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(54) METHOD FOR AN EXCHANGE OF DATA

(57) The invention discloses a method for an exchange of data between a mobile device (100) and an additional mobile device (110) assigned to a means for passenger transport (200A, 200B, 200C,...). The method comprises the steps of recording an automatically readable information (300) via a mobile device (100) to create a first data connection between the mobile device (100) and a data server (400), exchanging real time information between a means for passenger transport (200A, 200B, 200C,...) and the data server (400); and creating a second data connection between the mobile device (100) and the additional mobile device (110) assigned to the means for passenger transport (200A) based on the real time information.

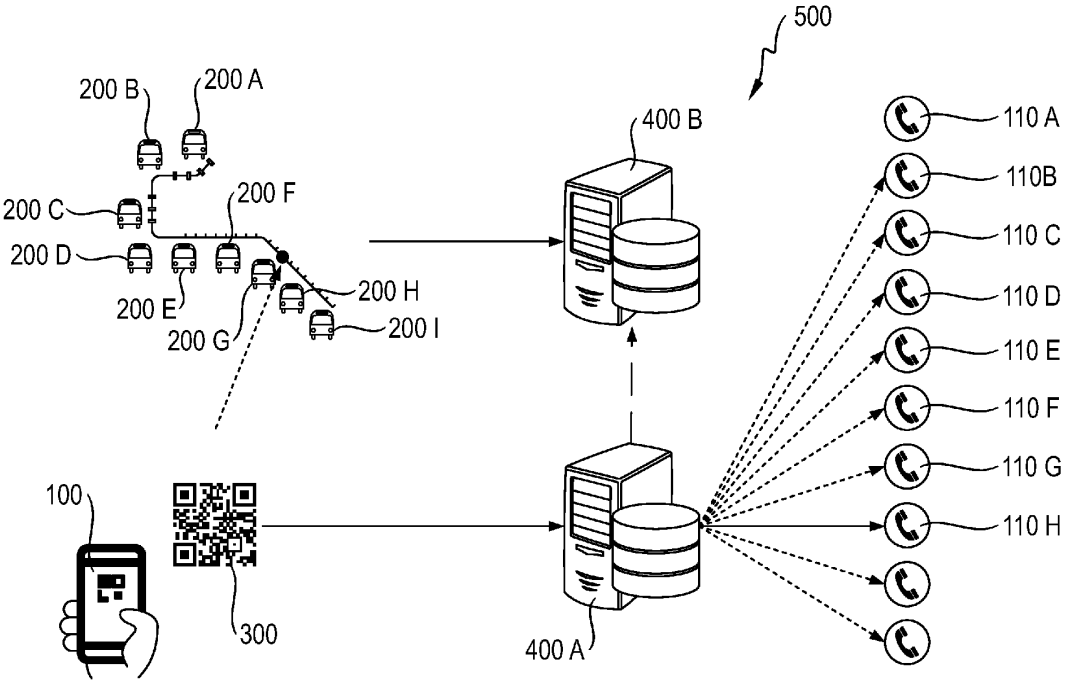

Fig. 2

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Description

Technical Field

[0001] The invention relates to a method for an exchange of data between a mobile device and a means for passenger transport.

Background Art

[0002] There are numerous communication systems which are used in public passenger transport. For example, it is known that in the passenger compartment of regular buses, passengers can signal to the bus driver that they want to leave the bus at the next stop by pressing certain signal buttons. By indicating their wish to stop, the bus driver will stop at the next stop and allow the passenger to get off the bus.

[0003] It is also known from regional or long-distance trains, that push buttons are arranged both inside and outside the trains to open doors. Here, the push buttons are located directly on or at the doors, which they are to open by pressing the buttons.

[0004] For safety reasons, modern stops may have glass partitions to separate waiting passengers from the road. Only after the bus has entered the bus stop, the bus doors and the glass doors of the glass partition open synchronously to allow passengers to enter or leave the bus.

[0005] However, the glass partitions make it significantly more difficult to place push buttons, as they can no longer be attached on the doors or next to the doors. Alternatively, the push buttons could be placed at the passenger stops, which would require additional structural infrastructure facilities.

[0006] Furthermore, in particular for disabled persons needing assistance when boarding or leaving the means of transport, there is the need for bidirectionally communicating with a responsible person of the transport provider, e. g. a bus driver.

[0007] The publication KR20160093205A (Daegu University) relates to a low-floor bus ride notification apparatus for handicapped and a method thereof. The low-floor bus ride notification apparatus includes a QR code attached to a bus stop, a smartphone carried by a handicapped user and storing a low-floor bus app and a control means which receives a signal from the smartphone of the handicapped user to a drive an angle unit of the notification apparatus. Further the apparatus comprises sign lamps for boarding and unboarding the handicapped user which are installed on the front surface of a driver seat in a low-floor bus and lit in accordance with the operation of the control means. More further the apparatus comprises a safe distance ensuring electrical signboard which is installed on the rear glass of the low-floor bus and displays information in accordance with the operation of the control means. The low-floor bus ride notification apparatus notifies the presence of a handicapped user using a wheelchair waiting to board a bus for a bus driver to easily guide the handicapped user using the wheelchair to board the bus. The information regarding the handicapped user boarding the bus is automatically transmitted to the low-floor bus driver to ensure safe boarding of the handicapped user. The smartphone app can be used to display the boarding information of the handicapped user on the instrument panel of the low-floor bus as sign lamps to ensure the recognition of the driver and be linked to the safe distance ensuring electrical signboard on the rear glass of the low-floor bus.

[0008] The known procedures for assisting disabled passengers to use public transport require additional infrastructural measures and do not allow a direct exchange of information with the driver of the means of passenger transport. Furthermore, the known solutions are very inflexible and do not provide the passenger with information that is dependent on a location or a driving status of the means of passenger transport.

Summary of the invention

[0009] It is the object of the invention to create a flexible and cost-effective solution for the assistance of passengers in public means for passenger transport.

[0010] The solution of the invention is specified by the features of claim 1. According to the invention the method for an exchange of data between a mobile device and an additional mobile device assigned to a means for passenger transport, comprises the steps of:

a) recording an automatically readable information via a mobile device to create a first data connection between the mobile device and a data server;

b) exchanging real time information between a means for passenger transport and the data server; and

c) creating a second data connection between the mobile device and the additional mobile device assigned to the means for passenger transport based on the real time information.

[0011] A mobile device in the sense of the invention may be a smartphone, tablet PC, PDA, laptop, smart watch or any other means capable of automatically recording readable information and establishing a data connection for use of the mobile internet.

[0012] An automatically readable information can be any automatically recordable information such as optical, acoustic, radio or any other possible automatic provision of information. For example, barcodes, QR-codes, acoustic signals or even radio connections such as Bluetooth are suitable for this purpose.

[0013] Real time information can include position signals, speed signals, congestion, accidents, delays, passenger occupancy, specific characteristics such as the

ability to accommodate wheelchairs, scheduled arrival or departure times, etc. Preferably, real time information is continuously exchanged between the means for passenger transport and the data server, such that the data server is always provided with up-to-date information relating to the means of transport of the respective fleet.

[0014] For the exchange of the real time information between the server and the means for passenger transport, the means for passenger transport may be equipped with a suitable transmitter and receiver device designed to automatically exchange information with the server.

[0015] A means for passenger transport can be a bus, a taxi, a train, a ship or any other means of transport which is suitable for transporting passengers and which allows a direct data connection between a mobile device of a passenger and a mobile device assigned to the means of passenger transport.

[0016] The first data connection and the second data connection do not necessarily have to be the same type of data connection. For example, the first data connection can be created via a mobile internet connection, while the second data connection can be created via a cellular telecommunication network using standards such as 5G, 4G, 3G or GSM.

[0017] As a result of the invention, it is no longer necessary to install buttons or push-buttons in or outside the means for passenger transport. Additionally, it is not necessary to invest in expensive infrastructure at passenger stops of the means of transport. A further advantage results from the fact that the first data connection to the server allows a dynamic interpretation of the automatically readable information. This means that the automatically readable information does not directly refer to a certain target destination such as a phone number, URL or media file. Instead, indirectly the automatically readable information refers to the server, which provides the final target. The final target is dependent of the real time information exchanged between a means for passenger transport and the data server. Therewith the target can be modified on the server without changing the automatically readable information. In other words, a concrete automatically readable information can always remain identical at all means of passenger transport and passenger stops. The target of the connection can be flexibly modified by the server at any time. An additional advantage of the invention is that the method can also be adapted for other functionalities without the need for major investment or adaptation of the infrastructure. The additional mobile device can, for example, be used by the driver of the means of passenger transport, wherein the concrete assignment of a means of passenger transport can be flexibly made to the mobile device of the driver. All in all, the method according to the invention significantly increases the quality of service for passengers, since every passenger can directly contact the driver of the means of passenger transport. For example, a wheelchair user can inform the driver of a means of passenger transport that the passenger intends to board or unboard the means of passenger transport with the wheelchair. In the case of boarding, the driver of the means of passenger transport can also inform the wheelchair user which door of the means of passenger transport is accessible via a ramp.

[0018] Preferably, the second data connection is a voice connection. This allows a passenger to make a direct voice contact with the driver of the means of transport. This allows effective communication and a simple solution to everyday challenges.

[0019] In a preferred embodiment of the invention, based on the real time information the voice connection is created between the mobile device and a call center when the real time information indicates that the voice connection between the mobile device and the additional mobile device is not allowed.

[0020] Traffic situations regularly occur which requires the full attention of the driver of the means of passenger transport. For safety reasons, it may therefore make sense that the driver of the means of passenger transport is temporarily not available for a personal conversation. In order not to keep a calling passenger waiting unnecessarily, the call is diverted to a call center. This safety function increases traffic safety and improves the quality of service for passengers.

[0021] Instead or in addition, the calling passenger may receive an automated voice message from the data server or a voice communication server informing about the temporary nonavailability of the driver, preferably supplemented by an indication about the waiting time ("The driver is not available at the moment. You will be connected to the driver within about 30 seconds. Please hold.")

[0022] According to a further preferred embodiment the real time information indicates that the voice connection is not allowed if the means for passenger transport is moving.

[0023] This describes a possible safety function for direct voice communication between a passenger and the driver of a means of passenger transport. This safety function does not have to be actively activated by the driver of the means of passenger transport, but is automatically activated based on the movement of the means of passenger transport. The security function can be set automatically, for example, by exchanging real-time information with the server.

[0024] Preferably, the real time information indicates that the voice connection is allowed if the means for passenger transport is not moving.

[0025] This describes an additional possible safety function for voice communication between a passenger and the driver of a means of passenger transport. This safety function also does not have to be actively activated by the driver of the means of passenger transport, but it can be automatically activated based on movement or not movement of the means of passenger transport. The security function also can be set automatically, for example, by exchanging real-time information with the server.

[0026] Advantageously, the real time information comprises a position signal of the means for passenger transport.

[0027] For example, the position signal can be used to calculate the arrival or departure times of the means of transport. This data can also be combined with current traffic and congestion calculations, for example, allowing precise monitoring of the timetable. In the event of traffic accidents, rapid medical first aid can also be provided. For example, such a position signal can be provided based on the Global Positioning System (GPS).

[0028] In a further preferred embodiment of the invention, the automatically readable information provides a unique data element that is assigned to the position of the automatically readable information.

[0029] The unique data element may be a unique ID for the automatically readable information or for a certain location. The position will be assigned based on a lookup table relating the unique IDs to locations. As well, the unique data element may directly encode location data (e. g. longitude and latitude) of the respective location.

[0030] Assuming that the automatically readable information is recordable only within a limited distance (typically a few meters), this has the technical advantage, that it is possible to indicate the position of the user of the mobile device. By recording the automatically readable information, the server is informed of the exact location of the user's mobile device. This in turn allows the conclusion to which line of a means of passenger transport and at which passenger stop of the line the user or presumed passenger is located. This is the basis for deciding which means of passenger transport is closest to the passenger and how long it takes the means of passenger transport to reach the identified passenger stop. On this basis, the server can determine the means of passenger transport the additional mobile device is assigned to.

[0031] According to an additional preferred embodiment the data server selects a certain means for passenger transport based on the real time information and the unique data element.

[0032] As described with respect to the preceding embodiment on the basis of a unique data element of automatically readable information, it is possible to indicate the position of the user of the mobile device. By recording the automatically readable information, the server is informed which line of a means of passenger transport and at which passenger stop the user of the mobile device is located. In combination with the position signal of the means of passenger transport the data server can decide which means of passenger transport is closest to the passenger and how long it will take to reach the identified passenger stop. Therewith the server decides which additional mobile device has to be connected by creation of the second data connection to the mobile device used by the passenger.

[0033] Preferably, the data server provides calculated timetable information of the selected means for passenger transport to the mobile device based on the real time information and the unique data element.

[0034] This has the technical advantage that the user of the mobile device receives detailed information about the timetable, the arrival time of the next means of passenger transport assigned to the line, the assigned stops or a disabled friendly equipment of the means of passenger transport. For example, users of a wheelchair can be informed of the door of the means of passenger transport that is equipped with a ramp for access to the means of passenger transport.

[0035] Advantageously, the real time information comprises a property of the means for passenger transport that is provided to the mobile device.

[0036] For example, the user of the mobile device receives detailed information about how to enter the means for passenger transport with a wheelchair. The passenger further can be informed of the door of the means of passenger transport that is equipped with a ramp for access with a wheelchair.

[0037] For example, when the next means of passenger transport is not wheelchair accessible or is already occupied by one or more wheelchairs, a recommendation could be sent to the user of the mobile device to use the next means of passenger transport that follows.

[0038] According to a further preferred embodiment the automatically readable information is positioned in a passenger compartment inside a means for passenger transport.

[0039] This has the advantage that passengers who are already in the passenger compartment of the means for passenger transport can contact the driver of the means for passenger transport directly. For example, wheelchair users can inform the driver of the means for passenger transport that they want to leave at the next stop. This would alert the driver to provide assistance or to take extra caution, as leaving the passenger compartment with a wheelchair may take a longer time.

[0040] Additionally, passengers travelling with the means for passenger transport could contact the driver directly for example to report an accident, an assault or a medical emergency.

[0041] Alternatively or additionally the automatically readable information is positioned at a passenger stop of a means for passenger transport.

[0042] In particular, this enables the user of a mobile device to contact the driver of the next means for passenger transport, which drives to the stop where the user of the mobile device is located, directly.

[0043] In a further preferred embodiment of the invention, the data server provides user-selectable communication options to the mobile device based on the real time information and/or the automatically readable information.

[0044] For example, the options are transferred directly to the display of the user of a mobile device recording the automatically readable information or announced via an automated voice message. The communication options provide the passenger with a choice, allowing to act

appropriately. Creating a direct voice connection to the driver of a means for passenger transport is only one possible communication option. In addition, a medical emergency call, a call to the next fire brigade or the police could be available as communication options. Other possible communication options would be a voice connection to a call center or an indication of the next possible transport connection, shown on the display or announced by an automated voice message.

[0045] Preferably, the automatically readable information comprises a quick-response code usually referred to as QR-code.

[0046] Due to an automatic error correction, the use of a QR-code to create a data connection is very robust and therefore widely used. Most mobile devices such as (smart) mobile phones or tablets automatically resolve recorded QR-codes, dispensing with the need for dedicated applications. The QR-code is very easy to print on stickers which can be placed on even surfaces like windows.

[0047] The invention further encompasses a system for an exchange of data, between a mobile device and an additional mobile device assigned to a means for passenger transport, the system comprising:

a) a data server adapted to exchange real time information between a means for passenger transport and the data server,

b) an automatically readable information providing a unique data element that is assigned to a position of the automatic readable information, wherein

the data server is adapted to receive the unique data element from a mobile device, adapted to record the automatic readable information, and adapted to create a first data connection between the mobile device and the data server, and to create a second data connection between the mobile device and the additional mobile device assigned to the means for passenger transport based on the unique data element and the real time information.

[0048] Accordingly it is not necessary to install buttons or push-buttons in or outside the means for passenger transport. No invests have to be made for infrastructure at passenger stops of the means of passenger transport. The first data connection to the server allows a dynamic interpretation of the automatically readable information. This means that the automatically readable information does not directly refer to a certain target destination such as a phone number, URL or media file. Instead, indirectly the automatically readable information refers to the server, which provides the final target. The final target is dependent of the real time information exchanged between a means for passenger transport and the data server. Therewith the target can be modified on the server without changing the automatically readable information. Thereby a concrete automatically readable information can always remain identical at all means of passenger transport and passenger stops. The target of the connection can be flexibly modified by the server at any time. An additional advantage of the invention is that the method can also be adapted for other functionalities without the need for major investment or adaptation of the infrastructure. The additional mobile device is used by the driver of the means of passenger transport, wherein the concrete assignment of a means of passenger transport can be flexibly made to the mobile device of the driver. The system according to the invention significantly increases the quality of service for passengers, since every passenger can directly contact the driver of the means of passenger transport. The service quality especially for disabled people e.g. wheelchair users is improved, because they can inform the driver of a means of passenger transport that the passenger intends to board or unboard the means of passenger transport with the wheelchair. In the case of boarding, the driver of the means of passenger transport can also inform the wheelchair user which door of the means of passenger transport is accessible via a ramp.

[0049] Similar improvements can be reached for passengers who are in the passenger compartment of the means for passenger transport. They can contact the driver of the means for passenger transport directly. Wheelchair users can inform the driver of the means for passenger transport that they want to leave the means for passenger transport at the next stop. This will alert the driver to take extra caution, as leaving the passenger compartment with a wheelchair may take a longer time.

[0050] Other advantageous embodiments and combinations of features come out from the detailed description below and the entirety of the claims.

Brief description of the drawings

[0051] The drawings used to explain the embodiments show:

Fig. 1A A schematic top view of a means for passenger transport;

Fig. 1B a further top view of a means for passenger transport;

Fig. 2 a schematic diagram of a system for an exchange of data, between a mobile device and an additional mobile device; and

Fig. 3 a block diagram of a method for an exchange of data between a mobile device and an additional mobile device.

[0052] In the figures, the same components are given the same reference symbols.

Preferred embodiments

[0053] Figure 1A shows a schematic top view of a means for passenger transport 200A which stops next to a passenger stop 150. The means for passenger transport 200A is a bus, featuring a passenger compartment and a driver's compartment including the driver's seat 210.

[0054] For safety reasons, glass partitions 160 are placed between the means for passenger transport 200A and the passenger stop 150 to separate waiting passengers from the road. When the bus has entered the bus stop 150 slidable doors 170 are opened. When the slidable doors 170 and the corresponding bus doors 220 are opened, passengers can enter or leave the bus.

[0055] Inside the bus an automatically readable information 300 in the form of a QR-code is positioned in the passenger compartment 230 to be accessible for passengers. When a passenger scans the QR-code with a mobile device 100 a first data connection between the mobile device 100 and a data server 400 is created via mobile internet. The data server 400 exchanges real time information between the bus and the data server 400. Based on the real time information a second data connection between the mobile device 100 and an additional mobile device 110A which is assigned to the bus can be created. The additional mobile device 110A assigned to the bus is the one of the bus driver. Thus a passenger that is in the passenger compartment 230 of the bus and who has scanned the QR-code can contact the driver of the bus directly via a voice connection. For example, wheelchair users can inform the driver of the bus that they want to leave the bus at the next stop. This alerts the driver to take extra caution, as leaving the passenger compartment 230 with a wheelchair may take a longer time. Additionally a passenger in the passenger compartment 230 can contact the driver directly for example to report an accident or a medical emergency.

[0056] Traffic situations regularly occur which requires the full attention of the driver of the bus. For safety reasons, the driver of the bus in some situations is not available for a personal conversation. In order not to keep a calling passenger waiting and to increase traffic safety, the voice connection is diverted to a call center.

[0057] Figure 1B shows a further top view of a means for passenger transport 200A which stops next to a passenger stop 150. The means for passenger transport 200A is a bus including a driver seat 210 at the front of the bus.

[0058] Here, automatically readable information 300 in the form of a QR-code is positioned at the passenger stop 150 of the bus. This enables a passenger to use a mobile device 100 to contact the driver of the bus directly from the outside of the bus via a voice connection. When a passenger scans the QR-code with his mobile device 100 a first data connection between the mobile device 100 and a data server 400 via mobile internet is created. The data server 400 exchanges real time information between the bus and the data server 400. Based on the real time information a second data connection between the mobile device 100 and an additional mobile device 110A which is assigned to the bus can be created. The additional mobile device 110A assigned to the bus is the one of the bus driver. Thus the passenger who is waiting at the bus stop 150 outside the bus and who has scanned the QR-code that is fixed on a glass partition 160 or on a slidable door 170 can contact the driver of the bus directly via a voice connection. For example, a wheelchair user can inform the driver of the bus that he wants to enter the bus. This alerts the driver to take extra caution, as entering the passenger compartment 230 with a wheelchair may take a longer time.

[0059] Figure 2 shows a schematic diagram of a system 500 for an exchange of data, between a mobile device 100 and an additional mobile device 110 A, 110 B, 110 C, 110 D, 110 E, 110 F, 110 G, 110 H, 110 I,...

[0060] The system 500 comprises a data server 400 B adapted to exchange real time information between a means for passenger transport 200A, 200B, 200C,... and the data server 400B. The means for passenger transport 200A, 200B, 200C, 200D, 200E, 200F, 200G, 200H, 200 I comprise a plurality of buses. The plurality of buses are assigned to a specific line. The data server has detailed and essentially real-time information on the location, speed, load, free capacities, free wheelchair spaces, etc. of each bus. However, further information can be provided.

[0061] The system 500 further comprises an automatically readable information 300 in the form of a QR-code. Using a mobile device 100 that is adapted to record the QR-code a user may create a first data connection between the mobile device 100 and the data server 400A. Figure 2 shows two separate data servers 400A and 400B. A first data server 400B is adapted to exchange real time information with at least one means for passenger transport 200A, 200B, 200C. A second data server 400A is adapted to create a first data connection between the mobile device 100 and the data server 400A. The first data server 400B and the second data server 400A are adapted to exchange data with each other. Alternatively the functions of the two servers 400A, 400B may be covered by a single data server 400. Further the data server 400 is adapted to create a second data connection between the mobile device 100 and the additional mobile device 110 assigned to the means for passenger transport 200A based on the real time information.

[0062] The first data connection to the data server 400 allows for a dynamic interpretation of the QR-code 300. Accordingly, the QR-code 300 does not directly refer to a certain target destination e.g. phone number, URL, image, etc. Instead, indirectly the QR-code 300 refers to the data server 400, which provides the final destination. The final destination is dependent of the content of the QR-code 300 and of real time information exchanged between the plurality of buses 200A, 200B, 200C and the data server 400. Therewith the target can be modified

on the server 400 without changing the QR-code 300. Thereby a concrete QR-code 300 can always remain identical at all buses 200A, 200B, 200C and all passenger stops 150. The destination of the connection can be flexibly modified by the server 400 at any time, e.g. to a certain additional mobile device 110 A, 110 B, 110 C, 110 D, 110 E, 110 F, 110 G, 110 H, 110 I that is assigned to a certain bus 200A, 200B, 200C based on the real time information.

[0063] Here, the real time information can indicate that the voice connection is not allowed if a certain bus 200A is moving. This describes a possible safety function for direct voice communication between a passenger and the driver of a certain bus. This safety function does not have to be actively activated by the driver of the bus 200A, but is automatically activated based on the movement of the bus 200A. The security function can be set automatically, for example, by exchanging the real time information with the server 400.

[0064] A position signal in the form of a GPS signal can also be used to calculate the arrival or departure times of the bus 200A. This data can also be combined with current traffic and congestion calculations, for example, allowing precise monitoring of the timetable.

[0065] The data server 400 selects a certain bus 200A based on the real time information and a unique data element relating to the concrete position of the QR-code 300. By scanning the QR-code 300, the server 400 is informed which line of the bus and at which passenger stop 150 the user of the mobile device 100 is located. In combination with the position signal of bus 200A the data server 400 decides which bus 200A is closest to the passenger and how long it will take to reach the identified passenger stop 150. Therewith the server 400 decides which additional mobile device 110A has to be connected by creation of the second data connection to the mobile device 100 used by the passenger. The user of the mobile device 100 can thus communicate directly via voice communication with the bus driver of the identified bus 200A.

[0066] Figure 3 shows a block diagram of a method for an exchange of data between a mobile device 100 and an additional mobile device 110. The method for an exchange of data between a mobile device 100 and an additional mobile device 110 assigned to a means for passenger transport 200A, 200B, 200C,... comprises the step A of recording an automatically readable information 300 via a mobile device 100 to create a first data connection between the mobile device 100 and a data server 400. In step B, real time information is exchanged between a means for passenger transport 200A, 200B, 200C,... and the data server 400. The method further comprises step C of creating a second data connection between the mobile device 100 and the additional mobile device 110 assigned to the means for passenger transport 200A based on the real time information.

Claims

1. Method for an exchange of data between a mobile device (100) and an additional mobile device (110) assigned to a means for passenger transport (200A, 200B, 200C,...), comprising the steps of:

   A) recording an automatically readable information (300) via a mobile device (100) to create a first data connection between the mobile device (100) and a data server (400);
   B) exchanging real time information between a means for passenger transport (200A, 200B, 200C,...) and the data server (400); and
   C) creating a second data connection between the mobile device (100) and the additional mobile device (110) assigned to the means for passenger transport (200A) based on the real time information.

2. Method as recited in claim 1, **characterized in that** the second data connection is a voice connection.

3. Method as recited in claim 2, **characterized in that** based on the real time information the voice connection is created between the mobile device (100) and a call center (120) when the real time information indicates that the voice connection between the mobile device (100) and the additional mobile device (110) is not allowed.

4. Method as recited in claim 3, **characterized in that** the real time information indicates that the voice connection is not allowed if the means for passenger transport (200A) is moving.

5. Method as recited in claim 3, **characterized in that** the real time information indicates that the voice connection is allowed if the means for passenger transport (200A) is not moving.

6. Method as recited in any of claims 1 to 5, **characterized in that** the real time information comprises a position signal of the means for passenger transport (200A).

7. Method as recited in any of claims 1 to 6, **characterized in that** the automatically readable information (300) provides a unique data element that is assigned to the position of the automatically readable information (300).

8. Method as recited in claim 6 and 7, **characterized in that** the data server (400) selects a certain means for passenger transport (200A) based on the real time information and the unique data element.

9. Method as recited in claim 8, **characterized in that**

the data server (400) provides calculated timetable information of the selected means for passenger transport (200A) to the mobile device (100) based on the real time information and the unique data element.

10. Method as recited in any of claims 1 to 9, **characterized in that** the real time information comprises a property of the means for passenger transport (200A) that is provided to the mobile device (100).

11. Method as recited in any of claims 1 to 10, **characterized in that** the automatically readable information (300) is positioned in a passenger compartment (210A) inside a means for passenger transport (200A).

12. Method as recited in any of claims 1 to 11, **characterized in that** the automatically readable information (300) is positioned at a passenger stop of a means for passenger transport.

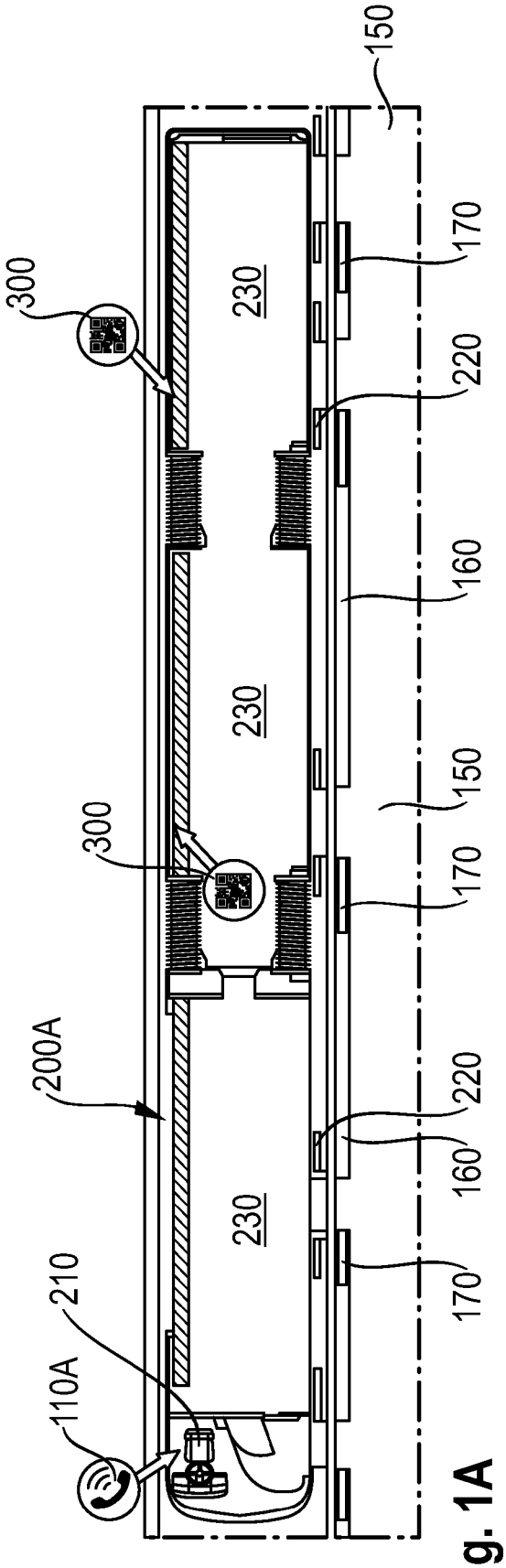
13. Method as recited in any of claims 1 to 12, **characterized in that** the data server (400) provides user-selectable communication options to the mobile device (100) based on the real time information and/or the automatically readable information (300).

14. Method as recited in any of claims 1 to 13, **characterized in that** the automatically readable information (300) comprises a quick-response code.

15. System (500) for an exchange of data, between a mobile device (100) and an additional mobile device (110) assigned to a means for passenger transport (200A, 200B, 200C,...), the system (500) comprising:

A) a data server (400) adapted to exchange real time information with a means for passenger transport (200A, 200B, 200C,...),
B) an automatically readable information (300) providing a unique data element that is assigned to a position of the automatically readable information (300), wherein

the data server (400) is adapted to receive the unique data element from a mobile device, adapted to record the automatically readable information (300), and adapted to create a first data connection between the mobile device (100) and the data server (400), and to create a second data connection between the mobile device (100) and the additional mobile device (110) assigned to the means for passenger transport (200A) based on the unique data element and the real time information.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160
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300
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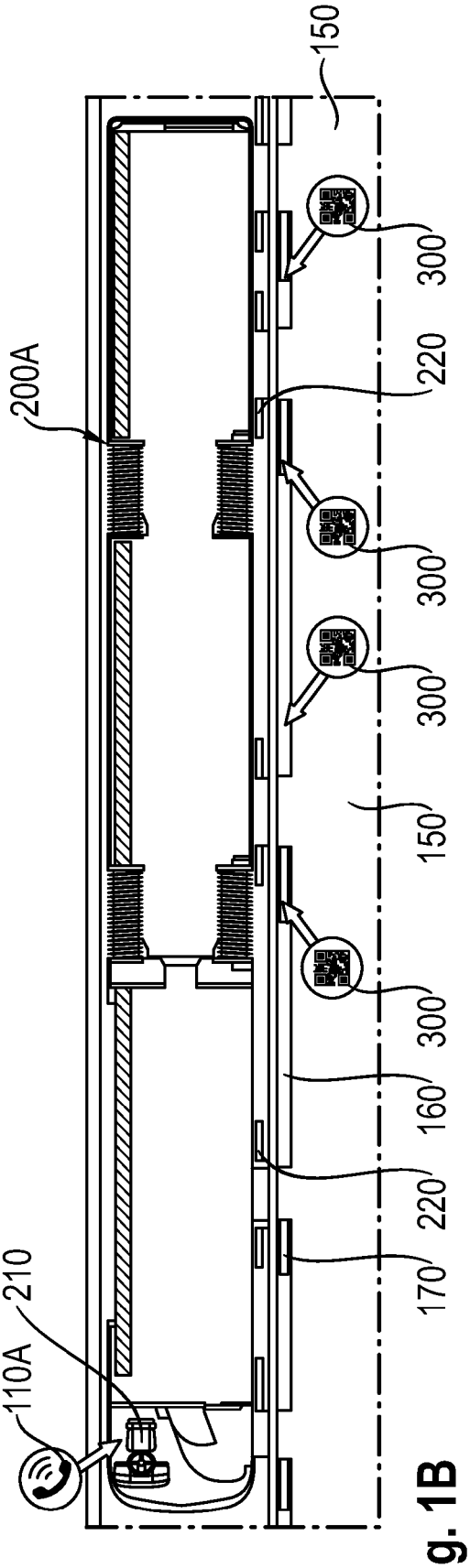
170
200A
220
160
230
210
170
110A

Fig. 1A


150
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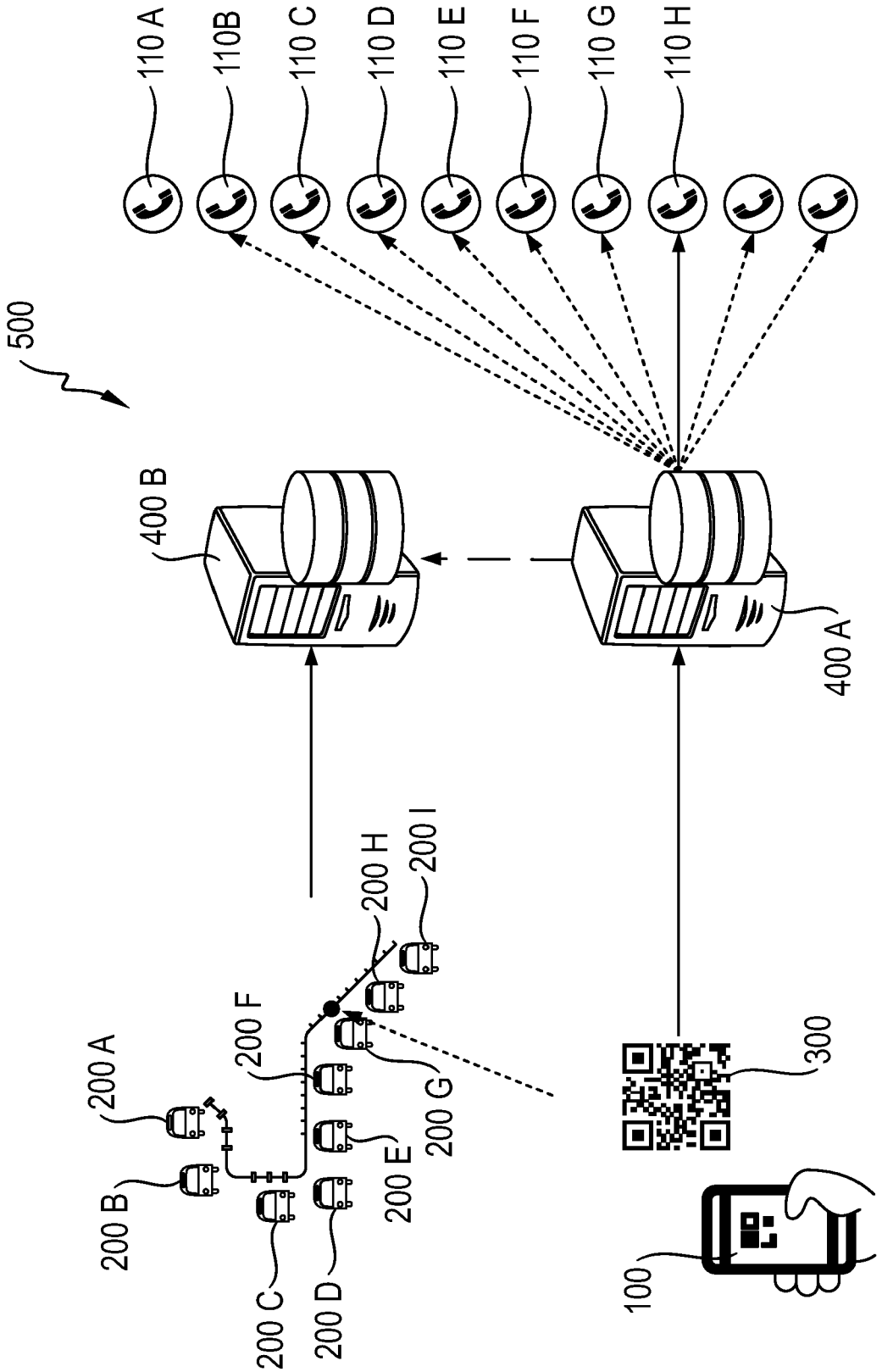
220
210
170
110A

Fig. 1B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110B
110 C
110 D
110 E
110 F
110 G
110 H
500
400 B
400 A
200 H
200 I
200 F
200 A
200 G
200 B
200 E
200 C
200 D
300
100

Fig. 2

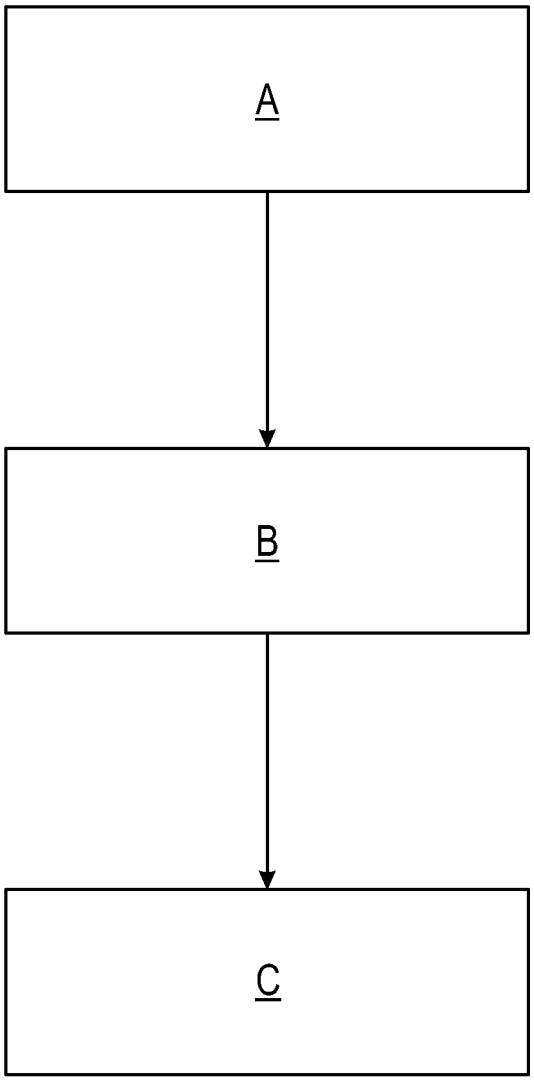

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 21 17 5385

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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G06Q
G08G
B61L
H04W
H04L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14 October 2021	Sigolo, Alessandro

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14-10-2021

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