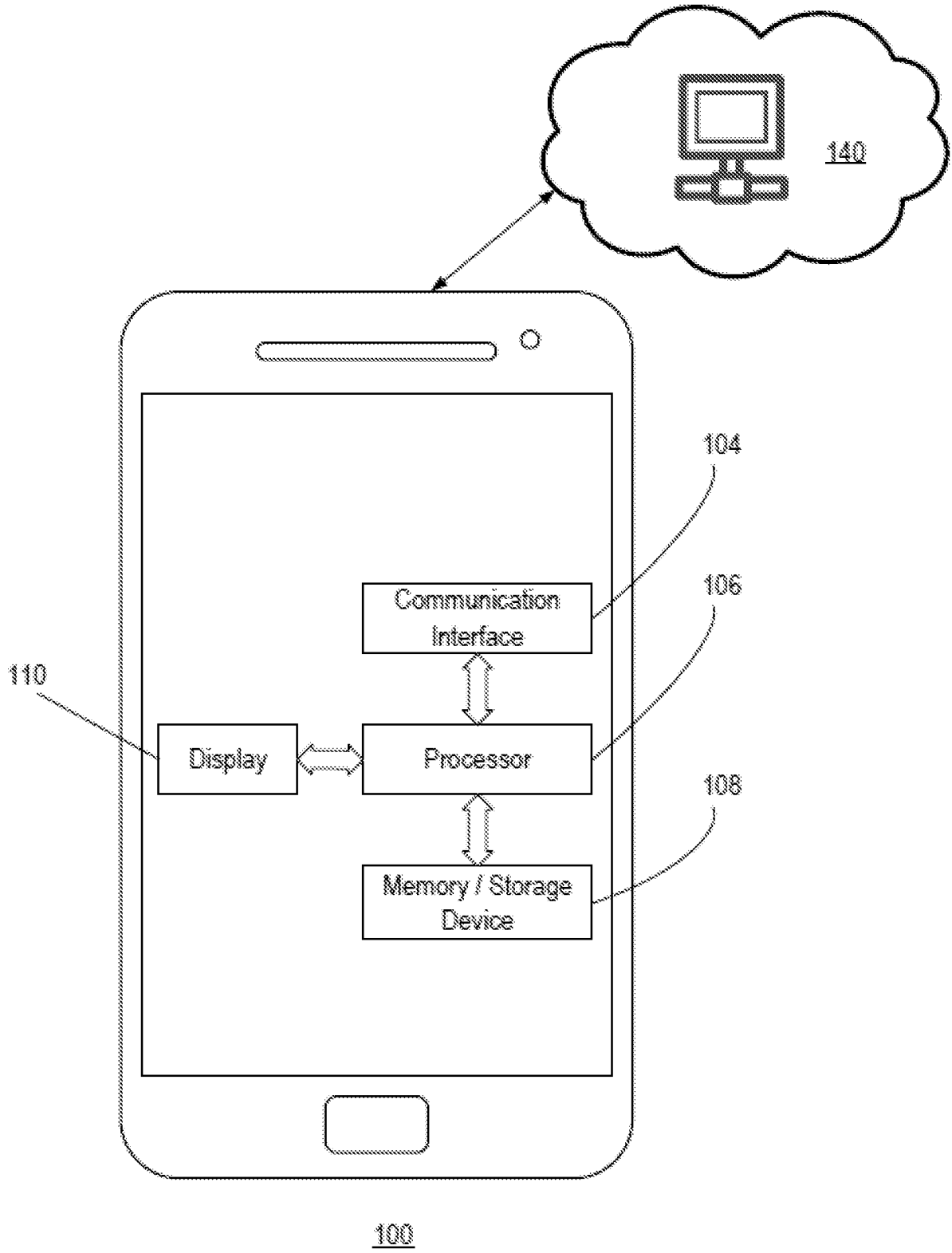
140
104
106
110
Communication Interface
Display
Processor
108
Memory / Storage Device
100

FIG. 1

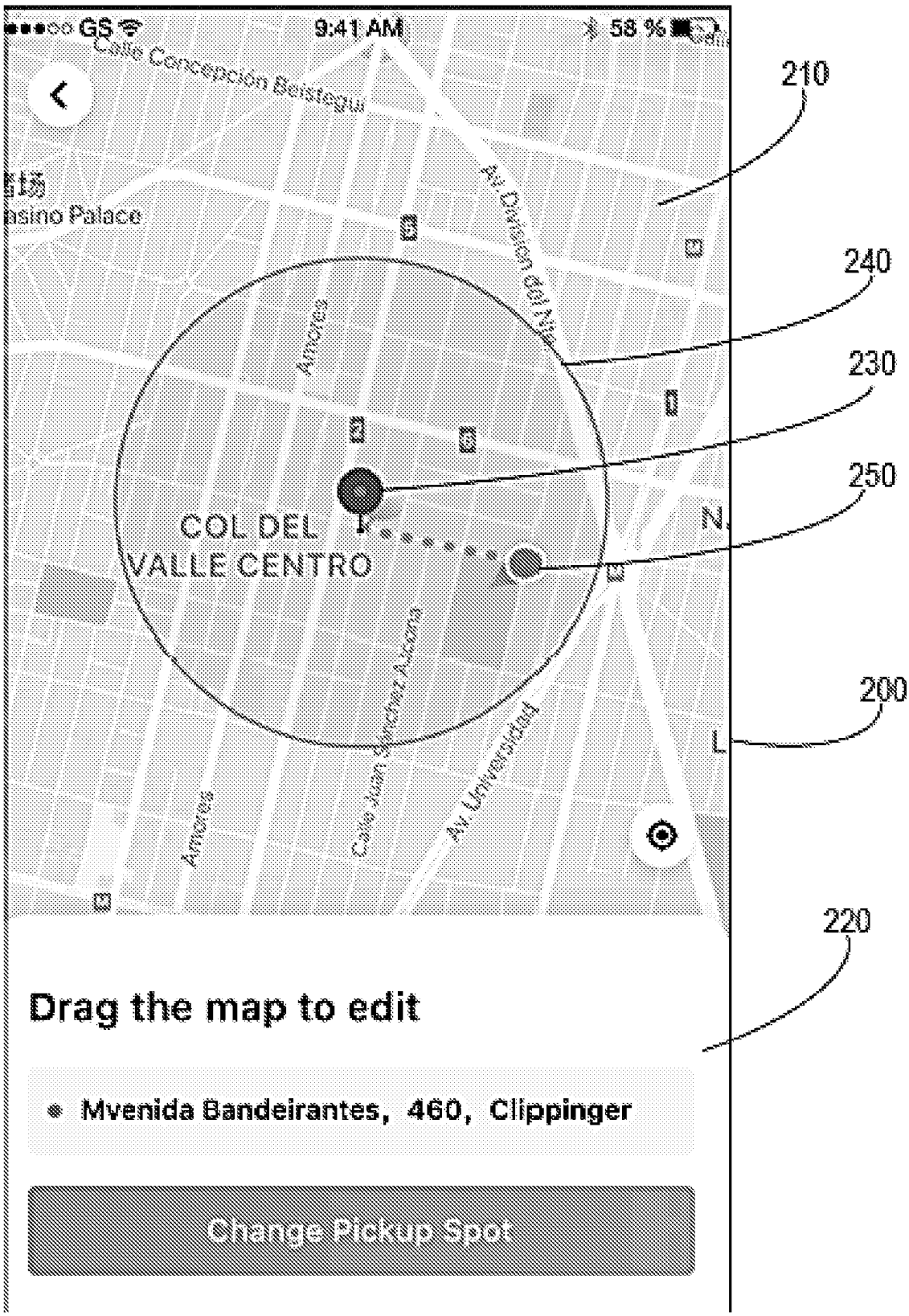
9:41 AM
58 %
Calle Concepción Beristegui
Av. Division del Norte
Amores
COL DEL VALLE CENTRO
Calle Juan Sánchez Azcona
Av. Universidad
Amores
210
240
230
250
200
220
Drag the map to edit
Mvenida Bandeirantes, 460, Clippinger
Change Pickup Spot

FIG. 2

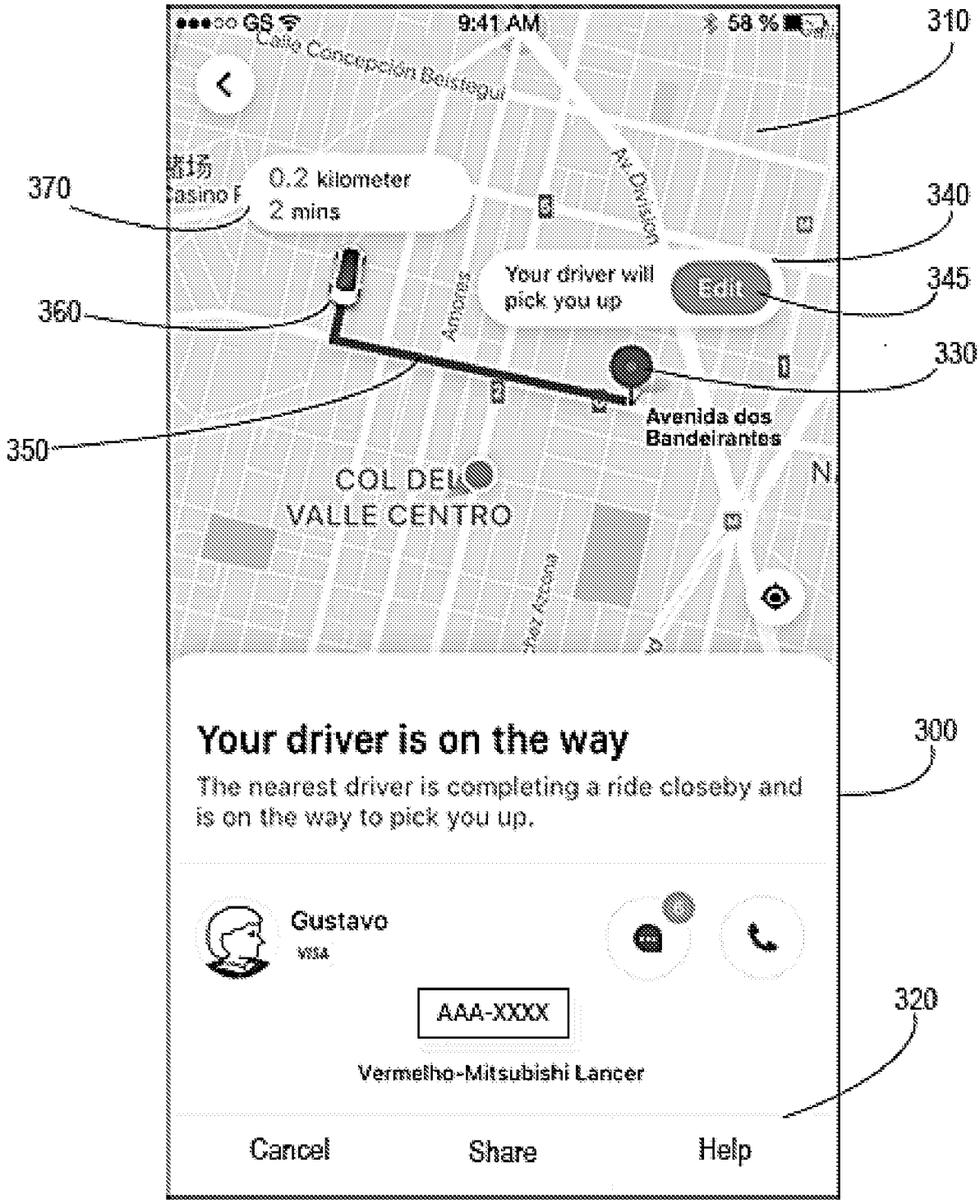
9:41 AM
58 %
310
370
0.2 kilometer
2 mins
340
Your driver will pick you up
345
360
330
350
Avenida dos Bandeirantes
COL DEL
VALLE CENTRO
Your driver is on the way
300
The nearest driver is completing a ride closeby and is on the way to pick you up.
Gustavo
AAA-XXXX
320
Vermelho-Mitsubishi Lancer
Cancel
Share
Help

FIG. 3

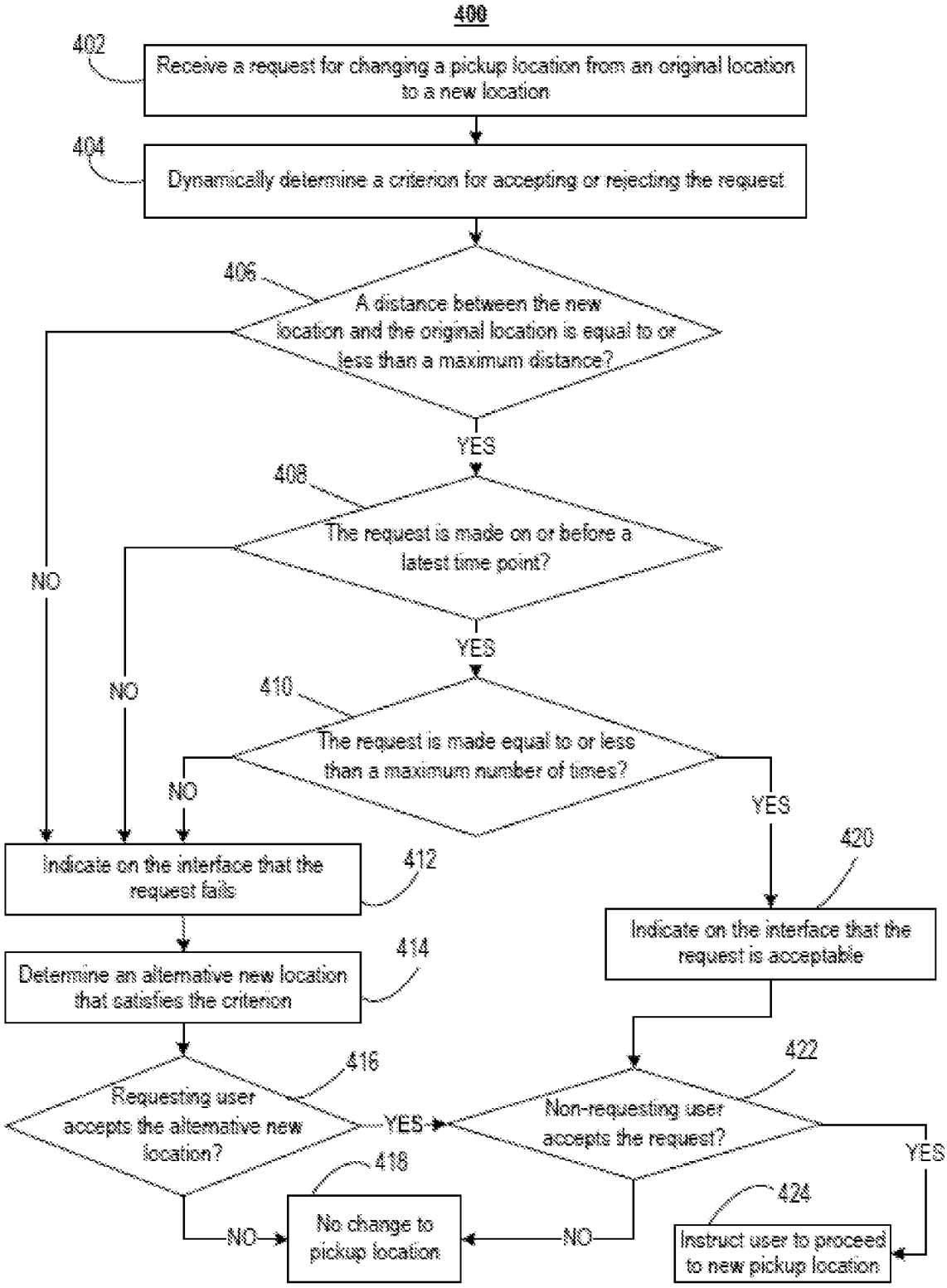
400
402
Receive a request for changing a pickup location from an original location to a new location
404
Dynamically determine a criterion for accepting or rejecting the request
406
A distance between the new location and the original location is equal to or less than a maximum distance?
YES
NO
408
The request is made on or before a latest time point?
YES
NO
410
The request is made equal to or less than a maximum number of times?
NO
YES
Indicate on the interface that the request fails
412
Determine an alternative new location that satisfies the criterion
414
Requesting user accepts the alternative new location?
416
YES
NO
No change to pickup location
418
420
Indicate on the interface that the request is acceptable
422
Non-requesting user accepts the request?
YES
NO
Instruct user to proceed to new pickup location
424

FIG. 4

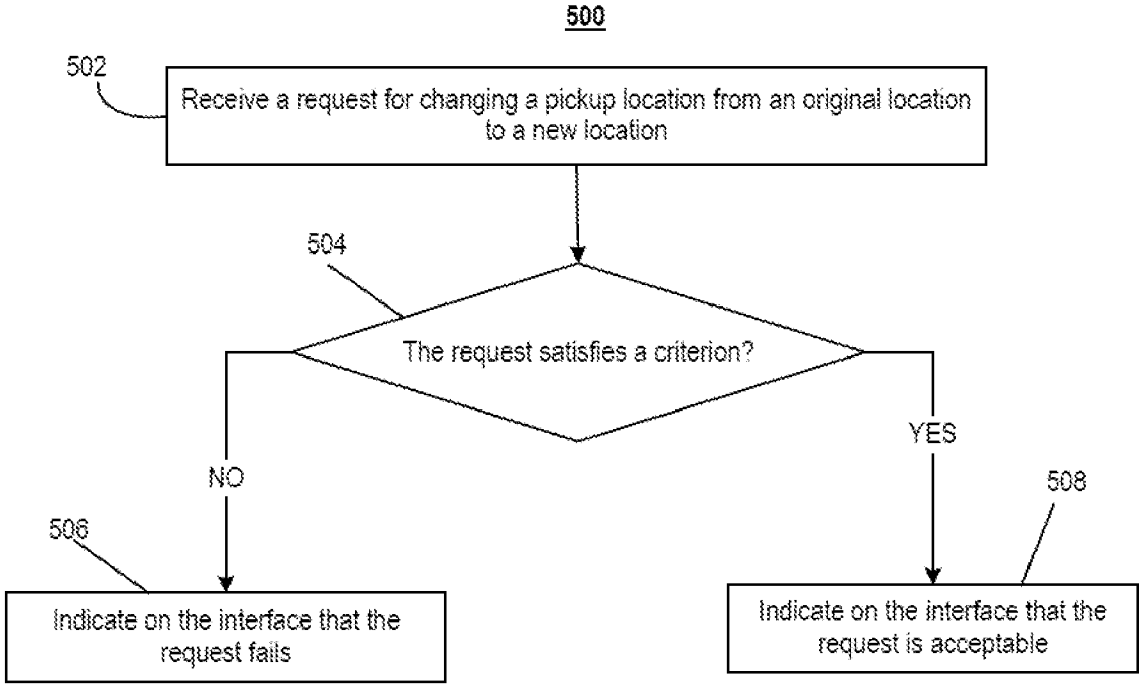
500
502
Receive a request for changing a pickup location from an original location to a new location
504
The request satisfies a criterion?
NO
YES
506
508
Indicate on the interface that the request fails
Indicate on the interface that the request is acceptable

FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/120956

A. CLASSIFICATION OF SUBJECT MATTER

G06Q 10/02(2012.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06Q; G06F; H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

VEN, DWPI, CNABS, CNTXT, SIPOABS, CNKI; transport, ride, service, vehicle, taxi, pickup, boarding, location, position, change, adjust, request

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 108027906 A (GOOGLE INC) 11 May 2018 (2018-05-11) description paragraphs [0026]-[0079]	1-51
A	CN 107665476 A (BEIJING JINGDONG CENTURY TRADING CO LTD ET AL.) 06 February 2018 (2018-02-06) the whole document	1-51
A	CN 108352001 A (GOOGLE INC) 31 July 2018 (2018-07-31) the whole document	1-51

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12 June 2019	**19 June 2019**

Name and mailing address of the ISA/CN	Authorized officer
National Intellectual Property Administration, PRC **6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088** **China**	**LIU,Yuan**
Facsimile No. **(86-10)62019451**	Telephone No. **62412079**

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2018/120956

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 108027906 A	11 May 2018	WO 2017106256 A1	22 June 2017
		US 2017169366 A1	15 June 2017
		EP 3332365 A1	13 June 2018
		IN 201847008943 A	30 March 2018
		GB 2556805 A	06 June 2018
		DE 112016003722 T5	03 May 2018
CN 107665476 A	06 February 2018	None	
CN 108352001 A	31 July 2018	WO 2017091262 A1	01 June 2017
		US 2017147951 A1	25 May 2017
		EP 3374937 A1	19 September 2018
		EP 3374937 A4	03 April 2019
		KR 20180063289 A	11 June 2018
		DE 112016005349 T5	02 August 2018
		IN 201847003766 A	09 February 2018
		GB 2560138 A	29 August 2018
		JP 2018538618 A	27 December 2018