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(54) **Title:** MANAGEMENT SYSTEM AND METHOD FOR THE SHARED USE OF VEHICLES

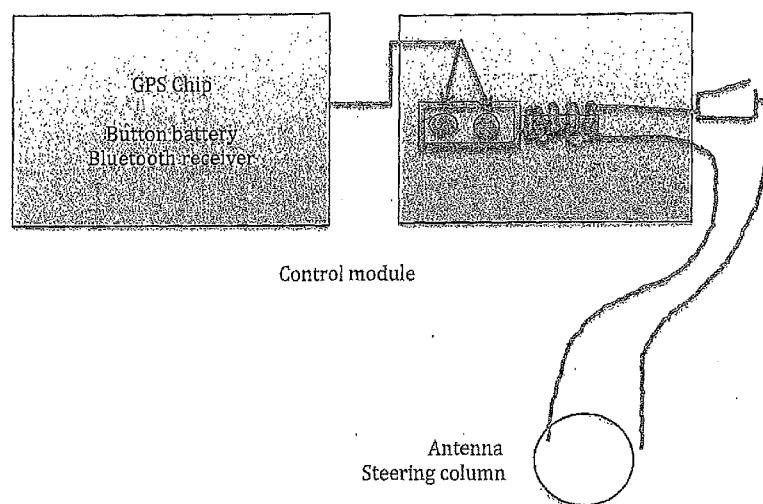


FIG. 1

(57) **Abstract:** The invention relates to a management system and method for the shared use of vehicles by key virtualisation on a wireless electronic device, comprising a central data processing file, an apparatus for wireless communication (preferably a smart-phone) with the central data processing file and a control module present in each vehicle managed by the system, whereby through a data exchange between the apparatus for wireless communication and the control module of the vehicle, the vehicle is made ready for use characterised in that the control module comprises means for wireless communication that is operatively connected to the steering electronics of a transponder key of the vehicle.

WO 2014/005200 A1

**Title : Management system and method for the shared use of vehicles.**

**Field of the invention**

5 The present invention relates to a management system and a method for the shared use of vehicles by key virtualization on a wireless electronic apparatus.

**Background of the invention**

10 For various reasons there is a growing need for the sharing of vehicles by various users, or the sharing of vehicles to more than one user.

A known problem in this context is the administration that is required for keeping the data relating to the availability of the vehicles, the desired periods of use of the users, the settlement of the fixed and variable costs, as well as the  
15 verification of the status of the vehicles, for example in connection with damages resulting from possible accidents.

In the past various solutions have been developed to meet the above goal, but up to now none of these solutions is considered as being satisfactory.

20 One of these solutions is for example the concept as published in the international PCT-patent application of the company Getaround, WO 2011/053357 A1, published on May 5th, 2011.

According to the information available on the website of Getaround, this system  
25 operates as follows :

The system as installed by Getaround in the vehicle enables the doors to be opened, by using the smartphone of the user. To this end the smartphone communicates through a short-distance wireless communication, e.g. Bluetooth, a code to a vehicle access system as it is installed in the vehicle by Getaround.

30

The code that is required to this end, is received by the smartphone from a

central data-server, through a long-distance wireless communication (e.g. SMS, mobile or fixed Internet, ...)

Once the user has gained access to the vehicle, he uses the transponder key, available in the car, to start and use the car.

5

One of the drawbacks of this method is that in case of burglary in the car, the car can be started and stolen by means of the transponder key which is readily available in the car.

10 A similar system has been described in the French patent Nr. 9915248,

Publication number 2 801 994, in the name of Renault Technocentre.

This document describes how access to a vehicle is granted to a user by means of its mobile, that communicates through a long-distance communication with a central database, and through a short-distance communication with the board

15 management system of the vehicle. This access is granted to the user through the input of commands on the mobile of the user.

Once the user has gained access to the vehicle in the above manner, he needs to take the key present in the vehicle to start the vehicle. As an alternative, he can also start the vehicle by means of a push button (Page. 8, lines 6-9, as well as

20 page. 11, lines 21-24).

It is self-evident that also this system has the drawback that in case of burglary into the car, the car can be started by means of the available key.

A system for the sharing of vehicles has been introduced in Belgium under the  
25 brand name Cambio. Contrary to the more traditional cases of car-renting whereby a command voucher needs to be completed each time a user wishes to rent a car, and the user is bound to the opening-hours of the rental company, only once a command voucher needs to be completed in the Cambio system.

The user receives a chip card, granting him access 24/24 hours and 7/7 days to  
30 the vehicle park of Cambio.

The reservation of a car then can be effected by telephone or through the internet, and the user has the choice among the various types of cars of the rental company.

At the time of the reservation, the user receives a secret pin code, and in  
5 combination with the chip card he can then get the reserved car at the agreed place. Access to the car is gained on the basis of the data of the chip card and the user find the key to start the car, attached to the board computer in a cupboard of the car (use of the pin code).

10 This system is safe (alarm system) but it is difficult to install, it is expensive, there is need for network access, it interferes with the electronic system of the car, immobilisation of the car, ...

On top hereof the Cambio method has the disadvantage that the user needs to keep an additional chip card, besides the multiple credit and other cards that he  
15 already keeps in his wallet.

The aim of the present invention is to remedy the above and other problems.

#### **Summary of the invention :**

20 The present inventors have developed a management system and a corresponding method for the shared use of vehicles, comprising :

- a. a central data processing file;
- b. an apparatus for wireless communication with the central data processing file and a control module present in each vehicle managed by  
25 the system, whereby through an exchange of data between the apparatus for wireless communication and the control module
  - ° access to the vehicle is granted;
  - ° the vehicle is made ready for use for the user;

characterised in that :

30 the control module comprises a means for mobile communication that is

operatively connected with the steering electronics of a transponder key of the vehicle.

**Description of the invention :**

**5 Short description of the drawings :**

With the aim to illustrate more clearly the features of the invention, hereinafter, by way of example without any limiting effect, figure 1 shows in a schematic manner a preferred embodiment of the component parts of the control module  
10 of the vehicle, as these can be used in the management system according to the invention.

In this figure 1 the left rectangle shows a first part of the control module : this part contains the means for wireless communication, preferably a Bluetooth receiver, the optional global positioning chip, and an optional battery, for  
15 example a button-battery.

The latter ensures that the control module can operate independently and does not need to be fed by the electrical battery of the vehicle.

In case no battery is present in the control module, the latter is electrically fed by the battery of the vehicle.

20 The rectangle positioned at the right side shows how the steering electronics of the transponder key are incorporated in the control module : the two push buttons of the remote control (opening and closing function) are shown, as well as the transponder part of the key. These keep their usual functions, but according to the concept of the invention are steered by a wired connection  
25 from the Bluetooth receiver of the control module. This wired connection in practice can run from the module of the wireless communication of the control module to the Printed Circuit Board of the transponder key.

At the bottom of the figure the magnetic induction coil is shown, that is situated, in case a transponder key is used, around the steering column of the vehicle.

30 This coil is connected through a wired connection with a coil wound around the transponder end of the transponder key, as shown on the figure.

This circuit is steered through a relay, shown at the right side of the rectangle shown at the right. The latter is also steered through a wired connection on the basis of the signals received from the Bluetooth receiver.

In the embodiment of Figure 1 the optional global positioning chip, the optional (button) battery and the Bluetooth receiver are shown in one module, the steering electronics of the transponder key are shown in another module. The configuration makes it possible to position the module comprising the Bluetooth receiver optimally in view of the quality of the short-distance radio connection.

10 This however is not necessary, and both modules can be integrated in one and the same module.

#### **Preferred embodiments of the invention :**

15 Preferred embodiments of the management system according to the invention are set forth in the depending claims 2 to 14 attached hereto.

Preferred embodiments of the method according to the invention comprise the corresponding features of the dependent claims of the management system of the invention as set forth in the dependent claims 2 to 14.

20

#### **Detailed description of the invention :**

The present invention uses the functionality of a transponder key.

Although a transponder key is a known device for the person skilled in the art, 25 the operating principle of such a transponder key is described in short hereinafter:

As from 1992 onwards, all new vehicles on the EU market comprise a transponder key. This type of key comprises a chip or steering electronics in its 30 head that communicates with a computer comprised in the motor management system of the car.

Once access has been granted to the vehicle, the motor of the vehicle is started by using the transponder key in a conventional manner : the beard of the key is inserted into the contact lock, is turned to the right or the left thereby unblocking the steering column, and so rendering the vehicle ready for use.

5 When the key is further turned into the contact lock, the motor starts running. The unlocking of the steering column and starting of the motor only take place after a code has been exchanged between the transponder key and the motor management of the vehicle. This takes place by means of a magnetic induction coil, comprised in the steering column of the vehicle, around the contact lock.

10

Such a transponder key thus has in principle two functions : grant access to the vehicle to the user and to this end the chip function is commonly used; make the vehicle ready for use, or start the motor, and to this end the beard function of the key is commonly used. In parallel to the turning of the key in the contact  
15 lock by means of the beard, a signal is transmitted from the chip of the transponder key to the starting motor during the start, such that the motor effectively starts. In case this signal is not transmitted, the doors of the vehicle can be opened and the contact can be turned, but the motor will not start because the starter does not receive a signal from the transponder key.

20

According to the concept of the present invention, an apparatus for wireless communication, to be used by the user of the vehicle, is used as remote control of the transponder key, that is fixed or cemented in a control module of the vehicle. This control module is present in the vehicle, and according to a  
25 preferred embodiment is firmly connected thereto.

The transponder key as comprised in the control module does no longer physically contain a key element (beard), only the 'intelligent' part or the steering electronics of the transponder key are used : the intelligent part is to be  
30 understood as that part of the transponder key wherein all functions are

contained, apart from the physical unblocking of the steering column (this is the only function of the physical end of a transponder car key).

In case of a Keyless go car, the driver only needs to push the start/stop to start  
5 the car (the term start here means to activate, and this does not necessarily imply the actual start (turning) of the motor).

The big advantage of the system and method as developed by the inventors is that by means of this system, respectively this method, the access and the easy  
10 of use of at least one car managed by the management system according to the invention can be granted in a simple manner to various persons.

On top hereof, the control module comprised in the management system according to the invention can be mounted in the managed vehicle in a non-intrusive manner.

15 This means that no or a minimal intervention in the vehicle itself needs to take place.

The key is incorporated in the control module and is steered by the signals received by the Bluetooth receiver in the control module of the apparatus for wireless communication of the user (for example his smartphone), and that are  
20 transmitted through a connection to the key.

In such a case the transponder key comprises a beard. This usually is a specially cut piece of metal, comprising bulges and holes that fit into the contact lock of the vehicle. This part of the key is used to unlock the mechanical locking of the steering column, when the key is turned right or left in the contact lock.

25 According to the invention the beard of the transponder key of the vehicle is mechanically separated from the steering electronics.

So as to enable the user still to use the beard in an easy manner, the beard is firmly and fixedly connected to an element made up of for example hard plastic.

In this way the user can position the beard of the original transponder key in  
30 the contact lock of the vehicle, just like before, to unlock the mechanical security of the steering column.

Apart from the beard as described hereinbefore, the transponder key also comprises steering electronics for a car. These steering electronics make up the so-called 'intelligent' part of the transponder key : by intelligent part should be understood that part of the transponder key comprising all functions, apart  
5 from the physical unlocking of the steering column + enabling the contact/starting (this is indeed the only function of the physical end part of the beard of a transponder-car key).

These steering electronics usually comprise the following three elements.

10

Two elements comprise the central remote control to the car. These are commonly controlled by means of two pushbuttons on the transponder key ; an 'open' pushbutton to open the central locking system of the car; a 'close' pushbutton to close the central locking system of the car. These functionalities  
15 are incorporated in an unaltered manner in the concept according to the invention : only the manner of actuating of the 'open' and 'close' pushbuttons on the key are changed in the manner as described hereinafter.

A third element is the actual transponder that is incorporated at the front part of the key, and that at the time of insertion of the beard in the contact lock of the  
20 car, exchanges an authentication with the motor management system of the car.

In the concept according to the invention the steering electronics of the transponder key as described above is retained in unaltered manner as to its functionality.

25 To this end it is incorporated in a separate control module that is placed in the vehicle.

This control module then also comprises means for wireless communication with an apparatus for wireless communication, at the disposal of the user of the vehicle.

30 The functionality of the steering electronics of the transponder key is then retained in this control module in its entirety; the various functions however

now are not actuated by manually pressing the 'open' and 'close' buttons. These functions are actuated by means of signals transmitted from a smartphone of the user to the module that on its turn transmits these to that part of the car key that is incorporated in the module.

5 This apparatus for wireless communication of the user can e.g. be chosen from one of the apparatuses of the list mentioned hereinafter :

a laptop, a mobile phone or smartphone, a digital personal assistant (PDA), a notebook (optionally with touch screen), a netbook, a touchscreen (Tablet), ...

The term smartphone should be understood as an apparatus for mobile  
10 telephone communication with extended computing capabilities. A smartphone can also be considered as a hand-held computer or personal digital assistant (pdq) that at the same time is also a telephone.

For simplicity of the description, the text as set forth hereinafter shall always refer to a smartphone as an example of such an apparatus for wireless  
15 communication of the user. It goes without saying that any of the apparatuses for wireless communication as set forth above can be used instead of a smartphone without passing beyond the context of the present invention.

The smartphone communicates with the control module in the vehicle through  
20 a wireless communication network for data transmission.

This wireless communication can be based on various techniques. Often use is made of short distance radio connection such as for example Bluetooth. In principle use can also be made of alternative short-distance connections such as infrared communication techniques, or NFC (Near Field Communication).

25 Bluetooth is a technique for wireless data transmission over short distances up to approx. 10 meter.

Bluetooth is a registered trade mark of the Bluetooth Special Interest Group (SIG) Inc.

For various reasons in the present invention use is made of Bluetooth to realise  
30 the wireless communication between the apparatus for wireless communication and the communication module.

Bluetooth can (for example compared to infrared connections) bridge larger distances, the connection with Bluetooth is quite easy as with most of the Bluetooth apparatuses a list can be requested as to what other Bluetooth enabled apparatuses are around, and hereupon the connection is easily made.

5 Further Bluetooth is not linked to any specific brand, this having the advantage that nearly all mobile phones are able to communicate through Bluetooth with the control module according to the invention that is incorporated in the vehicle.

10 For the sake of simplicity in the description that follows, reference shall always be made to Bluetooth as an example of such a wireless communication technique. However it goes without saying that any of the above mentioned wireless communication techniques can be used instead of Bluetooth without passing beyond the context of the present invention.

15

In a first phase the apparatus for wireless communication of the user, preferably a smartphone, transmits preferably over Bluetooth to the control module present in the vehicle, data that comprise an access- or identification code, thereby opening the doors of the car for the driver/user.

20 In practical terms to this end, the control module comprises a built-in Bluetooth receiver that receives the data transmission from the smartphone of the user and that transmits same to the steering electronics of the transponder key that is incorporated in the control module.

25 Once the driver has taken its seat in the vehicle, and in case the vehicle is equipped with a transponder key comprising a beard, the vehicle is ready for use as soon as the beard is inserted into the contact lock of the vehicle. The beard of the transponder key – as set forth supra – may comprise a handy element made up of hard plastic to simplify the insertion of the beard in the

30 contact lock.

The beard with the handy plastic holding element preferably is put in the car at

the disposal of the user, and is preferably firmly linked by a steel wire to the vehicle by means of a screw connection.

As set forth supra the steering electronics, comprising the 'intelligent' part of 5 the transponder key car, are incorporated in the control module of the vehicle. The wired connections between the control module and the 'open' and 'close' buttons, as well as the transponder itself, run over the printed circuit board of the transponder key.

In more concrete terms, this means that the smartphone preferably over 10 Bluetooth transmits a signal to the control module of the car, thereby sending an electrical pulse to the chip of the transponder car key incorporated in the control module.

Because of this the car is ready for use for the user.

A characteristic feature thus resides in the fact that all functions of the 15 transponder key according to the concept of the invention are kept, but are actuated through the built-in control module wherein the steering electronics of the car key are incorporated, by a separated remote control, in practical terms the smartphone of the user.

20 The above method implies that every user that has a smartphone at its disposal, by the above method gets access to the ease of use of the car, on condition that the necessary codes are loaded into its smartphone. The loading of these data takes place on the basis of a communication of the smartphone of the user with the central data processing files of the managing system of the service provider. 25 In practice these central data processing files of the service provider comprise one or more servers, or in a more simplified service, one or more personal computers.

The data relating to the users, as well as the data relating to the car park of the service provider, comprising e.g. the location of the cars, distances run, 30 maintenance records, possible damage information, availability of the cars, etc. are stored herein.

Long-distance communication means are preferably used for the communication or the data exchange between the wireless communication device of the user, preferably a smartphone, and the central data processing file of the management system or the service provider. This long-distance communication preferably is realised by using the GSM network (e.g. in case of data exchange by means of SMS), the mobile or fixed internet.

This communication between the smartphone of the user and the central data processing files of the service provider in practice runs as follows.

10 The user downloads the mobile application as this is provided by the service provider through the mobile or fixed internet, as a usual iOS or Android application.

As soon as this application has been downloaded on the smartphone of the user, the user can consult the virtual key by means of this application.

15 This virtual key is depending on a certain kind of car and a reservation time.

It comprises amongst other elements the following encrypted information :

1. the address of the means for mobile communication, comprised in the control module of the vehicle;
2. an authentication code;
- 20 3. a personal identification code.

On the basis of these data the user can at the agreed location and timing go to the car and use same (open/close/start).

25 An important part of the system according to the invention is the control module present in the car, and preferably incorporated in same.

In the concept of the system according to the invention, the steering electronics of the transponder key are cemented in a resin together with the means for wireless communication, and the global positioning system.

30 To this end it suffices that the elements as described above are placed in a container or housing, whereupon this housing is filled with a thermo hardable

resin. Preferably a resin is used that can be hardened by low temperatures, thereby preventing damage to the electronic components.

After hardening of the entire set, the complete electronics of the control module are safeguarded and ready for use in the application at hand.

5 In this housing the Bluetooth receiver is also incorporated to receive the signals of the smartphone of the user, and transmit same to the steering electronics of the transponder key of the car.

A substantive advantage of the method according to the invention resides in the  
10 enhanced security against burglary or possible vandalism of the vehicle that is managed by the service provider.

Contrary to solutions for the renting of cars or sharing of cars as described in the prior art, the application of the concept of the present invention in use does prevent theft of the vehicles in case of burglary.

15 As the burglar does not have the necessary identification or authentication codes of the car, he cannot use such car.

The advantage of the concept of the invention for the user resides in the fact that he does not need to have an additional chip card to safely make use of this  
20 service.

It suffices to use the smartphone (or any equivalent wireless communication device, as set forth supra). By means of the access/identification or authentication codes that he downloaded from the central data processing files of the service provider, he gets access to the car as selected, and this car simply  
25 is ready to use and start by exchanging the appropriate codes between his smartphone and the control module present, and preferably fixedly incorporated in the vehicle.

An important characteristic of the present invention, as set forth supra, is the  
30 operative connection between the control module and the steering electronics of a transponder access key of the car. The original transponder key of the car

thus retains in a substantive manner its specific functions in the system and the method according to the present invention.

This latter feature is not disclosed, nor suggested in the WO 2011/053357 application cited above (hereinafter referred to as the '357 application), and hence differentiates the present application from this know state of the art. The unexpected advantage of the management system according to the present invention is that by the incorporation of the transponder key of the car in such a control module, this transponder key actually retains its usual functions and  
10 operation. The only difference is that it has been incorporated in a control module specially designed to this end in the car, and by doing so can be actuated by an external device for wireless communication.

The functions of the transponder key, namely the opening and closing of the doors of the vehicle to grant access to the user to the vehicle, remain unchanged.  
15 Only, these are not actuated by directly pressing the opening- and closing- buttons on the transponder key, but because the user presses or touches (in case of a touch screen) the corresponding command's on a device for wireless communication.

This device for wireless communication then transmits through wireless  
20 communication signals to the control module of the vehicle, that on its turn transmits these by means of the built-in steering electronics of the transponder key to the car management system.

In particular reference is made to Figure 2, element 206 and the corresponding  
25 paragraphs 72 and 79 of the '357 application.

Paragraph 72 starts by stating that 'the various functionalities of the vehicle access control system are built in the vehicle directly by the manufacturer when the vehicle is manufactured'.

This is quite different from the management system of the present invention,  
30 whereby the control module is incorporated into the vehicle afterwards. This disclosure even hints the person skilled in the art in a completely different

direction, and is so incompatible with the teaching of the present application.

The second alternative disclosed in paragraph 72 though is different :

'In various embodiments, the various functionality of the vehicle access control system is integrated into a separate vehicle access kit that is coupled to the  
5 vehicle via wired or wireless communication link *post manufacturing*.'

This paragraph is not in contradiction with the present invention, but this generally phrased sentence does not provide any information as to how such module 'post-manufacturing' should be incorporated in the vehicle.

The next two sentences in paragraph 72 describe a 'portable vehicle key or  
10 remote that communicates with the vehicle via short-range wireless communication link' or whereby 'the vehicle access kit is physically coupled to the vehicle control system and communicates with the vehicle via a physical port such as a vehicle bus port'. It is unclear whether these paragraphs relate to a system that is provided at the time of the original manufacturing of the  
15 vehicle, or whether this is incorporated post-manufacturing.

None of the above paragraphs describes, suggests, or hints the specific embodiment of implementation of the management system according to the present invention, whereby the function and operation of the usual transponder key of the vehicle is retained by incorporating same in a control module  
20 connected to the vehicle, and actuating its functionality through a device for wireless communication that the user has at its disposal. The transponder key that is actuated in this way by the user (via its smartphone) will, by the fact of its incorporation in the control module, retain its usual operational functions, as the granting of access to the vehicle and the making ready of use of the vehicle.  
25 None of these functions of a transponder key, actuated by a device for wireless communication is described or suggested in paragraphs 72 or elsewhere in the text of D1.

Also nowhere in paragraph 79 mention is made of the incorporation of a  
30 transponder key of a car, post-manufacturing, in a control-module of a vehicle,

so as to actuate its usual functions by means of a device for wireless communication by a user.

The last sentence of Paragraph 79 sets forth that 'a keyless entry remote' has the possibility to actuate various car functions by transmitting wireless signals to the control system of the car. This however is a totally different method : in this case the various commands for the various car functions (such as opening, closing of the vehicle, starting, operations of the rear mirrors,...) are directly transmitted from a keyless entry remote to the control system of the car, and not over a control module wherein the transponder key of the vehicle is incorporate as 'intermediate element'.

The technology as described hereinabove can be used for various applications, and so is not limited to the making accessible of vehicles for an authorised user, or multiple authorised users.

15 The system can be used for example to grant access to a user to a housing, a boat, or similar objects.

To that end it suffices to adequately transfer the above described functionality to the desired application. The term 'vehicle' as used in the claims and the description of the present invention, should consequently be understood as comprising all kinds of vehicles as cars for personal or professional use, trucks, trailers, busses, boats, aeroplanes, or the like.

It can likewise be used to grant access to various users to for example housings, as well for permanent as temporary use, like vacation homes.

25 A special application resides in the locking or unlocking of a parking place by means of automatically controlled parking locks.

Such parking locks are available in a mechanical version, whereby the lock is operated by means of a traditional mechanical key.

It is also available in an electrically driven version, whereby the electric motor is for example actuated by means of a transponder key.

The intelligent part of the transponder key is than incorporated in the electrical

steering part itself, and is fixedly connected to the parking lock. The actuation hereof is performed in a manner similar to the method described supra, namely by transmitting signals sent by e.g. a Bluetooth connection of the user. To that end the authorised user has previously downloaded the required codes through 5 a communication with the server of the service provider of the parking locks.

In such a manner the parking lock can be shared by various persons on the basis of mutual agreements. It suffices to that end that in the smartphones of the authorised users of the parking space the required authorisation codes are stored, so as to actuate the electrical operation of the parking lock.

**Claims :**

1. Management system for the shared use of vehicles comprising :
  - a. central data processing file;
  - 5 b. an apparatus for wireless communication with the central data processing file and a control module present in the vehicles managed by the system, whereby through a data exchange between the apparatus for wireless communication and the control module of the vehicle
    - ° access to the vehicle is obtained;
    - 10 ° the vehicle is made ready for use for the user;characterised in that :

the control module comprises means for wireless communication that is operatively connected to the steering electronics of a transponder key of the vehicle.
- 15 2. System according to claim 1, wherein the wireless communication between the central data processing file and the apparatus for wireless communication is performed by means of a long-distance communication, preferably SMS, mobile or fixed internet.
- 20 3. System according to claim 1 or 2, wherein the wireless communication between the control module and the apparatus for wireless communication is performed by means of a short-distance radio communication, preferably Bluetooth.
- 25 4. System according to claim 3, wherein, in case the short distance wireless radio communication between the apparatus for wireless communication and the control module is performed over Bluetooth, the means for wireless communication of the control module comprises a  
30 Bluetooth receiver.

5. System according to any of the preceding claims, wherein the apparatus for wireless communication is chosen amongst the following list : a laptop, a notebook (optionally with touchscreen), a smartphone, a mobile phone, a personal digital assistant.
- 5 6. System according to any of the preceding claims, wherein the operational connection between the means for wireless communication of the control module and the steering electronics of the transponder access key of the vehicle comprises one or more wired connections for performing the following functions:
- 10 a. actuating the opening press button of the central access system of the vehicle;
- b. Actuating the closing press button of the central access system of the vehicle.
- 15 7. System according to any of the preceding claims, wherein the wireless communication between the central data processing file and the apparatus for wireless communication comprises one or more of the following elements :
- 20 ° the address of the means for wireless communication, comprised in the control module of the vehicle;
- ° an authentication code;
- ° a personal identification code.
8. System according to claim 7, wherein access to the vehicle is obtained
- 25 when the apparatus for wireless communication has transmitted the in claim 7 mentioned elements to the control module of the vehicle.
9. System according to claim 8, wherein in case the vehicle is equipped with a keyless start function, the vehicle is made ready for use for the user as
- 30 soon as the apparatus for wireless communication has transmitted a

start-command to the control module of the vehicle.

10. System according to claim 8, wherein in case the vehicle is equipped with a transponder key with a beard, the vehicle is made ready for use for the user as soon as the beard is inserted into the contact lock of the vehicle.
11. System according to claim 10, wherein the communication between the magnetic induction coil in the steering column of the vehicle and the steering electronics of the transponder key in the control module is performed by means of a wired connection between the magnetic induction coil and an induction coil, installed in the control module around the steering electronics of the transponder key.
12. System according to any of the preceding claims, wherein the control module of the vehicle comprises a global positioning system that communicates the position of the vehicle to the central data processing file through the apparatus for wireless communication.
13. System according to any of the preceding claims, wherein the component parts of the control module are cemented in a housing, preferably by means of a thermo hardenable resin, by further preference by means of a resin that is thermo hardenable at room temperature.
14. System according to any of the preceding claims, wherein the control module gets its electrical charge by means of a button battery or by means of a wired connection with the motor management system of the car.
15. Method for the management of the use of vehicles, wherein the management system according to any of the preceding claims is used.

Figures

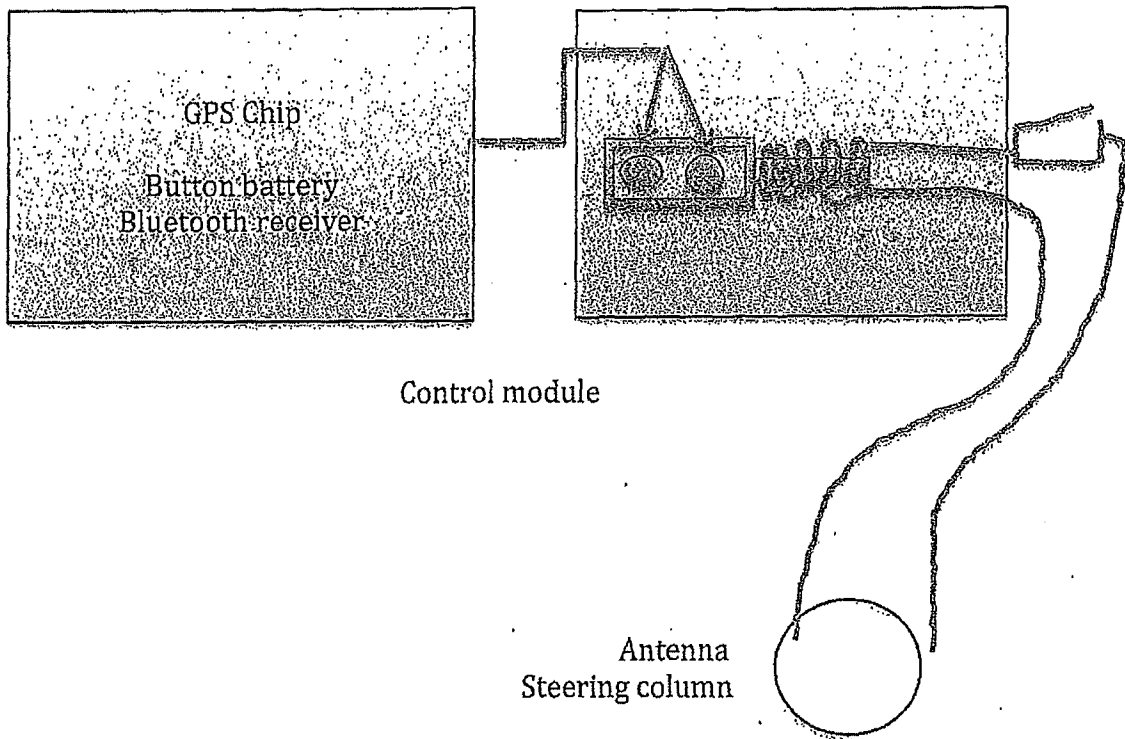


FIG. 1

**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/BE2013/000034

A. CLASSIFICATION OF SUBJECT MATTER  
INV. G07B15/00 G07C9/00 B60R25/20  
ADD.  
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
Minimum documentation searched (classification system followed by classification symbols)  
G07B G06Q G07C B60R

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2011/053357 A1 (GETTAROUND INC [US]) 5 May 2011 (2011-05-05) cited in the application paragraph [0002] - paragraph [0003] paragraph [0016] paragraph [0056] - paragraph [0089] paragraph [0112] - paragraph [0120] figures 1-3,5,6	1-15
X	FR 2 801 994 A1 (RENAULT [FR]) 8 June 2001 (2001-06-08) cited in the application page 1, line 4 - line 8 page 2, line 9 - line 27 page 3, line 20 - page 8, line 8 page 13, line 1 - line 7 figure 1	1-6,12, 15

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search <b>27 September 2013</b>	Date of mailing of the international search report <b>09/10/2013</b>
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer <b>Van der Haegen, D</b>
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/BE2013/000034

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	US 2005/009511 A1 (BOSTROM KEVIN L [US] ET AL) 13 January 2005 (2005-01-13) paragraph [0012] - paragraph [0013] paragraph [0015] paragraph [0017] paragraph [0019] -----	7

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Information on patent family members

International application No

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