An ATM-requesting-and-accessing System and Method

The present invention relates to an ATM-requesting-and-accessing system and a method of requesting and securely accessing a vehicle-integrated ATM.

In certain localities, a lack or reduced access to ATMs may restrict residents from accessing basic banking functionalities such as withdrawing cash.

Businesses which accept solely cash may suffer as a result. The need to use cash may be caused by technical issues with using debit or credit cards. Alternatively, small businesses may restrict or not provide card reading facilities due to the charges for using such facilities.

Some users may not trust or even be able to use online banking. As a result, these users must walk to their nearest cashpoint, yet users with restricted mobility, such as the elderly, may find the walk challenging due to the distance. To reduce the number of trips they must make, these users may increase the amount of cash they withdraw, thereby exposing themselves to an increased risk of losing large sums of money and/or being mugged.

One solution is to provide itinerant ATM services. However, these itinerant ATM services tend to go to localities where there are large concentrations of potential users, such as at festivals, rather than serving scarcely-populated localities. Once arrived at the locality, they tend to be parked and become stationary ATMs, at least for the duration of the festival. Some itinerant ATM services may even need to be towed to be moved. The itinerant ATM services also tend to not be hailable or available on demand by individuals but rather, are organised by the festival organisers. Furthermore, with ATM-related scams increasing in sophistication, security and traceability when withdrawing cash is a priority, yet these itinerant ATMs rarely provide additional security features for users' peace of mind.

The present invention seeks to provide a solution to these problems.

According to a first aspect of the invention, there is provided an ATM-requesting-and-accessing system for requesting and securely accessing the ATM services system, comprising: a communications device which generates and transmits a mobile-ATM

request signal, the communications device comprising a geographical locator for determining a geographic location of the communications device, a communicator for transmitting the mobile-ATM request signal comprising geographic location data associated with the said geographic location; a vehicle comprising a mobile-ATM request signal receiver adapted to receive the said mobile-ATM request signal transmitted by the communications device, for indicating to the vehicle the said geographic location of the communications device, an ATM-dispenser onboard the vehicle, the ATM-dispenser dispensing an ATM-output in response to an ATM-input from a user, a closure element of the vehicle, actuatable between a closed condition and an open condition, wherein the ATM-dispenser is accessible to the user only when the closure element is in the open condition, a first unique-identifier receiver communicable with the closure element to lock or unlock the closure element, wherein, upon presentation of a first unique identifier of the communications device, the first unique-identifier receiver unlocks the closure element, a second unique-identifier receiver communicable with the ATM-dispenser, wherein upon presentation of a second unique identifier of the user and/or the communications device, the second unique-identifier receiver permits the user to provide the said ATM-input to the ATM-dispenser. This system provides users needing cash with an easy, secure and traceable to request on-demand itinerant ATM services system. It is particularly beneficial for localities having few or no ATMs, and individuals with restricted mobility for whom a walk is challenging.

Optionally, the communications device may be at least one of a mobile telecommunications device, a fixed-location requestor and a mobile requestor device. Fixed-location requestors and mobile requestor devices provide access to the system to those users having no mobile telecommunications device. A mobile telecommunications device provides an ease of access wherever the user is located.

Beneficially, the ATM-requesting-and-accessing system may further comprise a control server, such that the communicator and the vehicle are communicable via the control server. Furthermore, the control server may comprise a software application or platform for allowing at least one-way communication from the communicator to the vehicle. The software application provides coordination of multiple vehicles, traceability, security by

not necessarily requiring the user to provide personal contact details and safety by not distracting the driver with calls.

Optionally, the first unique identifier and/or the second unique identifier may be at least one of a card, a key, a key fob, a device-related identifier, biometric data, a string of at least one character and/or at least one number, a scannable bar code, and a QR code received and/or generated by the user and/or the mobile telecommunications device. Furthermore, the device-related identifier may be at least one of a near-field communication protocol, an IP address and a serial number associated with the communications device. Advantageously, the closure element may comprise a door into or of the vehicle. Additionally, the closure element is electronically actuatable. Optionally, the closure element may be hingeably moveable such that the closure element is moveable from the closed position to the open condition or vice-versa. Preferably the closure element is slidably moveable such that the closure element is moveable from the closed position to the open condition or vice-versa. The advantage is that there are two layers of security. The first layer prevents the closure element from being unnecessarily open, thus reducing the risk of anyone tampering with the ATM-distributer. The second layer of security ensures the user is the correct person and authorised to use the ATM-services.

Furthermore, the ATM-dispenser may comprise a user-interface which is accessible to the user, when the user is outside of the vehicle and when the closure element is in the open condition. The user is not required to enter a strange vehicle, which increases both the user and the driver's safety.

Optionally, the closure element may automatically actuate from the open condition to the closed condition following completion of the user interaction with the user-interface. Additionally, the ATM-requesting-and-accessing system may further comprise a sensor adapted to detect the presence of the user within a predetermined sensing range. The driver is not required to actuate the closure element to the closed position as this is done automatically.

Preferably, the ATM-requesting-and-accessing system, further comprises a remote server having a database comprising banking data associated with the user. Beneficially, the remote server may include an authentication verification module for verifying the identity of the user, and an authorisation verification module for authorising or refusing the output request. Furthermore, the second unique-identifier receiver is adapted to only permit the user to provide the ATM-input upon authentication of the user via the authentication verification module. Additionally, the ATM-dispenser may be adapted to only provide a requested output upon authorisation from the authorisation verification module. The second layer of security ensures the user is not attempting to steal someone else's identity.

According to a second aspect of the invention, there is provided a method of requesting and securely accessing a vehicle-integrated ATM, the method comprising the steps of: a] outputting a mobile-ATM request signal from a communications device, the mobile-ATM request signal comprising a geographic location data being associated with a geographic location and a first unique identifier of the communications device and/or a user thereof; b] on arrival of the vehicle-integrated ATM at the said geographic location, a closure element of or associated with an ATM-dispenser being openable when presented by the user with the first unique identifier; and c] when the closure element is open, utilising a second unique identifier which is different to the first unique identifier to request an output from the ATM-dispenser.

The invention will now be more particularly described, with reference to the accompanying drawings, in which:

Figure 1 shows a representation of one embodiment of an ATM-requesting-and-accessing system in accordance with the first aspect of the invention;

Figure 2a shows a perspective representation of one embodiment of a vehicle-integrated ATM in accordance with the first aspect of the invention, showing a closure element in a closed condition;

Figure 2b shows a perspective representation of the vehicle-integrated ATM of Figure 2a, showing the closure element in an open condition;

Figure 3 shows a generalised block diagram of one embodiment of an ATM-requesting-and-accessing system in accordance with the first aspect of the invention;

Figure 4a shows a representation of one embodiment of an ATM-requesting-and-accessing system in accordance with the first aspect of the invention, wherein a user is generating a mobile-ATM request signal;

Figure 4b shows a top-down representation of the ATM-requesting-and-accessing system of Figure 1a, wherein the user is able to interact with a vehicle-integrated ATM after said vehicle-integrated ATM has moved to the user's location; and

Figure 5 shows a generalised flow-chart of the decision-making logic process of the method of requesting and securely accessing a vehicle-integrated ATM, in accordance with the second aspect of the invention.

Firstly, referring to Figures 1 to 3, there is shown an ATM-requesting-and-accessing system generally indicated as 10 wherein an itinerant ATM services provider provides access to on-demand itinerant ATM services upon request from a user 12.

The itinerant ATM services provider comprises at least one vehicle 14, and preferably a plurality of vehicles 14 within a locality.

The or each vehicle 14 is preferably a driveable and/or moveable land-vehicle 14, having a chassis 16, at least one driver-door 18, and wheels 20, such that the vehicle 14 is drivable to a specific location. The or each vehicle 14 also has a mobile-ATM request signal receiver 22, a guidance system 24, a closure element 26, an ATM-dispenser 28 and a sensor 30.

The mobile-ATM request signal receiver 22 is a sub-unit of the or each vehicle 14 which receives and processes a mobile-ATM request signal 32 or request to use the on-demand itinerant ATM services. The mobile-ATM request signal receiver 22 is communicable with the guidance system 24.

The guidance system 24 is an onboard navigator. Based on a current location of the vehicle 14, a desired location and a map, the guidance system 24 computes and provides the vehicle 14 and/or driver with a route 34 (best shown in Figure 4b) to follow to reach the desired location via a map showing roads 36 and optionally oral instructions.

The closure element 26 is a security cover or an ATM-door. The closure element 26 is electronically actuatable between a closed condition, as shown in Figure 2a and an open condition as shown in Figure 2b. When in the closed condition, the closure element 26 prevents anyone from accessing the ATM-dispenser 28, thereby providing a tamper-proof mechanism. The closure element 26 is actuatable by being slidable along at least one and preferably two rails 38.

The rails 38 are fastened or secured to the chassis 16 and/or the ATM-dispenser 28. They are orientated vertically and positioned such that the closure element 26 may actuate between the open and the closed conditions by sliding vertically along said rails 38, although other orientations and positions may be possible.

A first unique-identifier receiver 40 is security module suitable for receiving a first unique identifier 42. The first unique-identifier receiver 40 is positioned on or near the closure element 26 and is communicable with the closure element 26, such that upon presentation of the first unique identifier 42 by a communications device 44 accessed by the user 12, the first unique-identifier receiver 40 unlocks and opens the closure element 26. Preferably, the first unique-identifier receiver 40 is a keypad.

The first unique identifier 42 uniquely identifies the user 12 and/or the communications device 44. The first unique identifier 42 may be received and/or generated by the user 12 and/or a communications device 44 accessed by the user 12. The first unique identifier 42 may be included in the mobile-ATM request signal 32. In this case, the first unique identifier 42 is a string of at least one character and/or at least one number. The first unique identifier 42 is, in this case, generated by the mobile-ATM services provider.

The ATM-dispenser 28 or vehicle-integrated ATM dispenses an ATM-output 46 in response to an output request or ATM-input 48 from the user 12. The ATM-dispenser 28 is onboard and inside the vehicle 14. The ATM-dispenser 28 is separable from the vehicle 14 for ease of maintenance or servicing and replenishing the cash dispenser in a more secure environment. In the absence of an interaction with the user 12, the ATM-dispenser 28 is hidden from sight by the closure element 26, as in Figure 2a. The ATM-dispenser 28 is accessible to the user 12 only when the closure element 26 is in the open condition, as shown in Figure 2b. The ATM-dispenser 28 has a user-interface and a second unique-identifier receiver 50.

The user-interface comprises a screen 52. The user-interface faces outwards relative to the vehicle 14 such that in use, a user 12 may access the user-interface from outside the vehicle 14, without having to enter the vehicle 14. Not having to enter the vehicle 14 may be desirable for safety reasons for either or both the user 12 and the driver.

The ATM-output 46 is at least one of cash, a receipt, a display of an account balance, a receipt showing an account balance, an error message indicating a refusal to provide the requested output, a query such as whether the user 12 has a further ATM-input 48 or request and any other ATM functionality.

The screen 52 may display at least part of the ATM-output 46. The screen 52 is preferably not adapted to accept tactile inputs.

The second unique-identifier receiver 50 is a security feature associated with the ATM-dispenser 28 for receiving a second unique identifier 54 and at least one ATM-input 48. The second unique-identifier receiver 50 comprises a keyboard 56 or pin pad and a card reader 58. The second unique-identifier receiver 50 is communicable with a remote bank server 60. Following input of the second unique identifier 54, the second unique-identifier receiver 50 may grant or deny the user 12 permission to input the ATM-input 48. Following input of the at least one ATM-input 48, the second unique-identifier receiver 50 may grant or deny the ATM-dispenser 28 permission to comply with the ATM-input 48.

The second unique identifier 54 uniquely identifies the user 12 and/or communications device 44. The second unique identifier 54 is distinct from the first unique identifier 42. The second unique identifier 54 is preferably a bank card and associated pin code, issued by a bank to the user 12.

The remote bank server 60 is a server maintained by the said bank, as shown in Figure 3. The remote bank server 60 has at least one layer of security and banking data.

Banking data comprises data relating to the user's 12 finances, such as a bank account or accounts, the balance of the or each account, overdraft amounts, personal and/or security data associated with and used to identify the user 12. Banking data is protected by the at least one layer of security, with which it is communicable.

The layer of security includes an authentication protocol or authentication verification module for verifying the identity of the user 12 based on the banking data, and an authorisation protocol or authorisation verification module for authorising or refusing an ATM-input 48 or output request from the user 12.

The sensor 30 senses the presence or absence of the user 12 within a predetermined sensing range. The sensor 30 is communicable with the closure element 26 and/or the first unique identifier receiver 40 to close the closure element 26 following interaction with the user-interface and instructs the first unique-identity receiver 40 to lock the closure element 26 when the user 12 is out of the sensing range.

The user 12 is an individual who has a communications device 44, the first unique identifier 42 and the second unique identifier 54.

The communications device 44 is preferably a two-way communications device 44 via which the user 12 may emit the mobile-ATM request signal 32 to request access to the itinerant ATM services provider. Preferably, the communications device 44 is a mobile or portable communications device, such as a mobile telecommunications device, and

more specifically preferably being a mobile phone, smartphone or smartwatch such as one running an Android RTM, Apple RTM or Windows RTM operating system. The communications device 44 has a geographic locator 62 and a communicator 64.

The geographic locator 62 is a module or sub-unit of the communications device 44 which can determine a geographic location of the communications device 44, and by extension, the user 12. The geographic locator 62 provides geographic location data 66 associated with the geographic location to the communicator 64. The geographic location data 66 may be an address or GPS coordinates obtained from the satellite system, from a local geographic position indicator or from the user 12 directly.

The communicator 64 is a module or sub-unit of the communications device 44. The communicator 64 transmits the mobile-ATM request signal 32, which includes at least geographic location data 66, to the itinerant ATM services provider. The communicator 64 is communicable with the itinerant ATM services provider via a remote control server 68, itself accessible via a network.

The network may include a phone network or a satellite network accessible by a satellite phone, Bluetooth RTM, or Internet, whether wireless or cabled.

The control server 68 is a remote device which hosts a software application 70 or platform. The software application 70 or platform provides two-way communication between the communications device 44 and the ATM services provider.

In use, the user 12 desiring to use on-demand itinerant ATM services preferably walks to the side of a road where a vehicle 14 is able to temporarily stop and/or park. The user 12 takes out the communications device 44, in this case, a mobile phone. The geographical locator 62 obtains the geographic location of the communications device 44 and provides the geographic location data 66 associated with the geographic location to the communicator 64. The communicator 64 then sends via the network a mobile-ATM request signal 32 which comprises at least the geographic location data 66 as shown in Figure 4a.

The software application 70 periodically or continuously checks for a mobile-ATM request signal 32 from a further user 12. This indicated at step S100 in Figure 5.

Upon receiving the mobile-ATM request signal 32 comprising geographic location data 66, from the communicator 64, the software application 70 transmits it to the or all vehicles 14. The closest vehicle 14 and/or the first vehicle 14 available may elect to respond to the mobile-ATM request signal 32, depending on whether the distance travelled or the waiting time for the user 12 is to be optimised. The closest and/or first available vehicle 14 responds by sending confirmation and a first unique identifier 42 to the software application 70. The software application 70 transmits at least the first unique identifier 42 to the communications device 44. The first unique identifier 42 therefore also functions as a receipt, a proof of use of the services and would allow the ATM services provider to know the order in which to service clients.

Once the or one of the vehicles 14 has confirmed, the guidance system 24 of the relevant vehicle 14 receives the geographic location data 66 from the mobile-ATM request signal receiver 22 and proposes a route 34 to the geographic location which the vehicle 14 follows, as shown in Figure 4b and at step S120 in Figure 5.

Once the vehicle 14 has arrived at the geographic location, the user 12 approaches the vehicle 14. The closure element 26 is in the closed condition.

The user 12 inputs the first unique identifier 42 to the first unique-identifier receiver 40. The first unique identifier 42 presented by the communications device 44 and/or the user 12 is checked against the first unique identifier 42 generated by the vehicle 14. If no first unique identifier 42 is received or if an erroneous first unique identifier 42 is received the closure element 26 remains closed, as shown in S140. If the first unique identifiers 42 match or are complementary, the first unique identifier receiver 40 unlocks and opens at least partially the closure element 26, as shown in step S160. The closure element 26 opens by electronically sliding down along rails 38 electronically, without necessarily requiring any further input from the user 12.

The user 12 is able to access the user-interface of the ATM-dispenser 28 when the closure element 26 is at least partly open. The user-interface is accessible to the user 12 directly from outside the vehicle 14 and only when the closure element 26 is at least partially open.

The second unique identifier 54 is then presented to the second unique-identifier receiver 50, as in Figure 3 and at step S180. As the second unique identifier 54 is a bank card and a pin code, the bank card is inserted into the card reader 58 and the pin code is entered via the keyboard 56. The second unique identifier receiver 50 obtains information from the bank card and provides this information and the pin to the remote bank server 60, specifically to the authentication verification module.

The authentication verification module compares the information and pin code provided against the banking data of the user 12 to either confirm the identity of the user 12 and grant permission to proceed or refuse permission to proceed.

If the second unique identifier 54 is erroneous or not received, the ATM-dispenser 28 does not permit the user 12 to provide an ATM-input 48 or output request and the closure element 26 may even close as shown at step S200.

If the permission to proceed is received, the second unique identifier 54 permits the user 12 to input an ATM-input 48. This will, most often, be a request to withdraw cash, but may include in addition or instead, a request to check an account balance, transfer money to or from an account or any other usual functionalities available at an ATM-dispenser 28.

The ATM-input 48 is transmitted by the second unique-identifier receiver 50 to the authorisation verification module which can grant or refuse to grant authorisation or permission to comply with the request. For example, if the ATM-input 48 is to withdraw a sum of money but the account balance is null or overdrawn beyond an authorised overdraft, then the permission may not be granted. If the authorisation is granted, the

ATM-dispenser 28 complies with the ATM-input 48 by providing the requested ATM-output 46. If the authorisation is not granted, the user-interface may instead display an error message via the screen 52.

There may be more than one ATM-input 48 thus the permission may need to be obtained for each ATM-input 48 or output request, as shown at step S220.

Following completion of the interaction with the user-interface, when the user 12 steps away from the vehicle 14 and out of the predetermined sensor's 30 range, the closure element 26 preferably closes after each user 12. The completion of the user interaction and/or the sensor 30 triggers the closure element 26 to actuate from the open condition to the closed condition and become locked as shown in step S240.

Once the or all users 12 in the immediate locality or cluster have been serviced, the vehicle 14 waits until the next mobile-ATM request signal 32 is received.

Although the vehicle is in this arrangement driven by a person, it could easily be envisioned that the vehicle may be driven by a robotic driver or the vehicle may be semi- or fully autonomous, in which case a driver-door may not be required. The vehicle may have additional security features such as a tracker for tracking the GPS location of the vehicle, an alarm or alarms, driver-specific recognition software and/or devices such as door handle, steering wheel, handbrake or on-button which may only be moved or actuated by one correct and/or registered driver. The vehicle may also have bullet-proof and/or shaded windows, be made at least in part of a material strengthened to withstand large impact forces and/or lockable wheels.

Although in this arrangement, the vehicle is land-based, it could be envisioned that the vehicle is a manned or unmanned aerial vehicle, such as a plane or a drone, which would reduce both response times, road congestion and/or serve very remote localities. Additionally or alternatively, the or each vehicle could be an aquatic-based vehicle such as a boat or ship, in localities which are built up on water, such as Venice. The vehicle could also be a hovercraft capable of travelling over both land and water, for example in

flooded localities such as in the wake of natural disasters. The fleet of vehicles may even comprise any combination of the above vehicles.

The vehicle or any element of the vehicle may additionally have a light and/or a camera. A light may be desirable to indicated where to present the first unique identifier and the second unique identifier and help the user to find and provide their unique identifiers. If it is late in the day and therefore dark, the light, if available, is switched on, at least in the presence of the user.

A camera may be provided to increase the security of both the user and the driver and to deter tampering with the ATM-dispenser. Preferably, the camera would not be directed to the pin pad or the screen of the user-interface.

Although two-way communication ability is preferred, the remote control server, the communicator and/or the software application may only allow one-way communication from the communicator to the itinerant ATM services provider. Alternatively or additionally, the communicator may be communicable with the itinerant ATM services provider, either by phone call and/or a text sent directly to the itinerant ATM services provider.

The software application may have additional functionalities such as showing and regularly updating the position of the or all vehicles on a map of the locality. The software may also inform the user when and where their first and/or second unique identifier is being used to reduce identity theft. The software may also have an element of dynamic pricing and/or optimising clustering so as to suggest to the user a local cluster of current further users. Such clusters of users may be rewarded by reducing the fee charged per customer in the cluster and/or a predetermined radius. The software may also provide an estimated waiting time, discounts if a plurality of users request the itinerant ATM services provider within a predefined locality. The plurality of vehicles coordinates via the software application, however, alternatives may be envisaged such as via a radio system, or via a phone network.

In this arrangement, the first unique identifier is generated by the vehicle. However, the software application may instead provide both the communications device and the vehicle with the first unique identifier or complementary identifiers. Alternatively, either the user via the communications device or the vehicle provides the other with the first unique identifier either with the mobile-ATM request signal and/or in a separate communication.

Although in this arrangement, the closure element is part of the vehicle, it could easily be envisioned that the closure element is part of the ATM-dispenser. There could be a plurality of closure elements, as part of either the vehicle, the ATM-dispenser or both, whether protecting the same or different ATM-dispensers on a vehicle. Whilst the closure element is in preference, electronically actuatable, it may be manually actuatable instead, and may be hinged and/or slidable. The closure element may be actuatable by the driver instead of or in addition to the first unique identifier receiver. The closure element may have additional security features such as the driver not being able to open the closure element and/or not being able to have the vehicle turned on and/or leave the vehicle whilst the closure element is open. Preferably the closure element closes between users, however, it could be envisaged that another user may walk up to the ATM-dispenser without the closure element necessarily actuating to the closed condition after each user. This may be the case, for instance, when there is a cluster of users. The further user may still however be required to present the first unique identifier.

Although in this case, the first unique identifier is string of at least one character and/or number, the second unique identifier is a bank card and pin, the first and/or second unique identifiers may be at least one of a physical object and information associated with the physical object, the user or the communications device. For example, the first and/or second unique identifier may be at least one of a card, a key, a key fob, a device-related identifier, biometric data, a string of at least one character and/or at least one number, a scannable bar code, or a QR code. If a device-related identifier, the first unique identifier may be at least one of a near-field communication protocol, any other wireless function, an IP address and a serial number associated with the communications device. If biometric data, the first unique identifier may be at least one of a retina scan, a finger print, foot creases, vein matching data, a genetic sequence, facial features and/or facial

architecture data, voice recognition, handwriting and a scan of the user's teeth. The user and/or the communications device may be required to generate and provide this data to the remote server and/or the first or second unique identifier receivers. For example, if the first unique identifier is a near-field communication protocol, the user would position the communications device against or in proximity of the first unique identifier receiver. If biometric data, the user would present the relevant body part.

Whilst there is in preference one ATM-dispenser per vehicle, there may be a plurality of ATM-dispensers. The ATM-dispensers may be integrally formed with the vehicles, rather than separably contained within the vehicle. Although the or each ATM-dispenser is accessible from outside the vehicle, it could be envisioned that the or at least one ATM-dispenser is only accessible from within. Furthermore, the ATM-dispenser user-interface may be tactile such that the user may interact with and input an ATM-request by touching the screen. Alternatively, the user-interface may be actuatable between accepting tactile inputs and only displaying information. Whilst the preferred means of inputting data is via a keyboard, keypad or pin pad, the user-interface and/or the second unique-identifier receiver may have an alternative means suitable for inputting data such as at least one navigation button or rotatable knob.

The communications device is a mobile phone in this embodiment. Alternatively, the communications device may be a fixed-location requestor, an interactable fixed intercommunications device or simply a request-button. In this alternative embodiment, there may be a plurality of such fixed-location requestors distributed throughout a locality. Such fixed-location requestors would allow people who do not have a mobile telecommunications device, to travel to the nearest such fixed-location requestor and request the itinerant ATM services travel to the location of the fixed-location requestor.

In a further modification to the present arrangement, the itinerant ATM services provider may provide a user with a mobile requestor device, which allows the user to request itinerant ATM services by using or activating said mobile requestor device. The mobile requestor device may be the same for each user or may be user-specific such that each mobile requestor device is unique and/or provides the user with a first unique identifier.

Such a mobile requestor device may be wearable, portable such as a bracelet, a necklace, or hand-held device for the elderly. The mobile requestor device may even have a second function in the form of calling for medical help if required.

Whilst the geographic location is determined by the locator, the user may alternatively manually input the geographic location data into the software application or phone or text the vehicle directly.

It is thus possible to provide an on-demand ATM-requesting-and-accessing system for accommodating users wanting to access itinerant ATM services. It is also further possible to provide a method of requesting and securely accessing a vehicle-integrated ATM. The system and the method provide access to ATM functionalities to users have limited and/or distant ATM facilities in their locality. The itinerant ATM services have additional security features to reduce or prevent tampering with the ATM-dispenser.

The words ‘comprises/comprising’ and the words ‘having/including’ when used herein with reference to the present invention are used to specify the presence of stated features, integers, steps or components, but do not preclude the presence or addition of one or more other features, integers, steps, components or groups thereof.

It is appreciated that certain features of the invention, which are, for clarity, described in the context of separate embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable sub-combination.

The embodiments described above are provided by way of examples only, and various other modifications will be apparent to persons skilled in the field without departing from the scope of the invention as defined herein.

Claims

1. An ATM-requesting-and-accessing system for requesting and securely accessing the ATM services system, comprising:

a communications device which generates and transmits a mobile-ATM request signal, the communications device comprising

a geographical locator for determining a geographic location of the communications device,

a communicator for transmitting the mobile-ATM request signal comprising geographic location data associated with the said geographic location;

a vehicle comprising

a mobile-ATM request signal receiver adapted to receive the said mobile-ATM request signal transmitted by the communications device, for indicating to the vehicle the said geographic location of the communications device,

an ATM-dispenser onboard the vehicle, the ATM-dispenser dispensing an ATM-output in response to an ATM-input from a user,

a closure element of the vehicle, actuatable between a closed condition and an open condition,

wherein the ATM-dispenser is accessible to the user only when the closure element is in the open condition,

a first unique-identifier receiver communicable with the closure element to lock or unlock the closure element, wherein, upon presentation of a first unique identifier of the communications device, the first unique-identifier receiver unlocks the closure element,

a second unique-identifier receiver communicable with the ATM-dispenser, wherein upon presentation of a second unique identifier of the user and/or the communications device, the second unique-identifier receiver permits the user to provide the said ATM-input to the ATM-dispenser.

2. An ATM-requesting-and-accessing system as claimed in claim 1, wherein the communications device is at least one of a mobile telecommunications device, a fixed-location requestor and a mobile requestor device.

3. An ATM-requesting-and-accessing system as claimed in claim 1 or claim 2, further comprising a control server, such that the communicator and the vehicle are communicable via the control server.

4. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, wherein the control server comprises a software application or platform for allowing at least one-way communication from the communicator to the vehicle.

5. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, wherein the first unique identifier and/or the second unique identifier is at least one of a card, a key, a key fob, a device-related identifier, biometric data, a string of at least one character and/or at least one number, a scannable bar code, and a QR code received and/or generated by the user and/or the mobile telecommunications device.

6. An ATM-requesting-and-accessing system as claimed in claim 5, wherein the device-related identifier is at least one of a near-field communication protocol, an IP address and a serial number associated with the communications device.

7. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, wherein the closure element comprises a door into or of the vehicle.

8. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, wherein the closure element is electronically actuatable.

9. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, wherein the closure element is hingeably moveable such that the closure element is moveable from the closed position to the open condition or vice-versa.

10. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, wherein the closure element is slidably moveable such that the closure element is moveable from the closed position to the open condition or vice-versa.

11. An ATM-requesting-and-accessing system as claimed any one of the preceding claims, wherein the ATM-dispenser comprises a user-interface which is accessible to the user, when the user is outside of the vehicle and when the closure element is in the open condition.

12. An ATM-requesting-and-accessing system as claimed in claim 11, wherein the closure element automatically actuates from the open condition to the closed condition following completion of the user interaction with the user-interface.

13. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, further comprising a sensor adapted to detect the presence of the user within a predetermined sensing range.

14. An ATM-requesting-and-accessing system as claimed in any one of the preceding claims, further comprising a remote server having a database comprising banking data associated with the user.

15. An ATM-requesting-and-accessing system as claimed in claim 14, wherein the remote server includes an authentication verification module for verifying the identity of the user, and an authorisation verification module for authorising or refusing the output request.

16. An ATM-requesting-and-accessing system as claimed in claim 15, wherein the second receiver is adapted to only permit the user to provide the ATM-input upon authentication of the user via the authentication verification module.

17. An ATM-requesting-and-accessing system as claimed in claim 15 or claim 16, wherein the ATM-dispenser is adapted to only provide a requested output upon authorisation from the authorisation verification module.

18. A method of requesting and securely accessing a vehicle-integrated ATM, the method comprising the steps of:

a] outputting a mobile-ATM request signal from a communications device, the mobile-ATM request signal comprising a geographic location data being associated with a geographic location and a first unique identifier of the communications device and/or a user thereof;

b] on arrival of the vehicle-integrated ATM at the said geographic location, a closure element of or associated with an ATM-dispenser being openable when presented by the user with the first unique identifier; and

c] when the closure element is open, utilising a second unique identifier which is different to the first unique identifier to request an output from the ATM-dispenser.

Abstract

An ATM-requesting-and-accessing System and Method

An ATM-requesting-and-accessing system 10 for requesting and securely accessing the ATM services system, comprising a communications device 44 which generates and transmits a mobile-ATM request signal 32, the communications device 44 comprising a geographical locator for determining a geographic location of the communications device 44, and a communicator 64 for transmitting the mobile-ATM request signal 32 associated with the said geographic location. The system further comprises a vehicle 14. The vehicle 14 comprises a mobile-ATM request signal 32 receiver 22 adapted to receive the said mobile-ATM request signal 32 transmitted by the communications device 44, for indicating to the vehicle 14 the said geographic location of the communications device 44. The vehicle 14 has an ATM-dispenser 28 onboard the vehicle 14, the ATM-dispenser 28 dispensing an ATM-output 46 in response to an ATM-input 48 from a user 12 and a closure element 26 of the vehicle 14, actuatable between a closed condition and an open condition. The ATM-dispenser 28 is accessible to the user 12 only when the closure element 26 is in the open condition. A first unique-identifier receiver is communicable with the closure element 26 to lock or unlock the closure element 26, wherein, upon presentation of a first unique identifier 42 of the communications device 44, the first unique-identifier receiver unlocks the closure element 26. A second unique-identifier receiver is communicable with the ATM-dispenser 28, wherein upon presentation of a second unique identifier 54 of the user 12 and/or the communications device 44, the second-unique identifier receiver permits the user 12 to provide the said ATM-input 48 to the ATM-dispenser 28.

Refer to Figure 1

Figure 1

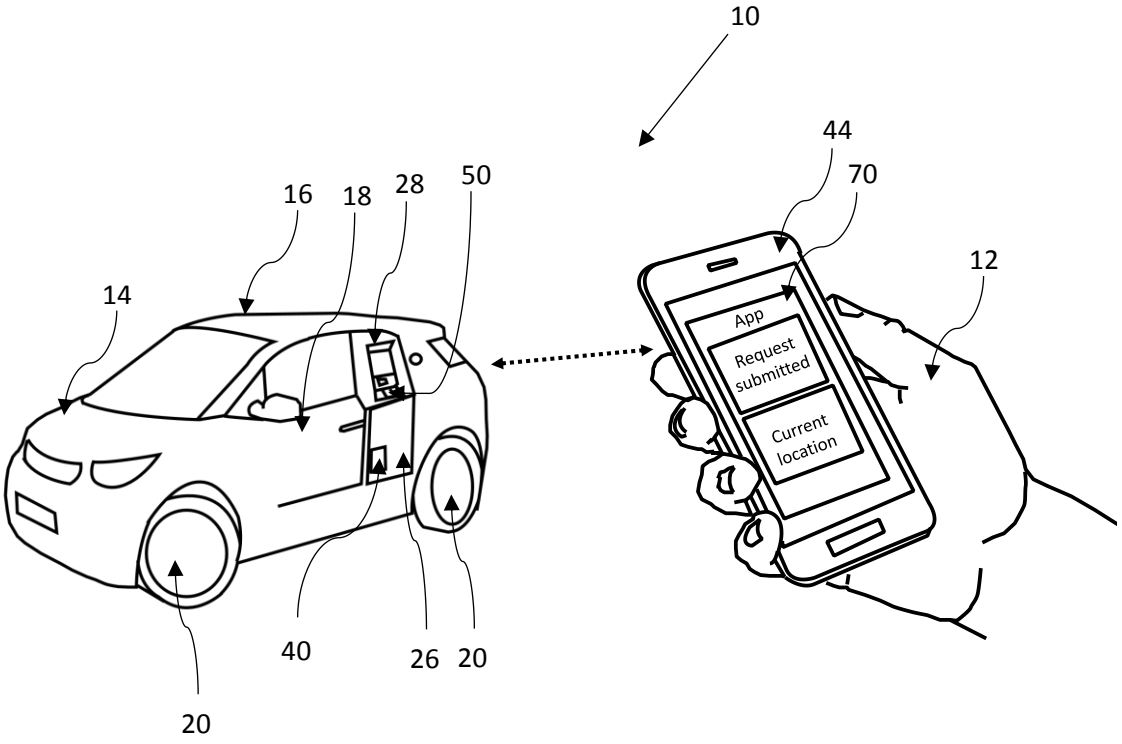

10
44
70
16
18
28
50
12
14
App
Request submitted
Current location
40
26
20
20

Figure 2a

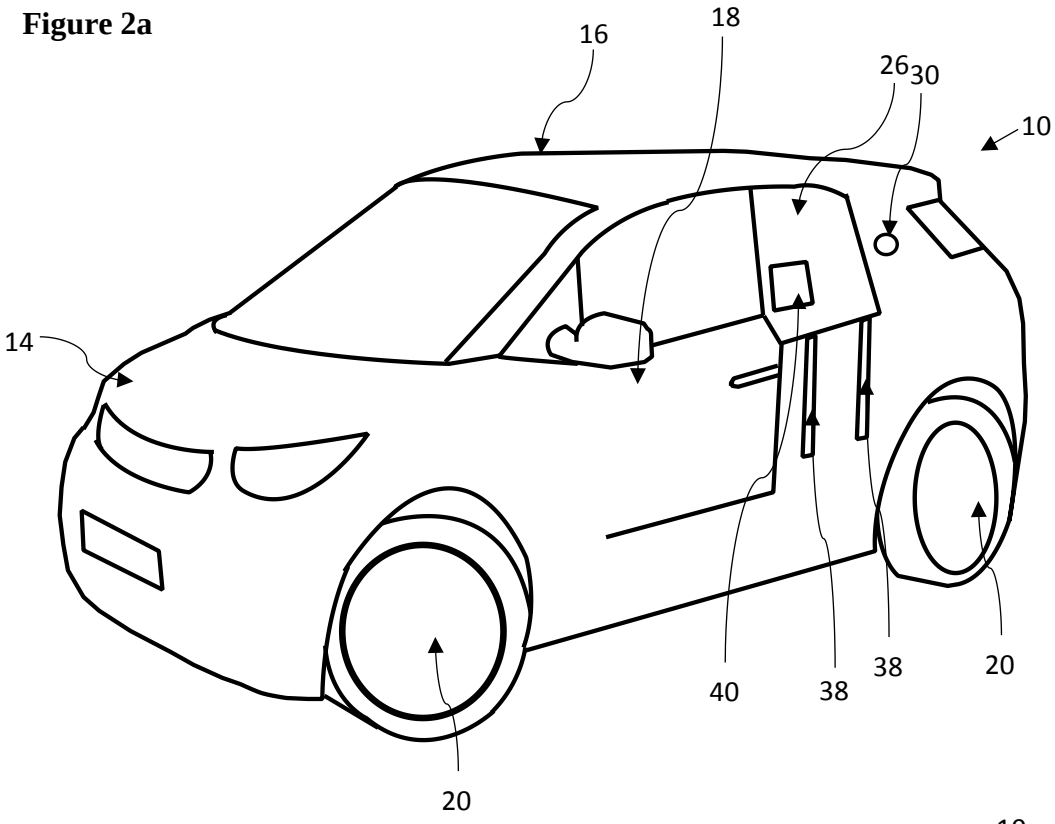


Figure 2b

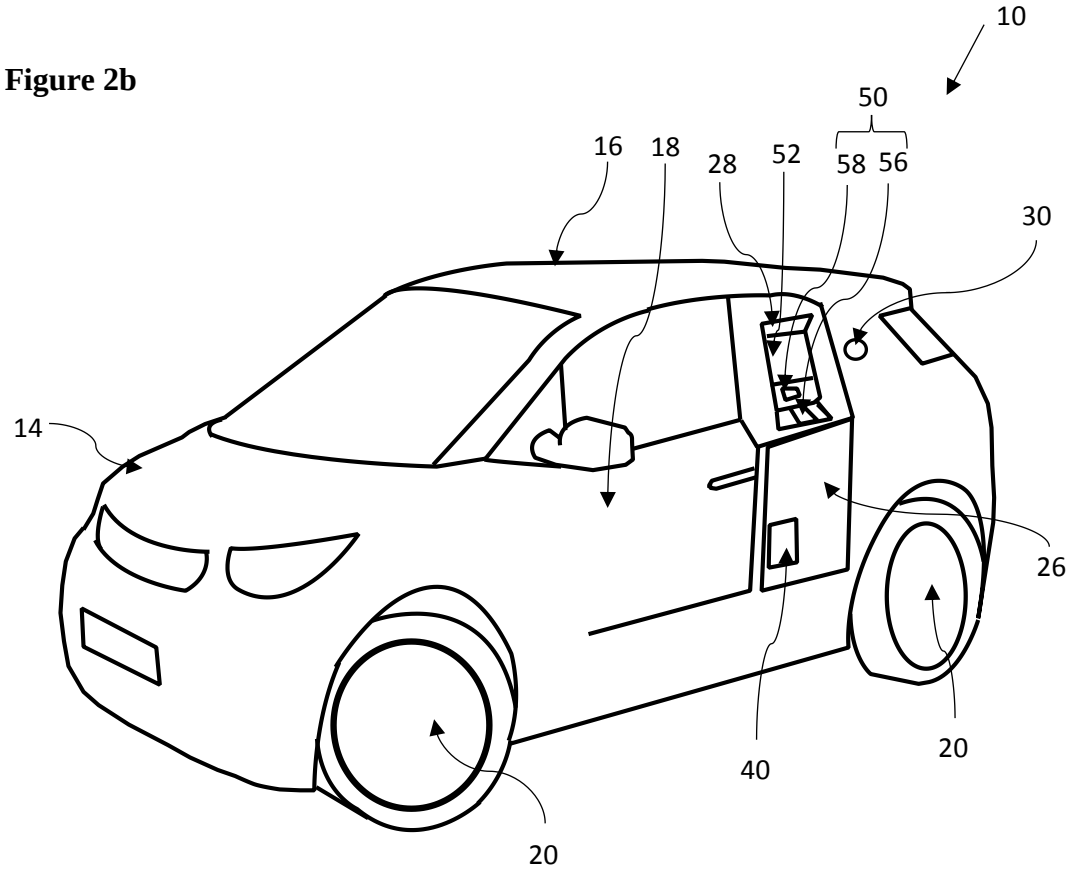


Figure 3

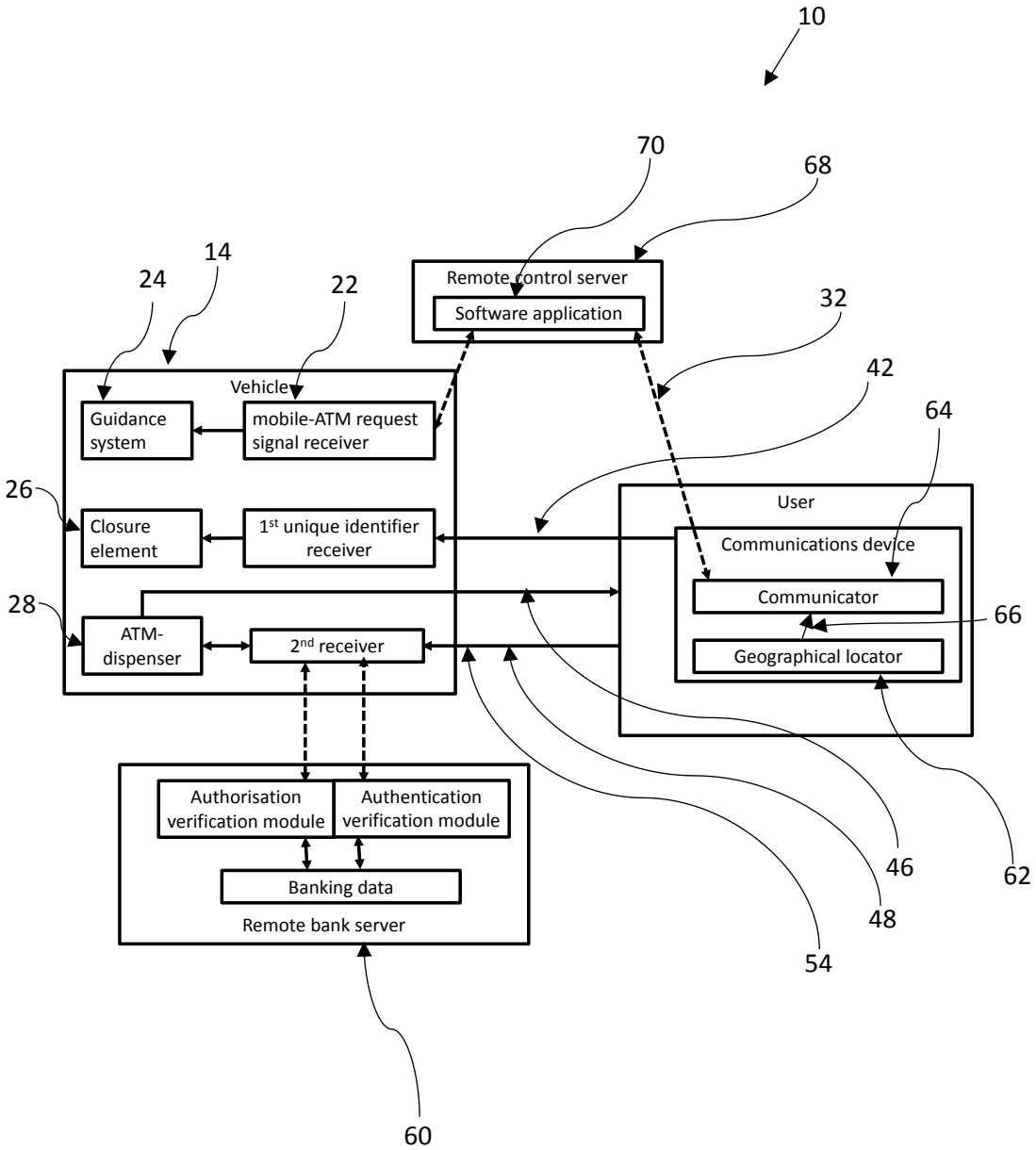

10
70
68
14
24
22
Remote control server
Software application
32
42
64
Vehicle
Guidance system
mobile-ATM request signal receiver
26
Closure element
1st unique identifier receiver
User
Communications device
Communicator
66
28
ATM-dispenser
2nd receiver
Geographical locator
Authorisation verification module
Authentication verification module
Banking data
Remote bank server
46
62
48
54
60

Figure 4a

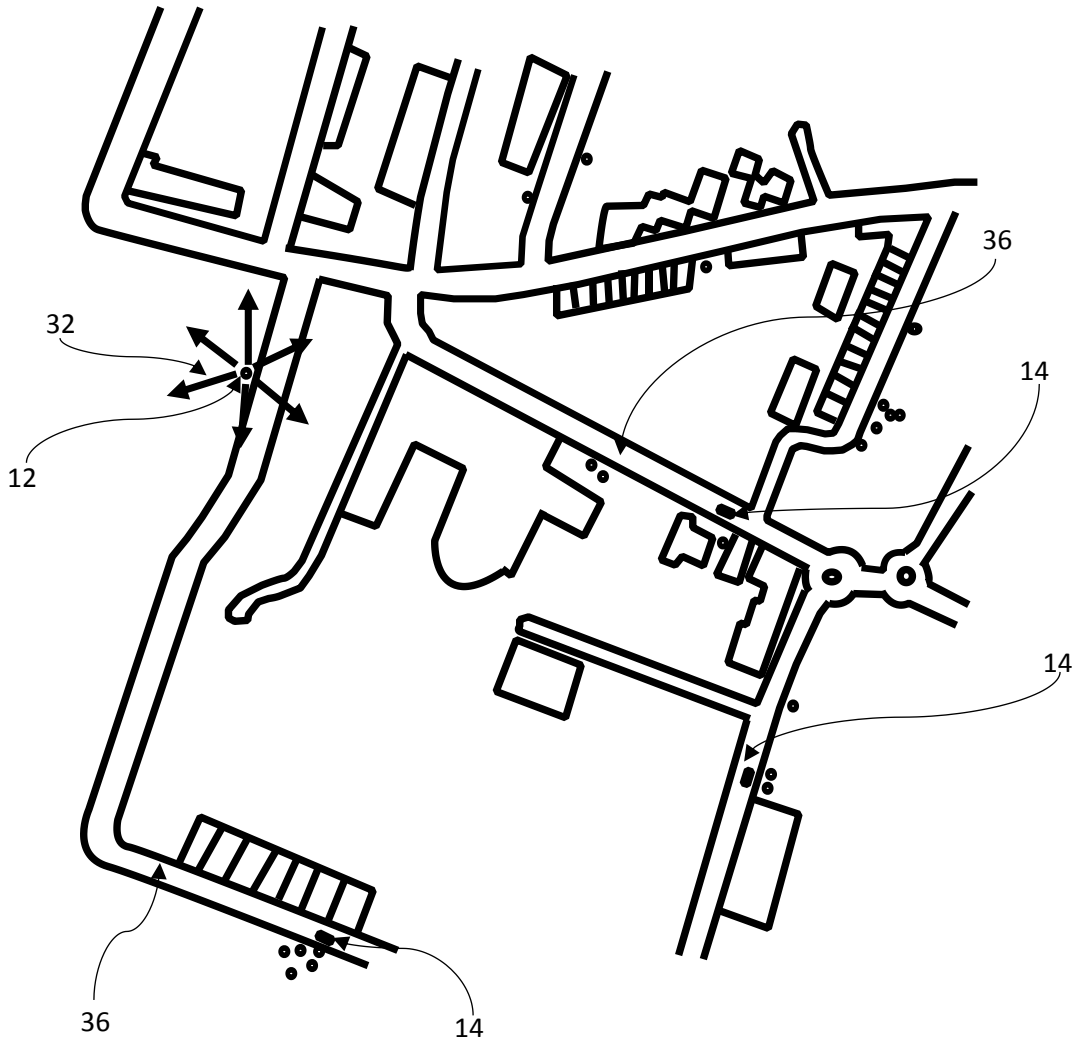


Figure 4b

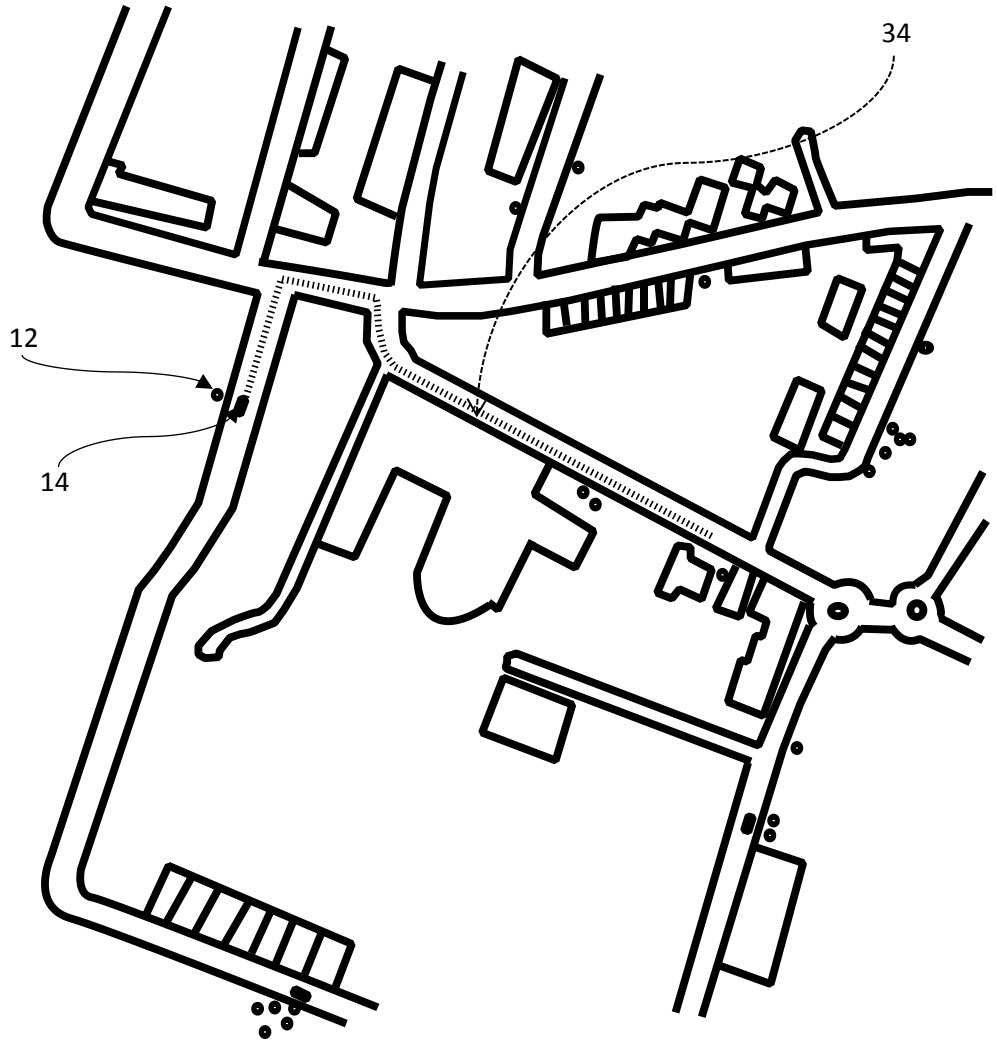
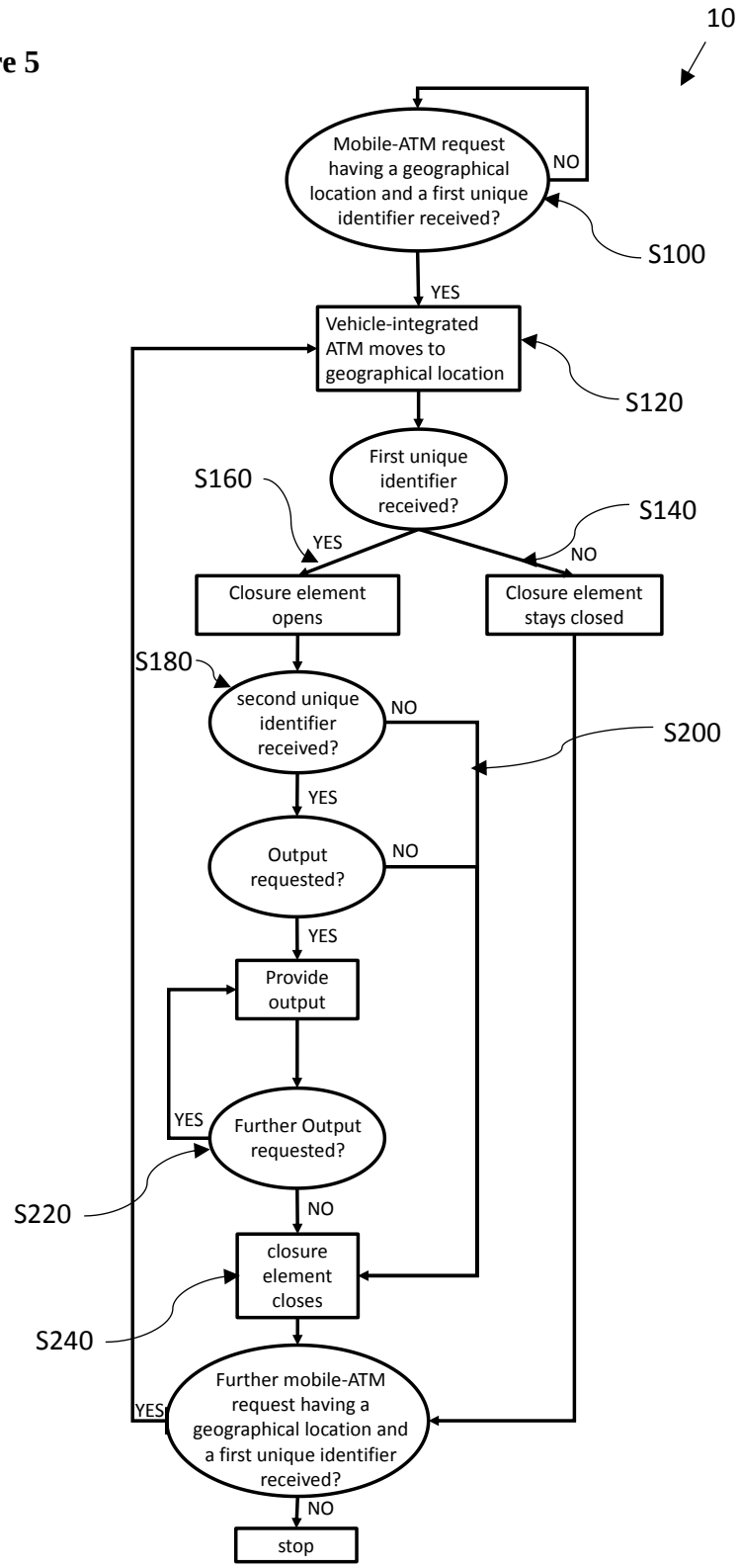


Figure 5


10
Mobile-ATM request having a geographical location and a first unique identifier received?
NO
S100
YES
Vehicle-integrated ATM moves to geographical location
S120
First unique identifier received?
S160
S140
YES
NO
Closure element opens
Closure element stays closed
S180
second unique identifier received?
NO
S200
YES
Output requested?
NO
YES
Provide output
YES
Further Output requested?
S220
NO
closure element closes
S240
Further mobile-ATM request having a geographical location and a first unique identifier received?
YES
NO
stop