A new electronic fence system

1. Technical field

The utility model relates to the technical field of electronic fence, in particular to a new electronic fence system.

2. Background technology

The Internet of things (IOT) is an extension of the Internet, which enables objects to be networked through sensors, communication modules and intelligent chips. Its essence is to connect various embedded single-chip, combine wireless connection with various intelligent sensors, and use low-power microcontroller to realize networking with lower equipment cost and simpler mode.

Bike sharing is an intelligent travel mode formed by combining the concept and technology of the Internet of things. This system includes three parts: mobile phone end, bicycle end and cloud end. The main work flow is as follows:

1) Users find nearby bicycles through mobile phone app, and recharge, unlock and charge calculation. This is the user port in the Internet of things system;

2) The single vehicle terminal can collect the travel data and transmit the positioning information and the status of the electronic lock to the cloud through the SIM card;

3) The cloud carries out the control of the whole system, collects information and sends commands to control the single vehicle terminal.

However, the existing bicycle storage has great limitations. Although it can be parked at will, it has a serious impact on the city appearance. Generally, the non-standard behavior has a serious image of the city appearance. Therefore, the shared bicycle storage has the following problems:

1) Park at will; Compared with the parking of parking piles, the display of random parking is more convenient. However, some nonstandard parking behaviors and inappropriate parking places make the parking of bicycles may seriously affect the traffic conditions of roads, endanger public traffic safety and cause urban congestion. At the same time, random parking seriously endangers the city appearance;

2) There is no restricted area, which is generally limited by physical fences, which not only wastes a lot of human and material resources, but also has a poor effect on restricting people's behavior.

3. Utility Model Content (or Invention Content)

（1） Technical problems solved

In view of the shortcomings of the existing technology, the utility model provides a new type of electronic fence system, which solves the problem that the existing bicycles are parked and placed indiscriminately and affect the city appearance.

（2） Technical scheme

In order to achieve the above objectives, the utility model provides the following technical solutions: a new electronic fence system includes a mobile phone, a single vehicle unit and a base station unit. The single vehicle unit includes a CPU, the CPU is electrically connected with a communication module through a wire, the communication module is electrically connected with a Bluetooth module through a wire, the CPU is electrically connected with a power module through a wire, and the CPU is electrically connected with a positioning / BeiDou through a wire, The CPU is electrically connected with the identification module through a wire, and the CPU is electrically connected with the wireless signal transmission through a wire.

The mobile phone is electrically connected with the Bluetooth module through a wireless signal, and the mobile phone is directly connected with the identification module inside the single vehicle unit through the identification two-dimensional code.

The single vehicle unit is electrically connected with the base station unit through a wireless signal.

The base station unit includes a processor, the processor is electrically connected to the positioning through a wire, the processor is electrically connected to the wireless signal receiving through a wire, the processor is electrically connected to the storage module and the power supply through a wire, and the processor is electrically connected to the wired / wireless communication through a wire.

The single vehicle unit is electrically connected to the background of the single vehicle through wireless signals, the base station unit is electrically connected to the background of the base station through wired / wireless communication, the background of the base station is electrically connected to the manufacturer of the single vehicle and the background of the single vehicle respectively, and the background of the single vehicle is electrically connected to the handset through wireless signals.

To further optimize the technical scheme, the mobile phone is wirelessly connected to the Bluetooth module in the bicycle unit through the Bluetooth of the mobile phone, and the mobile phone is wirelessly connected to the identification module in the bicycle unit through the two-dimensional code authorized by the mobile phone app.

To further optimize the technical scheme, the power supply can be divided into photovoltaic power supply and wiring mains power supply.

Further optimizing the technical scheme, the wireless signal transmission in the single vehicle unit is radio connected with the wireless signal reception in the base station unit.

Further optimizing the technical solution, the wired / wireless communication is one or more of a wired network / Bluetooth communication module, a WiFi communication module, a ZigBee communication module, a 3G communication module, a 4G communication module, and / or a 2.4G wireless communication module.

（3） Beneficial effect

Compared with the prior art, the utility model provides a new electronic fence system, which has the following beneficial effects:

1) The new electronic fence system diffuses through the wireless signal reception in the base station unit to form an electronic fence in a certain area, so that when a single vehicle is parked, it can only be parked in the specified base station unit, thus directly avoiding the phenomenon of random parking of single vehicles. At the same time, the added positioning can be used for real-time positioning and reasonably arranging the urban layout.

2) The new electronic fence system saves a lot of manpower and material resources by making the fence into the electronic intelligence of the base station unit. At the same time, the power supply of the base station unit can be provided as photovoltaic power supply or municipal power supply. In this way, the layout planning and reasonable layout can be convenient, and the city appearance and beauty of urban construction can be increased.

3) The new electronic fence system has low structure cost, reasonable design, adjustable installation position and strong practicability.

4. Attached drawing description

Fig. 1 is the System diagram of the Utility Model (or Invention)
Fig. 2 is the Product engineering design of the Utility Model (or Invention)
Fig. 3 is xxxxxxxxxxxxxxxxxxxxxxxxxxxx
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5. Specific implementation

In the following, the technical solutions in the embodiments of the utility model will be clearly and completely described in combination with the drawings in the embodiments of the utility model. Obviously, the described embodiments are only part of the embodiments of the utility model, not all of the embodiments. Based on the embodiments in the utility model, all other

embodiments obtained by ordinary technicians in the art without making creative labor belong to the scope of protection of the utility model.

Referring to Fig. 1, the Utility Model provides a technical solution: a new electronic fence system includes a mobile phone, a single vehicle unit and a base station unit. The single vehicle unit includes a CPU. The CPU is electrically connected with the communication module through a wire, the communication module is electrically connected with the Bluetooth module through a wire, the CPU is electrically connected with the power module through a wire, the CPU is electrically connected with the positioning / BeiDou through a wire, and the CPU is electrically connected with the identification module through a wire, The CPU is electrically connected with the wireless signal transmission through the wire and diffuses through the wireless signal reception in the base station unit to form an electronic fence in a certain area, so that when the single vehicle unit is parked, it can only be parked in the specified base station unit, thus directly avoiding the phenomenon of the single vehicle parking and misplacing. At the same time, the additional positioning can be used for real-time positioning and reasonably arranging the urban layout.

The mobile phone is electrically connected with the Bluetooth module through the wireless signal, and the mobile phone is directly connected with the identification module inside the single vehicle unit through the identification QR code.

The single vehicle unit is electrically connected with the base station unit through a wireless signal.

The base station unit includes a processor. The processor is electrically connected to the positioning through a wire, the processor is electrically connected to the wireless signal receiving through a wire, the processor is electrically connected to the storage module and the power supply through a wire, and the processor is electrically connected to the wired / wireless communication through a wire. The structure cost is low, the design is reasonable, the installation position is adjustable, and the practicability is strong.

The single vehicle unit is electrically connected to the background of the single vehicle through wireless signals, and the base station unit is electrically connected to the background of the base station through wired / wireless communication. The background of the base station is electrically connected to the manufacturer of the single vehicle and the background of the single vehicle. The background of the single vehicle is electrically connected to the mobile phone through wireless signals. By using the fence as the electronic intelligence of the base station unit, a lot of manpower and material resources are saved, At the same time, the power supply of the base station unit can be provided as photovoltaic power supply or municipal power supply, which can facilitate layout planning and reasonable layout, thus increasing the city appearance and beauty of urban construction.

Specifically, the mobile phone is wirelessly connected with the Bluetooth module in the bicycle unit through the mobile phone Bluetooth, and the mobile phone is directly connected with the identification module in the bicycle unit through the mobile phone app authorized identification

QR code. It is an existing operating technology with mature and stable technology.

Specifically, the power supply can be divided into photovoltaic power supply and wiring mains power supply. The mains power supply is stable. The photovoltaic power supply can facilitate the position adjustment of the base station unit and save energy.

Specifically, the wireless signal transmission in the single vehicle unit is radio connected with the wireless signal reception in the base station unit, and the signals in the wireless signal transmission are received by the wireless signal reception to form an electronic fence in the urban base station unit.

Specifically, wired / wireless communication is one or more of wired / Bluetooth communication module, WiFi communication module, ZigBee communication module, 3G communication module, 4G communication module and / or 2.4G wireless communication module. The wired transmission data is stable, the wireless transmission is not limited by distance, and the cost is low. It can be reasonably installed according to the actual needs.

When in use, the mobile phone identifies the Bluetooth module and the two-dimensional code in the single vehicle unit through the mobile phone Bluetooth through the mobile phone app, and then transmits it to the communication module through the Bluetooth module. The communication module transmits it to the CPU. Meanwhile, the two-dimensional code is fed back to the mobile phone to establish a connection with the identification module, and then transmitted to the CPU. The CPU receives power supply and positioning processing through the power module and the positioning / BeiDou, At the same time, signals are sent to wireless signal transmission during unlocking and locking. These operation steps are the same as the unlocking and locking steps and principles of existing shared bicycles. This application will not explain too much. Furthermore, the base station unit transmits and receives wireless signals through the processor in real time to form an electronic virtual fence. When the wireless signal transmission in the single vehicle unit is received, the wireless signals are received to the processor for processing, Furthermore, the information can be stored through the storage module, and the power can be supplied through the photovoltaic power supply and the municipal power supply in the power supply module. The base station unit can be positioned in real time through positioning, so that the urban planning and layout can be effectively arranged. At the same time, the data can be transmitted to the background of the base station through wired / wireless communication in real time, and the background of the base station will feed back the information to the single vehicle manufacturer in time, It can master the bicycle information and location in each base station unit. At the same time, only authorized bicycle models can receive information in the base station background and the base station unit. When different unauthorized bicycle unit information is received, the base station unit will automatically feed back to the base station background for processing, and then the base station background will feed back the information to the bicycle background, and the bicycle background will timely feed back the information to the mobile phone for differentiation, And the storage module in the base station unit can be used to record the bicycle information, and can also store the parking time of the bicycle for recording the usage frequency.

To sum up, the new electronic fence system diffuses through the wireless signal reception in the base station unit to form an electronic fence in a certain area, so that when a single vehicle is parked, it can only be parked in the specified base station unit, thus directly avoiding the phenomenon of random parking of single vehicles. At the same time, the additional positioning can be used for real-time positioning, and the urban layout can be reasonably arranged. By making the fence into an electronic intelligent base station unit, This saves a lot of manpower and material resources. At the same time, the power supply of the base station unit can be provided as photovoltaic power supply or municipal power supply. In this way, it is convenient to carry out layout planning and reasonable layout, thus increasing the city appearance and beauty of urban construction. The structure cost is low, the design is reasonable, the installation position is adjustable, and the practicability is strong.

It should be noted that in this document, the terms "including", "including" or any other variation thereof are intended to cover non exclusive inclusion, so that a process, method, article or equipment including a series of elements includes not only those elements, but also other elements not explicitly listed, or elements inherent to such a process, method, article or equipment. Without further limitation, the element defined by the sentence "including one..." does not exclude the existence of another identical element in the process, method, article or equipment including the element.

Although the embodiments of the utility model have been shown and described, it can be understood by those skilled in the art that various changes, modifications, substitutions and modifications can be made to these embodiments without departing from the principle and spirit of the utility model, and the scope of the utility model is limited by the appended claims and their equivalents.

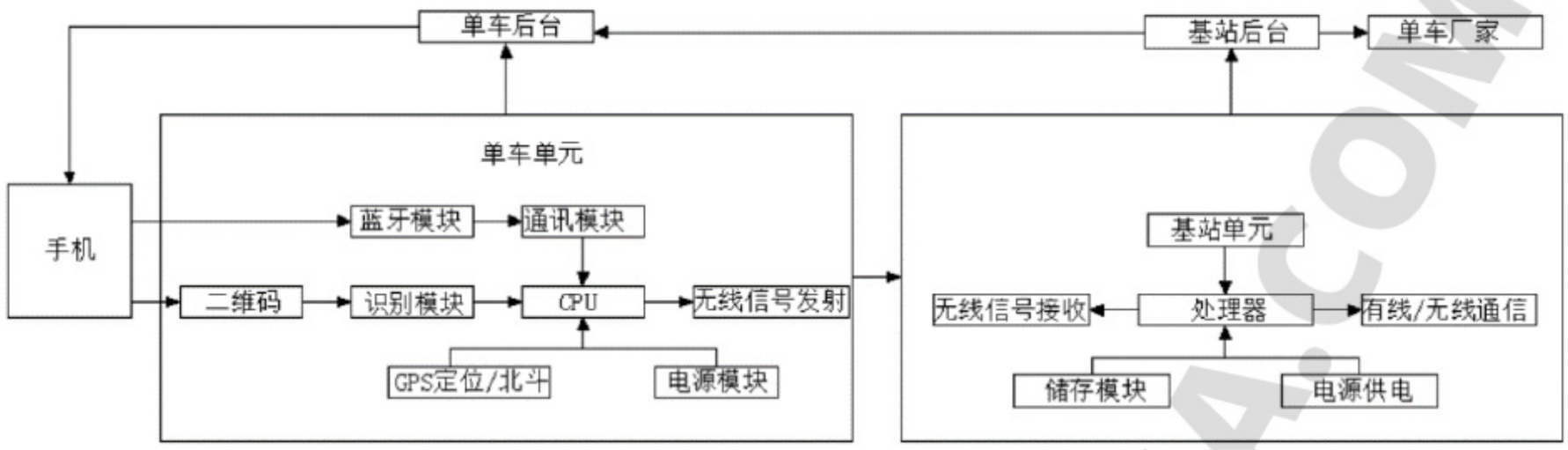

Fig. 1

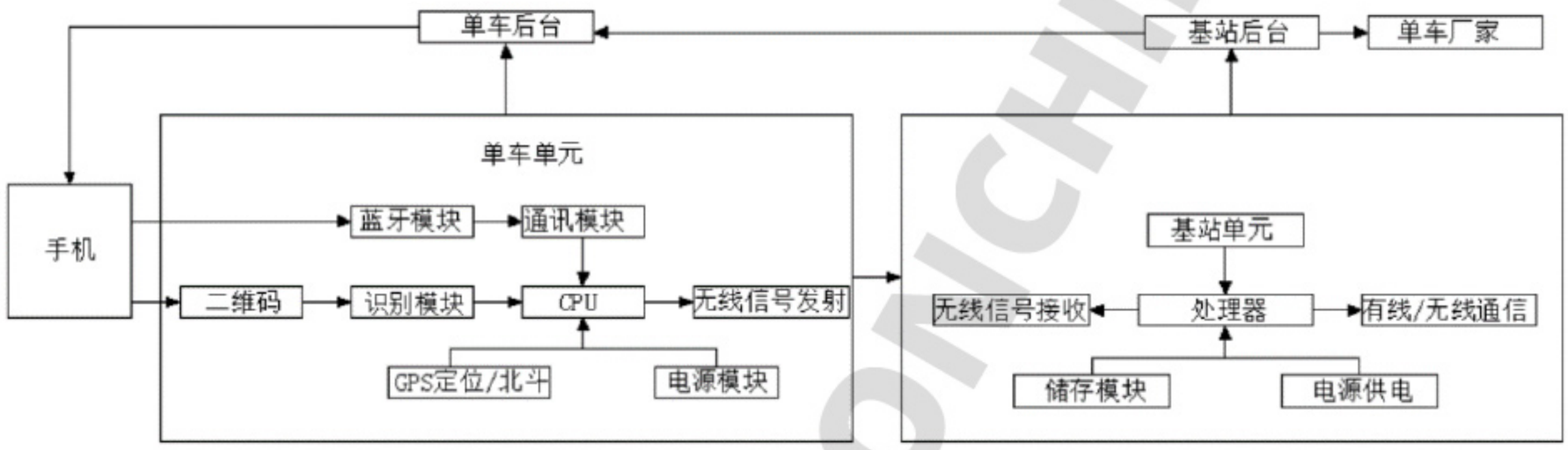

Fig. 2

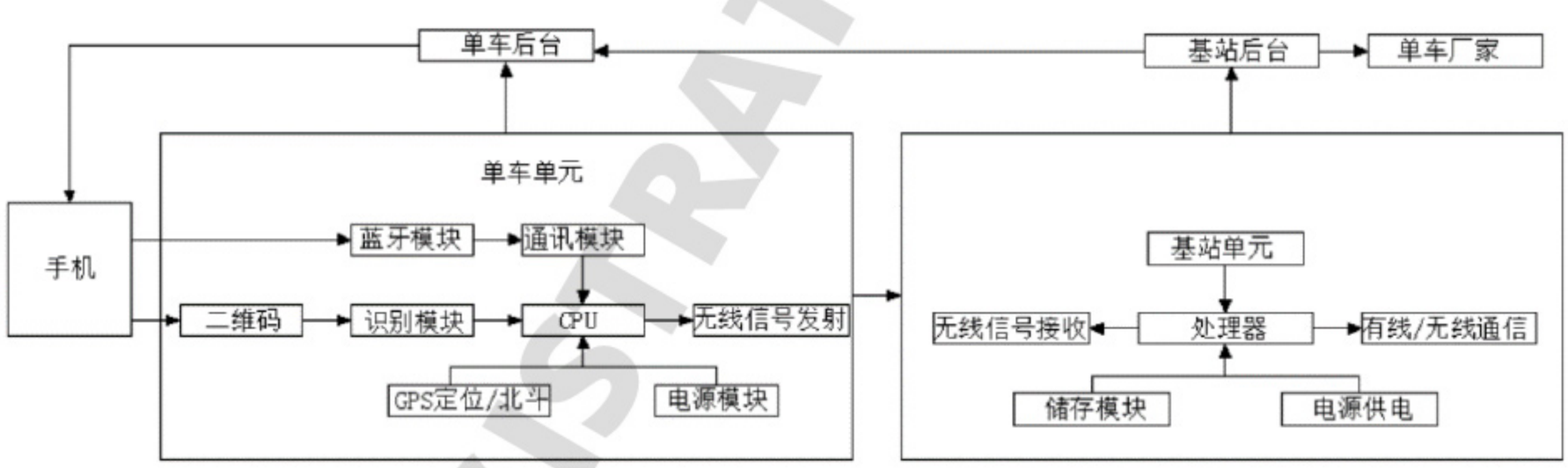

Fig.3