Description

Title

Method for ascertaining a position of a stopping area for a vehicle and for a potential passenger of the vehicle

Related Art

A system and method for vehicle ridesharing and vehicle ridesharing management is known from US 2019311307 A1.

Disclosure of invention

A method for ascertaining a position of a stopping or pickup area for a vehicle and for a potential passenger of the vehicle as a meeting place of the vehicle and the potential passenger by means of a local ascertaining device is proposed, comprising the following steps:

observing and modelling a surrounding environment of the local ascertaining device,

receiving information on the vehicle via wireless communication,

receiving information on the potential passenger via wireless communication, particularly from an electronic mobile device of the potential passenger,

ascertaining a position of the stopping area for the vehicle and for the potential passenger of the vehicle as a function of the surrounding environment of the local ascertaining device and the information on the vehicle and the information on the potential passenger,

transmitting the position of the stopping area to the vehicle and to the potential passenger, particularly to the electronic mobile device of the potential passenger.

The advantage of the proposed method is that a vehicle and a potential passenger may find one another more quickly or reliably. The vehicle may here be driven particularly by a driver or may be controlled autonomously or partially autonomously. The vehicle may, for example, be provided as a transportation vehicle for transporting riders. The potential passenger may also be referred to as a potential rider. Advantageously, the proposed

method simplifies and thus ensures that the vehicle and the potential passenger to be transported by the vehicle find one another. Advantageously, a quicker conclusion of the finding process of the vehicle and the rider and/or of the process of the passenger boarding or getting into the vehicle is enabled. The vehicle may thus particularly be provided more quickly for other possible additional riders, which increases particularly the availability of the vehicles as a means of transportation. In addition, costs may be saved. An additional advantage of the proposed method is that space, which is limited particularly in large cities, for ascertaining a meeting place of the vehicle with a potential passenger may be used optimally. A quicker conclusion of the meeting may increase particularly the convenience for the passenger and/or the driver.

In an exemplary form, the step of observing and modelling the surrounding environment of the local ascertaining device may be carried out by means of an observation device of the local ascertaining device. In another development, the observation device may particularly be provided as a camera. Optimal observation of the surrounding environment of the local ascertaining device may thus be enabled, and thereby modelling of the surrounding environment may be enabled. Buildings, vehicles, other people, or additional objects in the surrounding environment of the local ascertaining device may thus particularly be accurately and/or reliably identified or detected.

Advantageously, the method may furthermore comprise a step of displaying the ascertained stop as an image by means of a display device of the local ascertaining device. The potential stop or the position of the stopping area may thus be accurately and/or reliably displayed to a potential passenger and/or the driver of a vehicle. Preferably it may be made possible that the potential passenger and the vehicle find one another quickly. Particularly the convenience for the potential passenger and/or the driver of the vehicle, in the case of manual operation of the vehicle, may thus be increased.

In a further development the method may furthermore comprise a step of displaying the ascertained stop as an image and/or the ascertained stop as a virtual display and/or navigation instructions to the ascertained stop by means of a display device of the vehicle for a driver of the vehicle. In the case of a manual operation of the vehicle, the ascertained stop may thus be accurately and/or reliably displayed to a driver. The driver may thus be guided to and thus arrive more quickly and/or more reliably at the position of the stopping area. Particularly the convenience for the driver, particularly as they will arrive more quickly at the stop, and/or for the potential passenger, as they will meet the vehicle more quickly, may be increased.

In an exemplary form, the method may furthermore comprise a step of displaying the ascertained stop as an image and/or the ascertained stop as a virtual display and/or navigation instructions to the ascertained stop by means of a display device of the electronic mobile device of the potential passenger. The ascertained stop may thus be accurately and/or reliably displayed to a potential passenger. The potential passenger may thus be guided to and thus arrive more quickly and/or more reliably at the position of the stopping area. Particularly the convenience for the potential passenger may be increased, particularly as they will arrive more quickly at the stop, and/or for the driver, as they will meet the potential passenger more quickly.

In an advantageous embodiment, information on a position and/or a route and/or a destination and/or an identification of the vehicle may be received during the step of receiving information on the vehicle via wireless communication. In addition or alternatively, in an advantageous embodiment, information on a position and/or a route and/or a destination and/or an identification of the potential passenger may be received during the step of receiving information on the potential passenger via wireless communication from an electronic mobile device of the potential passenger. Information on the potential passenger and the vehicle may thus be transmitted and collected, particularly accurately and/or reliably, which enables particularly a reliable and/or quick ascertainment of a potential stopping area and meeting of the two.

In a further development, information may be transmitted and/or received via wireless communication between the ascertaining device and the vehicle and/or between the ascertaining device and the electronic mobile device of the potential passenger via wireless LAN. Particularly, accurate and/or reliable forwarding of information between the vehicle, the ascertaining device and/or the mobile terminal of the potential passenger is thus enabled.

Furthermore, a local ascertaining device is proposed which is configured to execute, by means of a local ascertaining device, the method of ascertaining a position of a stopping area for a vehicle and for a potential passenger of the vehicle as a meeting place of the vehicle and the potential passenger. Advantageously, a meeting of a vehicle and a potential passenger of the vehicle may be enabled more quickly and/or more reliably by means of the local ascertaining device. Preferably it is particularly easier to gain an overview of a situation or the area that is a possible stopping area. The mutual finding of the vehicle and the potential passenger to be transported by the vehicle may thus be simplified and therefore ensured. Advantageously, quicker conclusion of the finding process of the vehicle and the rider and/or of the process of the passenger getting into

the vehicle is enabled, the vehicle being thereby available more quickly for other possible additional riders. Particularly costs may thus be saved.

Furthermore, a device is proposed, particularly in a vehicle, the device transmitting information on the vehicle via wireless communication to a local ascertaining device, the device receiving information from the local ascertaining device on a position of a stopping area for the vehicle and on a potential passenger of the vehicle as a meeting place of the vehicle with the potential passenger. Particularly, accurate and/or reliable forwarding of information between the vehicle and the ascertaining device is thus enabled.

In a further development the device may comprise a display unit, the display unit being provided for displaying the ascertained stop as an image and/or the ascertained stop as a virtual display and/or navigation instructions to the ascertained stop of the vehicle for a driver of the vehicle. Particularly, the ascertained stop may thus be accurately and/or reliably displayed for a driver, or the driver may be guided more quickly and/or more reliably to the position of the stopping area. Particularly the convenience for the driver and/or the potential passenger may thus be increased.

Furthermore, an electronic mobile device of a potential passenger of a vehicle is proposed, the electronic mobile device transmitting information on the potential passenger via wireless communication to a local ascertaining device, the electronic mobile device receiving information on a position of a stopping area for the vehicle and for the potential passenger of the vehicle as a meeting place of the vehicle and the potential passenger from the local ascertaining device. Particularly, accurate and/or reliable forwarding of information between the ascertaining device and the mobile terminal of the potential passenger is thus enabled.

In a further development the electronic mobile device may comprise a display unit, the display unit being provided for displaying the ascertained stop as an image and/or the ascertained stop as a virtual display and/or navigation instructions to the ascertained stop for the potential passenger of the vehicle. The ascertained stop may thus be accurately and/or reliably displayed to a potential passenger, or the potential passenger may be guided more quickly and/or more reliably to the position of the stopping area. Particularly the convenience for the potential passenger, particularly as they will arrive more quickly at the stop, and/or the driver may thus be increased.

Furthermore, a system for ascertaining a position of a stopping area for a vehicle and for a potential passenger of the vehicle as a meeting place of the vehicle and the potential

passenger, by means of a local ascertaining device, a device and an electronic mobile device are proposed.

Brief description of the drawings

Exemplary embodiments of the invention are illustrated in the drawings and explained in more detail in the following description. The same reference numerals are used for elements with similar functions in the different figures, and a repeated description of the elements is omitted. They show:

Fig. 1 a schematic diagram of a method according to an exemplary embodiment of the present invention;

Fig. 2 a schematic diagram of a method according to an exemplary embodiment of the present invention;

Fig. 3 a schematic diagram of a system according to an exemplary embodiment of the present invention;

Fig. 4 a schematic diagram of a stopping area according to an exemplary embodiment of the present invention.

Embodiments of the invention:

Fig. 1 shows a schematic diagram of a method 20 for ascertaining a position of a stopping area for a vehicle and for a potential passenger of the vehicle as a meeting place of the vehicle and the potential passenger according to an exemplary embodiment of the present invention. The method 20 may be executed by means of a local ascertaining device, particularly according to the local ascertaining device according to Fig. 3. The local ascertaining device may also be referred to as a stop pole.

The vehicle may, for example, be used as a means of transportation for a potential passenger. In other words, a potential passenger would like to be transported by the vehicle and therefore be taken to a specific destination. To this end, the vehicle may be operated manually by a driver, for example. In an alternative embodiment, the vehicle may be provided as an autonomously driving vehicle. For example, a potential passenger may book a ride with the means of transportation or the vehicle and thus be taken to a destination. To this end, the potential passenger must particularly get into or board the vehicle. To this end, particularly a meeting

place of the vehicle and the potential passenger must be arranged. The meeting place of the vehicle and the potential passenger may, for example, be ascertained by means of the method itself.

In a first step 22 of the method 20, a surrounding environment of the local ascertaining device is observed and modelled. In order to observe the surrounding environment, the local ascertaining device may particularly comprise an observation device. In other words, the surrounding environment may be observed by means of an observation device. The observation device may, for example, comprise a camera, or be provided as a camera. Alternatively or additionally, the observation device may include one or multiple sensors, for example radar. The modelling of the surrounding environment may be carried out by means of an analysis algorithm, for example. In other words, the data generated by the observation device may be analysed by means of an algorithm, it being thereby possible to model particularly the surrounding environment of the ascertaining device. Modelling may be understood to mean a simulation of the surrounding environment, for example.

Observing and modelling the surrounding environment of the local ascertaining device may be carried out particularly by means of a tracking system. Tracking systems may particularly determine a location of objects, particularly in a defined area. For example, multiple cameras may register an object in a room. The location of the object in the coverage area may be determined via triangulation based on the direction of the object in the two camera images and the exact location of the cameras with respect to one another. The determination may take place in visible light or in other wavebands. An environmental model may be generated based on multiple such measurements.

In other words, first, a surrounding environment of the local ascertaining device or of the sector covered by the stop pole is captured and modelled. This may be carried out, for example, by means of an optical camera or by placing marking objects at specific, essential points, such as a curb. A model of the stop area may thus be generated.

In a second step 24 of the method 20, information on the vehicle is received via wireless communication, particularly from the local ascertaining device. For example, the information on the vehicle via wireless communication may be information on a position and/or a route and/or a destination and/or an identification of the vehicle. Furthermore, in the second step 24 of method 20, information on the potential passenger is received via wireless communication, particularly from the local ascertaining device. For example, the information on the potential passenger may be received by an electronic mobile device of the potential passenger via wireless communication. In a further development, the information on the potential passenger via

wireless communication may be from an electronic mobile device of the potential passenger, information on a position and/or a route and/or a destination and/or an identification of the potential passenger. The information may be transmitted and/or received preferably via wireless communication between the ascertaining device and the vehicle and/or between the ascertaining device and the electronic mobile device of the potential passenger via wireless LAN.

When a passenger enters the area observed by means of the local ascertaining device, thus the area in which the stop may be planned, the electronic mobile device of the passenger may communicate with the local ascertaining device. In other words, the electronic mobile device of the passenger may register with the local ascertaining device. This may take place, for example, via wireless LAN and/or an application of a mobility service provider who provides the vehicle. The exact position of the electronic mobile device may be ascertained by the local ascertaining device particularly via triangulation. A signal strength or directional antennae may be used for positioning. The same process may take place in the vehicle. Here, for example, the smartphone of the ride-sharing driver, telematics hardware of the mobility provider, a device in the vehicle or an autonomous vehicle itself serves as a communication partner. The assignment of passenger and vehicle may particularly take place via the mobility service.

In a further development, the expected arrival time of the partner in the stop area may be transmitted to the stop pole for better planning even before the spatial capturing. In a further development, a wireless LAN connection to the vehicle may be used in order to upload or download data economically from the vehicle during the time in the stop area.

In a third step 26 of the method 20, a position of the stopping area for the vehicle and for the potential passenger of the vehicle is ascertained as a function of the surrounding environment of the local ascertaining device and of the information on the vehicle and the information on the potential passenger. For the ascertainment of the position of the stopping area, particularly multiple criteria may be applied. For example, the distance of the passenger and the vehicle with respect to one another may be analysed, as well as their speeds. Furthermore, free spots in the surrounding environment may be ascertained by means of the observation device of the ascertaining device. For example, a free spot may be provided as a parking spot or as a bus stop or as a taxi stand. Boarding of a potential passenger onto the vehicle may thus be facilitated. In a further development, predefined areas may be set, which may be used as stopping areas.

In other words, the local ascertaining device or the stop pole plans the optimal locations and sequence of boarding areas based on all currently registered participants, particularly the potential passenger and the vehicle, and their positions, and transmits these positions to the participants.

In a fourth step 28 of the method 20, the position of the stopping area is transmitted to the vehicle and to the electronic mobile device of the potential passenger. The ascertained position may be transmitted and/or received preferably via wireless communication between the ascertaining device and the vehicle and/or between the ascertaining device and the electronic mobile device of the potential passenger.

A virtual boarding location may be set within a defined stop area by means of the method 20, and the vehicle and the passenger may be guided to this location. By means of the local ascertaining device, which may also be referred to as a stop pole, the physical environment, the vehicle, and the electronic mobile device, for example, a smartphone, of the passenger, may be captured spatially. Furthermore, the stop pole transmits the information on the stopping area or the boarding location to the participating parties. A program in a vehicle or electronic mobile device may display the virtual boarding location by overlaying the camera image with this area using, for example, augmented reality.

By means of the method, particularly local, physical structures, such as objects, buildings, and/or a curb, as well as mobile electronic units with a radio connection, such as mobile electronic devices, for example smartphones or electronic glasses, correspondingly equipped vehicles, for example with a communication unit, or autonomously acting robots, for example self-driving cars, may be captured simultaneously in a common coordinate system via a local ascertaining device. This information may then be used for planning the optimal boarding location for many boardings taking place simultaneously and shortly after one another.

In a further development, several passengers may be transported by means of one vehicle. For example, stops may be ascertained for potential passengers in a defined order by means of the local ascertaining device or additional local ascertaining devices. The potential passengers may thus board at optimal stops one after another or simultaneously.

In a further development, autonomously driving vehicles may be taken or driven with the stop pole directly as the pilot to their destinations, or information necessary for this, for example a layout and/or other road users, may be transmitted.

In an exemplary embodiment, defined boarding locations may be predefined, particularly with the defined boarding locations being numbered. In the case of defined and numbered boarding locations, the number may be transmitted to the vehicle or to the driver of the vehicle and the potential passenger.

In a further development, a bus terminal may be operated without fixed stops by means of the method 20. In an exemplary embodiment, additionally or alternatively to the passengers, autonomously moved units such as luggage or robots may be coordinated with the system.

Furthermore, passengers and vehicles may be informed that their partner is directly in front of them, and the authentication process may thus be shortened or omitted. In a further development, vehicles in the stop area which do not register may be photographed and fined, particularly for wrongful parking. In an exemplary form, free stopping areas may furthermore be auctioned.

Fig. 2 shows a schematic diagram of a method 20 for ascertaining a position of a stopping area for a vehicle and a potential passenger of the vehicle as a meeting place of the vehicle and the potential passenger according to an exemplary embodiment of the present invention. The method 20 may be executed by means of a local ascertaining device, particularly according to the local ascertaining device according to Fig. 3. The method 20 according to Fig. 2 may comprise the steps according to the method 20 according to Fig. 1. Furthermore, the method 20 according to Fig. 2 may comprise an additional fifth step 30. In the fifth step 30 of the method 20, the ascertained stop is displayed. For example, the ascertained stop may be displayed as an image by means of a display device of the local ascertaining device. For this purpose, the display device of the local ascertaining device may project, for example, a corresponding image on a surface in the surrounding environment of the local ascertaining device. For this purpose, the display device may be provided as a projecting device, for example. In other words, the boarding area may be projected directly onto the ground by the stop pole. Furthermore, their respective boarding area may be indicated to the vehicle and the rider using a defined colour or a specific symbol.

In a further development, the ascertained stop may be displayed for a driver of the vehicle by means of a display device of the vehicle as an image and/or as a virtual display and/or as navigation instructions to the ascertained stop. The display device may, for example, be provided as a display device in the vehicle, for example as a display, particularly in an instrument cluster of the vehicle, as a projecting device and/or as a head-up display. Preferably, the driver may be guided to the ascertained stop by means of navigation instructions.

If the destination area is still too far away and therefore not or hardly visible in a camera image, a navigation direction, such as by means of navigation instructions, for example, left, right, straight, may be used in order to reach a close range of the destination first.

In a further development, the ascertained stop may be displayed by means of a display device of the electronic mobile device of the potential passenger as an image and/or as a virtual display and/or as navigation instructions to the ascertained stop. For example, the stop may be displayed on a map, which is shown on the electronic mobile device or on a display of the electronic mobile device. Preferably, the potential passenger may be guided to the ascertained stop by means of navigation instructions.

Preferably, an application on the electronic mobile device or on the smartphone, particularly a smartphone app of the passenger, and, in a further development, also an app of the driver or the vehicle, may use one or more linear and rotational velocity sensors of the smartphone or the vehicle as well as the direction of the stop pole signal in order to determine the orientation of the smartphone or of the vehicle in the space. Together with the location of the boarding area, the projection of the area may be calculated in the camera image and overlayed over the image of the smartphone or of the display device of the vehicle. The continuous transmission of the location of the area from the stop pole enables particularly constant superimposition, even in the case of a moving smartphone or vehicle. The passenger or the vehicle may move in this area only.

Fig. 3 shows a schematic diagram of a System 32 according to an exemplary embodiment of the present invention. The system 32 is provided for ascertaining a position of a stopping area 34 for a vehicle 36 and for a potential passenger 38 of the vehicle 36 as a meeting place of the vehicle 36 and the potential passenger 38. The system includes a local ascertaining device 40, a device 42, particularly in the vehicle 36, and an electronic mobile device 44. The electronic mobile device 44 may particularly belong to the potential passenger 38.

The local ascertaining device 40 may particularly be configured to execute a method according to the method according to Fig. 2 and/or according to Fig. 3. The local ascertaining device 40 preferable comprises an observation device 46. The observation device 46 may, for example, comprise a camera, or be provided as a camera. Alternatively or additionally, the observation device 46 may comprise one or multiple sensors, for example radar. By means of the observation device 46, a surrounding environment 48, for example, of the local ascertaining device 40 may be observed. The ascertained data of the observation device may, for example, be used as a basis for modelling or simulating a surrounding environment of the local configuration device 40.

Furthermore, the local configuration device 40 may comprise a transmission and receiving device 50. By means of the transmission and receiving device 50, particularly data may be received and transmitted. For example, data from the vehicle 36 and/or from the potential

passenger 38 or from the mobile terminal 44 of the potential passenger 38 may be received. For example, information on the vehicle, information on a position, and/or a route, and/or a destination, and/or an identification of the vehicle may be received by means of the transmission and receiving device 50 via wireless communication. In a further development, information on the potential passenger 38, information on a position, and/or a route, and/or a destination, and/or an identification of the potential passenger 38 may be received by means of the transmission and receiving device 50 via wireless communication from an electronic mobile device 44 of the potential passenger 38. Preferably, information may be transmitted and/or received via wireless communication between the ascertaining device 40 and the vehicle 36 and/or between the ascertaining device 40 and the electronic mobile device 44 of the potential passenger 38 via wireless LAN.

Preferably, one or several of the following processes may be carried out by means of the local ascertaining device 40. By means of the local ascertaining device 40, particularly a modelling of the physical environment and/or a registration and triangulation of the smartphone of the passenger and/or a registration and triangulation of the vehicle and/or an optimisation of the seat allocation or of the stopping area and/or a transmission of the boarding area to the vehicle and passenger may be carried out.

The data received may be analysed particularly by means of the local ascertaining device 40, for example, by means of a computational unit in the local ascertaining device 40. By analysing the data, a position of a stopping area 34 may be ascertained. A position of a stopping area may particularly be the location where the vehicle 36 and the potential passenger 38 meet. In this way, the potential passenger 38 may board the vehicle 36 and be transported by means of the vehicle 36 to the desired destination. In a further development, the ascertained stopping area 34 may be displayed for example by a display device, for example, by a projecting device of the local ascertaining device 40. The ascertained stopping area 34 may, for example, be projected onto a corresponding surface in the surrounding environment of the local ascertaining device 40. The stopping area 34 may, for example, be displayed according to the stopping area 34 according to Fig. 4.

The stopping area 34 may be displayed as one continuous surface. Alternatively, as in this advantageous form, the stopping area may be subdivided into two sub-areas. A first sub-area is intended for the potential passenger 38, and a second sub-area is intended for the vehicle 36. The passenger 38 may move according to the arrow in the direction of the first sub-area. The vehicle 36 may move according to the arrow in the direction of the second sub-area.

The device 42 is particularly arranged in or at the vehicle 36. The device 42 transmits information on the vehicle 36 to the local ascertaining device 40 via wireless communication. Furthermore, the device 42 receives information on a position of a stopping area 34 for the vehicle 36 and a potential passenger 38 of the vehicle 36 as a meeting place of the vehicle 36 and the potential passenger 38 from the local ascertaining device 40. In a further development, the device 42 may comprise a display unit, the display unit being provided for displaying the ascertained stop 34 as an image and/or the ascertained stop 34 as a virtual display and/or navigation instructions to the ascertained stop 34 of the vehicle 34 for a driver of the vehicle 36. In other words, the display unit may display, particularly for the driver of the vehicle 36, a position of the stopping area 34 such that the driver of the vehicle 36 is guided to the stopping area 34. Alternatively, the stopping area 34 may also be displayed for the potential passenger 38 such that they and the vehicle 36 find one another. The stopping area 34 may, for example, be displayed according to the stopping area 34 according to Fig. 4.

The electronic mobile device 44 may particularly be an electronic mobile device 44 of the potential passenger 38 of the vehicle 36. The electronic mobile device 44 may, for example, be provided as a smartphone or as augmented reality glasses. The electronic mobile device 44 transmits information on the potential passenger 38 to a local ascertaining device 40 via wireless communication. Furthermore, the electronic mobile device 44 receives information from the local ascertaining device 40 on a position of the stopping area 34 for the vehicle 36 and for the potential passenger 38 of the vehicle 36 as a meeting place of the vehicle 36 and the potential passenger 38. In a further development the electronic mobile device 44 may comprise a display unit, the display unit being provided for displaying the ascertained stop 34 as an image and/or the ascertained stop 34 as a virtual display and/or navigation instructions to the ascertained stop 34 for the potential passenger 38 of the vehicle 36. The display unit may, for example, display the display of a smartphone as an electronic mobile device 44. In other words, the display unit may display a position of the stopping area 34, particularly for the potential passenger 38 of a vehicle, such that the potential passenger 38 is guided to the stopping area 34. The stopping area 34 may, for example, be displayed according to the stopping area 34 according to Fig. 4.

Preferably, one or both of the following processes may be carried out by means of the electronic mobile device 44. By means of the electronic mobile device 44, particularly a location of the destination area or stopping area may be received and/or the stopping area may be superimposed on the camera image.

By means of augmented reality glasses, particularly virtual contents may be superimposed on the visible environment, thereby augmenting the environment. In order to determine one's own position relative to the environment, particularly during movement, these glasses may use

outside-in tracking or inside-out tracking. In inside-out tracking the camera in the glasses tracks the movement of static objects in the camera image and calculates therefrom the proper motion of the camera or of the glasses. Furthermore, these glasses may recognize surfaces in the environment on which virtual objects may be placed, of which a current perspective view is continually updated using the movement of the glasses. The virtual object thus appears to remain static in the environment. For this purpose, particularly during movements of the camera, surfaces carrying out continuous movements may be searched for and thus be mapped to continuous objects. A 3D model of the surrounding environment may be generated by linking positional changes of these surfaces in the image to velocity data of the device, which also contains a camera.

Fig. 4 is a schematic diagram of a stopping area 34 according to an exemplary embodiment of the present invention. The stopping area 34 may, for example, be ascertained by means of the method according to the method according to Fig. 1 and/or according to Fig. 2. Furthermore, the stopping area 34 may be provided according to the stopping area according to Fig. 3.

In this advantageous form, the stopping area 34 is situated in a surrounding environment 48. The stopping area 34 is particularly projected as a rectangular frame onto the ground. The stopping area 34 is preferably the area in which the potential passenger meets the vehicle and particularly gets into or boards the vehicle.

Claims

1. A method (20) for ascertaining a position of a stopping area (34) for a vehicle (36) and for a potential passenger (38) of the vehicle (36) as a meeting place of the vehicle (36) and the potential passenger (38) by means of a local ascertaining device (40), comprising the following steps:

observing and modelling a surrounding environment (48) of the local ascertaining device (40),

receiving information on the vehicle (36) via wireless communication, receiving information on the potential passenger (38) via wireless communication, particularly from an electronic mobile device (44) of the potential passenger (38),

ascertaining a position of the stopping area (34) for the vehicle (36) and for the potential passenger (38) of the vehicle (36) as a function of the surrounding environment (48) of the local ascertaining device (40) and the information on the vehicle (36) and the information on the potential passenger (38),

transmitting the position of the stopping area (34) to the vehicle (36) and to the potential passenger (38), particularly to the electronic mobile device (44) of the potential passenger (38).

2. A method (20) according to any one of the preceding claims, wherein the step of observing and modelling the surrounding environment (48) of the local ascertaining device (40) is executed by means of an observation device (46) of the local ascertaining device (40).

3. The method (20) according to claim 2, wherein the observation device (46) is provided as a camera.

4. The method (20) according to any one of the preceding claims comprising a step of displaying the ascertained stop as an image by means of a display device of the local ascertaining device (40).

5. The method (20) according to any one of the preceding claims comprising a step of displaying the ascertained stop as an image and/or the ascertained stop as a

virtual display and/or navigation instructions to the ascertained stop by means of a display device of the vehicle (36) for a driver of the vehicle (36).

6. The method (20) according to any one of the preceding claims comprising a step of displaying the ascertained stop as an image and/or the ascertained stop as a virtual display and/or navigation instructions to the ascertained stop by means of a display device of the electronic mobile device (44) of the potential passenger (38).

7. The method (20) according to any one of the preceding claims, wherein, in the step of receiving information on the vehicle (36) via wireless communication, information on a position, and/or a route, and/or a destination, and/or an identification of the vehicle (36) is received.

8. The method (20) according to any one of the preceding claims, wherein, in the step of receiving information on the potential passenger (38) via wireless communication, information on a position, and/or a route, and/or a destination, and/or an identification of the potential passenger (38) is received from the electronic mobile device (44) of the potential passenger (38).

9. The method (20) according to any one of the preceding claims, wherein information may preferably be transmitted and/or received via wireless communication between the ascertaining device (40) and the vehicle (36) and/or via wireless LAN between the ascertaining device (40) and the electronic mobile device (44) of the potential passenger (38).

10. A local ascertaining device (40) configured to execute the method (20) of the preceding claims.

11. A device (42) in a vehicle (36), wherein the device (42) sends information on the vehicle (36) via wireless communication to a local ascertaining device (40) according to claim 10, wherein the device (42) receives information on a position of a stopping area (34) for the vehicle (36) and on a potential passenger (38) of the vehicle (36) as a meeting place of the vehicle (36) and the potential passenger (38) from the local ascertaining device (40).

12. The device (42) according to claim 11, wherein the device (42) comprises a display unit, the display unit being provided for displaying the ascertained stop

as an image, and/or the ascertained stop as a virtual display, and/or navigation instructions to the ascertained stop of the vehicle (36) for a driver of the vehicle (36).

13. An electronic mobile device (44) of a potential passenger (38) of a vehicle (36), wherein the electronic mobile device (44) sends information on the potential passenger (38) via wireless communication to a local ascertaining device (40) according to claim 10, wherein the electronic mobile device (44) receives information on a position of a stopping area (34) for the vehicle (36) and for the potential passenger (38) of the vehicle (36) as a meeting place of the vehicle (36) and the potential passenger (38) from the local ascertaining device (40).

14. The electronic mobile device (44) according to claim 13, wherein the electronic mobile device (44) comprises a display unit, wherein the display unit is provided for displaying the ascertained stop as an image, and/or the ascertained stop as a virtual display, and/or navigation instructions to the ascertained stop for the potential passenger (38) of the vehicle (36).

15. A system (32) for ascertaining a position of a stopping area (34) for a vehicle (36) and for a potential passenger (38) of the vehicle (36) as a meeting place of the vehicle (36) and the potential passenger (38), comprising a local ascertaining device (40) according to claim 10, a device (42) according to any one of claims 11 to 12, and an electronic mobile device (44) according to any one of claims 13 to 14.