Title: ACCESS SYSTEM INCLUDING PARKING SYSTEM AND METHODS

Abstract: Systems and methods of obtaining access to areas such as parking. The purchase of articles and location of people are disclosed. The systems and methods may use a mobile telephone (50) to initiate access to an area or parking or the purchase of products. The mobile telephone call is received at a central location (20, 60, 130) to identify the request and to enable payment to be made for parking or purchase of articles and for initiating signals to enable access to area or the provision of articles which have been purchased. Methods and systems of paying for public transport are also disclosed which involve detecting people via a lighting system to identify the presence of people so that their location can be determined to identify the location of people in a building, and people using public transport so billing can be arranged based on the time of travel or distance travelled. Data is transmitted via the lighting system (194) and a GPS system (193) may be provided to supply position data so that distance travelled can be determined.
Field of the Invention
This invention relates to an access system and method and in particular, but not exclusively, to a parking system and method of providing parking for vehicles.

Background of the Invention
Most conventional parking systems used in cities generally comprise roadside parking in which bays are marked. Each bay is provided with a parking meter or one parking meter can be associated with a number of bays. In some systems, a ticket machine is provided so that a person can make payment for parking time and then locate a ticket on the vehicle dashboard to show that parking has been properly paid for. These systems generally require a person wishing to park to feed the meter with coins or the ticket machine with coins in order to pay for the parking. The provision of parking meters or ticket machines requires relatively extensive infrastructure. However, more importantly, there is also a need to collect coins from the parking meters or ticket machine and account for those coins, which is also time consuming and relatively expensive.

Dedicated parking stations are also used to provide parking in cities and are usually privately operated. As is well known, it is usual for a person wishing to park to either make payment for parking at the time of entering the car park, or at the time of leaving a car park.

Summary of the Invention
The object of the present invention is to provide an alternative system and method of providing access, such as parking to the existing systems referred to above.

The invention may be said to reside in an access system
comprising:

- a receiver for receiving a mobile telephone call to provide user identification;
- a processor for comparing the user identification with predetermined identification data for allowing access to the area; and
- an actuator for receiving an actuation signal to allow a barrier to be opened so that a user can gain access to the area.

In one embodiment the access system may be for providing access to a car parking space, either in an on-road car parking bay or in a car park station.

In other embodiments the access system may be for providing access to a secured premises.

In one embodiment the actuator comprises a motor for moving the barrier between open and closed positions and a relay for actuation to supply power to the motor upon receipt of the signal by the actuator.

The barrier may be a boom, door, bollard or the like.

In another embodiment the actuator comprises a solenoid for allowing a striker of a door to move between a locked and unlocked condition and a relay for supplying power to the solenoid upon receipt of the signal by the relay to thereby power the solenoid.

The invention may be said to reside in an access method comprising:

- receiving a mobile telephone call to provide user identification;
- comparing the user identification with predetermined identification data for allowing access to the area; and
opening a barrier so that a user can gain access to the area.

In one embodiment the access method may be for providing access to a car parking space, either in an on-road car parking bay or in a car park station.

In other embodiments the access method may be for providing access to a secured premises.

The invention also provides a parking system having a plurality of bays in which vehicles are able to park, said system comprising:

- a central station;
- a detector for detecting a vehicle in one of the bays;
- a transmitter for transmitting a signal to the central station containing data identifying the bay;
- a receiver at the central station for receiving a mobile telephone call to identify a person wishing to pay for parking in the bay and the bay in which parking is to take place; and
- a processor for matching the data identifying the bay received from the transmitter and the identity of the person wishing to park in that bay for facilitating payment for parking time in the bay.

Preferably the detector comprises a metal detector located in the ground within a bay.

Preferably the transmitter comprises a modem for transmitting a mobile telephone call to the central station containing data identifying the bay.

Preferably the identity of the person wishing to pay for parking in the bay comprises the mobile telephone number of the mobile telephone belonging to that person, and data
identifying the person comprises the person's mobile telephone number.

Preferably payment for parking time is made by debiting an account at the central station belonging to the person or billing a credit card or telephone account associated with the person.

Preferably the central station also comprises a mobile telephone transmitter for transmitting an SMS message to the person's mobile telephone indicating that parking time is about to expire.

Preferably the central station comprises a processor for receiving the data identifying the bay and the data identifying the person, and at least one database containing identification data relating to bays in which vehicles can be parked and persons subscribed to the system.

Preferably the central station also includes a transmitter which is controlled by the processor for transmitting data to a parking officer to show bays in which vehicles are legally parked and bays in which vehicles are illegally parked.

The invention also provides a parking method using a plurality of bays in which vehicles are able to park, said method comprising:

- detecting a vehicle in one of the bays;
- transmitting a signal to a central station containing data identifying the bay;
- receiving a mobile telephone call at the central station to identify a person wishing to pay for parking in the bay and the bay in which parking is to take place; and
- matching the data identifying the bay and the identity of the person wishing to park in that bay for
facilitating payment for parking time in the bay.

Preferably the identity of the person wishing to pay for parking in the bay comprises the mobile telephone number of the mobile telephone belonging to that person, and data identifying the person comprises the person's mobile telephone number.

Preferably payment for parking time is made by debiting an account at the central station belonging to the person or billing a credit card or telephone account associated with the person.

Preferably the method also comprises transmitting an SMS message to the person's mobile telephone indicating that parking time is about to expire.

Preferably the method further comprises transmitting data to a parking officer to show bays in which vehicles are legally parked and bays in which vehicles are illegally parked.

The invention in one aspect provides a system for providing purchasable articles comprising:

- an apparatus for providing the articles;
- a processor for receiving data relating to payment for the supply of the articles, for authorising payment and providing a signal to the apparatus so that the articles can be provided to a customer from the apparatus;

and

whereby in response to the signal, the article is supplied to the customer from the apparatus and the customer is billed for the article.

In one embodiment the processor receives the data by way of mobile telephone transmission.
In one embodiment the payment may be by way of a debit to the customer's mobile telephone account.

In a further embodiment the payment may be made by way of a debit to a credit card.

In a still further embodiment the payment may be made by way of a debit to a subscribed deposit provided on behalf of the customer.

In one embodiment the apparatus may be an apparatus for producing photographs from a photographic medium.

In an alternative embodiment the apparatus may be a vending machine for providing an article.

In the case of a vending machine a telephone number to call may be provided on the vending machine.

The vending machine may include an input device for receiving input from the customer to identify the number of articles or specific articles required from the vending machine and the vending machine includes a communication device for communicating data relating to the articles required to the processor so that billing can be determined and the signal supplied back to the vending machine to supply the articles to the customer.

The invention in one aspect provides a kiosk system for providing photographs, comprising:

- a photograph producing apparatus for producing photographs from a photographic medium;
- a processor for receiving data relating to payment for the production of the photographs, for authorising payment and for providing a signal to the apparatus so the production of photographs can commence; and
- whereby in response to the signal the photographs are
produced from the photographic medium and supplied from the apparatus to a customer, and the customer is billed for the photographs by the processor.

In one embodiment of the invention the processor is connected to the apparatus by a communication link.

In one embodiment the apparatus includes a card reader for reading a card by which payment is to be made, and data relating to the card reader is transmitted to the processor by the communication link.

In a still further embodiment a telephone call to the processor is used to provide for billing and to initiate a response from the processor to the apparatus to cause the photograph to be produced.

Billing for the photographs may be by a charge to a credit card, a debit account or rendered to a telephone account.

In one embodiment the medium comprises a memory stick and the apparatus includes a slot for receiving the memory stick so that data relating to the photographs can be downloaded from the memory stick to the apparatus to produce the photographs.

The invention in one aspect provides a method of providing purchasable articles comprising:

- providing an apparatus to provide the articles;
- processing data for authorising payment;
- providing a signal to the apparatus so that the articles can be provided to a customer; and
- whereby in response to the signal, the article is supplied to the customer from the apparatus and the customer is billed for the article.

In one embodiment the processor receives the data by way
of mobile telephone transmission.

In one embodiment the payment may be by way of a debit to the customer's mobile telephone account.

In a further embodiment the payment may be made by way of a debit to a credit card.

In a still further embodiment the payment may be made by way of a debit to a subscribed deposit provided on behalf of the customer.

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The invention in one aspect provides a method for providing photographs, comprising:

- receiving data relating to payment for the production of the photographs, for authorising payment and for providing a signal to an apparatus so the production of photographs can commence;
- and producing the photographs in response to the signal.
from the photographic medium.

In one embodiment the method further comprises transmitting the data to the processor by a communication link.

In a still further embodiment a telephone call to the processor is used to provide for billing and to initiate a response from the processor to the apparatus to cause the photograph to be produced.

The invention in a further aspect provides a parking system for vehicles, comprising:

- a plurality of parking bays, each parking bay having a detector;
- a receiving system for detecting the detector so that if no vehicle is parked in the parking bay the detector is able to output a signal receivable by the receiving system to identify that the parking bay is free, and if a vehicle is parked in the parking bay the location of the vehicle prevents the receiving system from receiving the signal thereby indicating that the parking bay is occupied;
- a processor coupled to the receiver system for processing the signals supplied by the receiver system to identify the presence or lack of presence of a vehicle in a parking bay; and
- a display for identifying vehicle parking bays which are unoccupied so a customer can readily discern which bays are available for parking.

In the preferred embodiment of the invention the processor is connected to the receiving system by the lighting system associated with a car park in which the parking bays are located.

Preferably the receiving system comprises a transmitter for transmitting a signal for detection by the detector
and a receiver for receiving a signal from the detector in response to the signal received from the receiver.

In one embodiment of the invention the processor may also include a billing processor for receiving information relating to the time period in which the vehicle is parked in the parking bay so that billing for parking time can be calculated and billed to an account associated with the user of the vehicle.

In one embodiment the billing processor is for receiving a mobile telephone call from the user to identify the parking bay in which the vehicle is parked and an account associated with the user of the vehicle so that billing can be charged to the account associated with the vehicle.

The invention in a further aspect provides a parking method, comprising:

providing a plurality of parking bays, each parking bay having a detector;

receiving a signal from the detector so that if no vehicle is parked in the parking bay the detector outputs a signal to the receiving system to identify that the parking bay is free, and if a vehicle is parked in the parking bay the location of the vehicle prevents receipt of the signal thereby indicating that the parking bay is occupied;

processing the signals supplied by the receiver system to identify the presence or lack of presence of a vehicle in a parking bay; and

displaying vehicle parking bays which are unoccupied so a customer can readily discern which bays are available for parking.

In the preferred embodiment of the invention the processor is connected to the receiving system by the lighting system associated with a car park in which the parking
bays are located.

Preferably the receiving system comprises a transmitter for transmitting a signal for detection by the detector and a receiver for receiving a signal from the detector in response to the signal received from the receiver.

In one embodiment of the invention the method includes receiving information relating to the time period in which the vehicle is parked in the parking bay so that billing for parking time can be calculated and billed to an account associated with the user of the vehicle.

In one embodiment a mobile telephone call from the user is used to identify the parking bay in which the vehicle is parked and an account associated with the user of the vehicle so that billing can be charged to the account associated with the vehicle.

The invention in a further aspect provides a system for identifying the location of people, comprising:
- a plurality of tags carried by people;
- a receiving system for detecting the tags and providing an output indicative of the location of the people;
- a processor coupled to the receiver system for processing the signals supplied by the receiver system to identify the location of a person; and
- a display for identifying the location of the person.

In the preferred embodiment of the invention the processor is connected to the receiving system by the lighting system associated with a car park in which the parking bays are located.

Preferably the receiving system comprises a transmitter for transmitting a signal for detection by the detector...
and a receiver for receiving a signal from the tag in response to the signal received from the receiver.

The invention in a further aspect provides a person locating method, comprising:

- providing a plurality of tags to be carried by people;
- detecting the tags to provide a signal indicative of the location of the people;
- processing the signals to provide the location of a person; and
- displaying the location of the person.

In the preferred embodiment of the invention signals are transmitted via the lighting system associated with an area in which the people are present.

A still further aspect of the invention relates to a public transport payment system comprising:

- a public transport vehicle;
- a detector carried by the vehicle for detecting passengers alighting the vehicle, and for determining when passengers leave the vehicle by lack of detection of the passengers in the vehicle; and
- a processor for receiving a signal indicating the presence of passengers on the vehicle and for determining a charge for transport associated with a passenger for rendering to the passenger.

In one embodiment of the invention the passenger is detected by the passenger carrying a tag which is interrogated by a receiver system so that when the passenger alights the vehicle the receiver system detects the tag thereby determining that a passenger has alighted the vehicle and when the tag is no longer detected assumes that the passenger has left the vehicle.
In a still further embodiment the system includes means for determining the travel distance of the passenger so that billing relating to distance travelled can be determined.

In one embodiment, the said means comprises a GPS system which identifies the location of the vehicle when the passenger alights the vehicle and the location of the vehicle when the passenger leaves the vehicle so the distance travelled can be determined.

In other embodiments the means may comprise an odometer based reading from the vehicle to determine the distance travelled.

In a still further embodiment in the billing for transport is based on the time between when the passenger alighted the vehicle and left the vehicle.

In the preferred embodiment of the invention the receiving system comprises a transmitter for outputting a signal to interrogate a tag and a receiver for receiving a signal from the tag if the tag is in the vicinity of the transmitter.

Preferably the processor is coupled to the receiver system via the internal lighting of the vehicle.

In one embodiment the processor may be connected to a central station via communication link for downloading data relating to passengers who have used the vehicle and dated to enable billing for transport to be determined.

In another embodiment the processor can be interrogated on a daily basis to download the data and enable billing to be compiled.
A still further aspect of the invention relates to a public transport payment method comprising:

- detecting passengers alighting a vehicle and determining when passengers leave the vehicle by lack of detection of the passengers in the vehicle;
- processing a signal indicating the presence of passengers on the vehicle and for determining a charge for transport associated with a passenger for rendering to the passenger.

In one embodiment of the invention the passenger is detected by the passenger carrying a tag which is interrogated by a receiver system so that when the passenger alights the vehicle the receiver system detects the tag thereby determining that a passenger has alighted the vehicle and when the tag is no longer detected assumes that the passenger has left the vehicle.

In a still further embodiment travel distance of the passenger is determined so that billing relating to distance travelled can be determined.

In one embodiment, the method identifies the location of the vehicle when the passenger alights the vehicle and the location of the vehicle when the passenger leaves the vehicle so the distance travelled can be determined.

In a still further embodiment in the billing for transport is based on the time between when the passenger alighted the vehicle and left the vehicle.

Preferably the processor is coupled to the receiver system via the internal lighting of the vehicle.

In one embodiment the processor may be connected to a central station via communication link for downloading data relating to passengers who have used the vehicle and
dated to enable billing for transport to be determined.

In another embodiment the processor can be interrogated on a daily basis to download the data and enable billing to be compiled.

The invention in a still further aspect provides a monitoring system for monitoring the presence of a person, comprising:

- a lighting system for illuminating an area in which a person is present;
- a receiver and transmitter associated with the lighting system for receiving and transmitting data over the lighting system;
- a central processor connected to the lighting system for controlling the transmitter and receiver so that the transmitter outputs signals to interrogate a tag carried by a person and in response to that interrogation the tag outputs a signal for detection by the receiver to identify the presence of the person; and
- whereby the location of the person is determinable by the receiver which detects the tag carried by the person.

In one embodiment the system provides for monitoring the presence of a person in a building or like area for locating the person, identifying the whereabouts of the person, or evacuation purposes.

In another embodiment the system is used to identify people using a public transport system to facilitate for billing for use of the public transport system.

The invention in a still further aspect provides a monitoring method for monitoring the presence of a person, comprising:

- illuminating an area in which a person is present by a lighting system;
receiving and transmitting data over the lighting
system, to identify the presence of a person; and
processing the data to identify the presence of the
person and the location of the person is determinable by
the receiver which detects the tag carried by the person.

In one embodiment the system provides for monitoring the
presence of a person in a building or like area for
locating the person, identifying the whereabouts of the
person, or evacuation purposes.

In another embodiment the system is used to identify
people using a public transport system to facilitate for
billing for use of the public transport system.

The invention also provides a system for providing parking
to a person, comprising:

- a web page accessible by a web browser system
  which provides information relating to available parking
  spaces for lease;
- a central station for receiving data supplied via
  the internet in response to data contained in the web page
  providing a request to take up an offer to lease or rent a
  car parking space and providing data identifying the
  person wishing to take up the offer; and
- a receiver and processor for receiving a mobile
  telephone call from the person wishing to take up the
  offer to identify the person and allow access to the
  parking space.

In one embodiment the receiver and processor may be
located at the parking space and may further comprise an
actuator for opening a barrier to permit access to the
parking space.

Preferably the central station processes billing data
relating to payment for the parking space and for debiting
an account:, credit card or telephone account associated with the person, and for processing payment to be made to the owner of the car parking space.

The invention also provides a method of providing parking to a person, comprising:

- establishing a web page accessible by a web browser system which provides information relating to available parking spaces for lease;
- receiving data supplied via the internet in response to data contained in the web page providing a request to take up an offer to lease or rent a car parking space and providing data identifying the person wishing to take up the offer; and
- receiving a mobile telephone call from the person wishing to take up the offer to identify the person and allow access to the parking space.

Preferably the method further comprises processing billing data relating to payment for the parking space and for debiting an account, credit card or telephone account associated with the person, and for processing payment to be made to the owner of the car parking space.

Brief Description of the Drawings
Preferred embodiments of the invention will be described, by way of example, with reference to the accompanying drawings, in which:

- Figure 1 is a schematic block diagram or a parking system and method according to one embodiment of the invention;
- Figure 2 is a schematic block diagram of a parking method and system according to a second embodiment of the invention;
- Figure 3 is a schematic block diagram of a further embodiment of the invention which has a more general application of not only providing for parking, but
general access to secured locations;
Figure 4 is a schematic block diagram of a
further embodiment of the invention;
Figure 5 is a block diagram of a system and
method for obtaining printed photographs according to one
embodiment of the invention;
Figure 6 is a block diagram of a system and
method according to a second embodiment of the invention;
Figure 7 is a block diagram showing how parking
locations can be identified according to a further
embodiment of the invention;
Figure 8 is a block diagram showing how the
location of people within a building can be monitored;
Figure 9 is a view of a public transport system
having a payment system according to one embodiment of the
invention; and
Figure 10 is a more detail block diagram of the
system used in Figure 9.

Detailed Description of the Preferred Embodiments

With reference to Figure 1, a parking system and method is shown. The system comprises a detector 10 which is located in the ground at a parking bay A, in which a vehicle can park, for detecting the presence of a vehicle in the parking bay. Most preferably the detector 10 comprises a metal detector for detecting the presence of a metal object such as a vehicle within the parking bay.

The detector 10 is connected to a transmitter 12 in the form of a mobile telephone modem such as a GSM modem, CDMA modem or GPRS modem. However, any type of modem or transmitter for transmitting a telephone signal and most preferably, a mobile telephone signal, can be used.

A central station 20 maintains a database 22 of subscribers who subscribe to use the parking system and method. Subscription to the system is simply by way of
registering a user ID which may be in the form of a mobile telephone number and opening an account for payment of parking which can be by way of a credit card or by advancing funds to the user's account at the central station 20, or by way of payment on a telephone bill.

When the metal detector 10 detects the presence of a vehicle within the parking bay A for a predetermined period of time, such as one minute, the detector 10 outputs a signal on line 26 to the modem 12 to activate the modem 12 so that the modem 12 makes a mobile telephone call to the central station 20. The mobile telephone call simply comprises an identification number which is associated with the parking bay A so that the central station 20 knows that a vehicle has been parked at the parking bay A. The telephone message is received by a transmitter/receiver 30 at the central station 20. The receiver 30 may be a mobile telephone receiver which is able to both receive telephone calls and to transmit an SMS message via the mobile telephone network N.

Upon receipt of the telephone call from the modem 12, the time of receipt of the call is logged in a database 24 which may be a separate database to the database 22 or part of the database 22. The identification number of the parking bay is also logged in the database 24. The person wishing to park in parking bay A is required to make a mobile telephone call via his or her mobile telephone 50 to the central station 20. The telephone number for the central station 20 can be provided when the user subscribes to the system and can be simply painted at the parking bay A or located on a sign at the parking bay A. The parking bay A is also marked with an identification number, which may be the same as the identification number (i.e. the telephone number) of the modem 12. However, more conveniently, the parking bay A may simply be provided with a briefer identification such as A105, and
the user wishing to park simply inputs the identification code A105 into the keypad of the mobile telephone 50 when prompted to do so by the central station 20. The identification code transmitted from the user's mobile telephone 50 is then matched with the identification code transmitted from the modem 12. The central station 20 and, in particular, the databases 22 and 24 and the operation of the transmitter/receiver 30 is controlled by a processor 35.

Thus, the central station 20 knows which parking bay is now occupied by a vehicle and the telephone number of the mobile telephone 50 is logged to identify the person paying for the parking within the bay A.

The central station 20 may also maintain data relating to the parking bay which relates to the amount of time a vehicle can be parked in the parking bay A and any other prescribed parking conditions, such as whether no parking is available in a parking bay A at a particular time (or in other words, whether the parking bay A forms a clearway at particular times) so that no parking is allowed at that time.

Once the processor 35 at the central station 20 has determined the validity of parking and that parking is associated with a subscribed customer who will be paying for the parking, the mobile telephone transmitter/receiver 30 forwards a message by the mobile telephone link to a parking officer responsible for the area in which the parking bay A is located to indicate that parking bay A is properly occupied and that parking is being paid for. If the vehicle parks and no telephone call is made by the user, the central station 20 still receives the message from the modem 12, but the lack of a call from the user indicates to the central station 20 that the vehicle is illegally parked and that parking is not being paid for.
and the appropriate message indicating that the vehicle is illegally parked can be forwarded to the parking officer from the transmitter/receiver 30. The parking officer can then issue a parking ticket to the vehicle. Similarly, if the vehicle overstays the parking time within the parking bay A, a message can be sent to the parking officer so that a parking ticket can also be issued.

The central station 20 also provides an SMS message to the mobile telephone number associated with the person paying for parking when ten minutes of parking time is left, to alert the user that the time for parking has almost expired, and therefore providing a prompt to the user that the vehicle should be moved. Alternatively, if the user chose to pay for only part of the time available in the parking bay A, the user can elect to extend the parking time up to the maximum parking time allowed within the bay A by again calling the station 20 and following prompts provided from the station 20 and insert data into the keypad 50 to extend the time for parking.

The central station 20 then accounts for the parking time by charging the credit card associated with the person paying for the parking, or debiting that person's account maintained at the station 20, or provides a debit to the telephone company related to the user's mobile telephone 50 so that the telephone account can be debited accordingly.

The parking officer responsible for a particular area receives the messages from the transmitter/receiver 30 on his or her PDA and graphic images can be displayed on the PDA for each path route showing which vehicles are legally parked in bays, and which are not, so that the parking officer can issue the required parking tickets for any violations which occur.
The system according to this embodiment of the invention therefore makes it much easier for a parking officer to determine which vehicles are illegally parked and for issuance of tickets to those vehicles. The validity of any tickets issued can be more reliably determined because of the data held within the central station 20 and therefore the system does not rely only on the parking officer to monitor parking time and issue tickets in the case of a violation. Furthermore, no coin payments need be made by people wishing to pay for parking and therefore, the system does not require meters to be emptied of coins or for those coins to be processed. Furthermore, the user need not rely on having coins available to feed a meter, but simply needs his or her mobile telephone in order to pay for parking.

The modem 12 may be provided below ground, provided that it is able to transmit the appropriate mobile telephone signal to the central station 20. Alternatively, the modem 12 could be provided in a secure box above ground beside the parking meter A and connected to the metal detector 10 by an underground cable. In still further embodiments, one modem 12 can be used to control a number of parking bays A by being connected to a plurality of metal detectors 10, each associated with one of the bays. The detectors 10 output a signal which can be identified by the modem 12 as coming from a particular bay and a single modem 12 can therefore transmit various identification codes identifying the various bays to decrease the amount of modems required in a particular area.

Figure 2 shows an embodiment applicable to off-street parking in a car park or parking station 60. Entry to and exit from the car park 60 is controlled by a boom gate 70 (or a plurality of boom gates 70). In this embodiment, modem 12 is located at the parking station 60 and is part
of a processor 55 which contains a memory or storage
facility 56. The processor 55 is connected to a relay 72
for providing an output signal to the relay 72 which in
turn can close upon receipt of that signal to supply power
to a motor 74 from battery or power supply 76 to open the
boom gate 70.

When a person wishing to park arrives at the parking
station 60, the person makes a mobile telephone call via
his or her mobile telephone which provides the user's
mobile telephone number to identify the person paying for
the parking. The information identifying the person is
stored in the memory 56 of the processor 50 for billing
purposes which can be controlled by the processor 55 or
alternatively, can be relayed to a central station 20
which controls billing for a number of car parks 60.

The processor 55 may include a database 58 which includes
data relating to people who are subscribed to the system
so the identifying data received from the user's mobile
telephone 50 can be matched with data in the database for
billing purposes. Alternatively, the data relating to
subscribers can be maintained at the central station 20
and received by the central station 20 from the processor
55 via a mobile phone transmitter 57.

When the boom gate 70 is opened after receipt of the
telephone call from the mobile telephone 50, the user is
able to enter the car park 60 and park. When the user
exits the car park, the user makes another mobile
telephone call to the mobile telephone number associated
with the modem 12 and again, the telephone number of the
mobile telephone 50 is used to log the user's intention to
leave the car park by virtue of the second call being
made, so that the boom gate 70 is opened to allow the
vehicle to exit the car park. The time of making the
second telephone call is also logged so that the parking
- 24 -

time in the car park 60 can be determined and the appropriate debit of the user's account made or charged to the credit card or telephone bill.

The processor 55 and/or the central station 20 is therefore able to monitor when a car registers for entry into the car park or exit from the car park. In the case of a person parking making a bogus telephone call to indicate a false intention to exit the car park, but does not actually leave the car park, the vehicle will not be able to exit the car park in a convenient way without again telephoning the modem 12 to open the boom gate 70. If this occurs, billing for the maximum time of parking at the parking station 60 can be rendered against the user.

The processor 55 or central station 20 is able to distinguish between the third telephone call which is intended to allow an illegally parked vehicle to exit the car park 60 and the same car again wishing to enter the car park 60 by not receiving a further telephone call within a predetermined period, such as 12 hours to show that the vehicle is actually exiting the car park.

When the second mobile telephone call is made from the mobile telephone 50 indicating that a vehicle is exiting the car park 60, the parking time is calculated by the processor 56 or central station 20 and an SMS message is sent via a transmitter/receiver 57 at the car park 60 or from the receiver/transmitter 30 providing a receipt number to the user and also the cost of the parking.

The system of Figure 2 can be used at any number of car parks or parking facilities under the common control of the central station 20 and can be used in combination with normal payment methods, where cash is handed over for parking time at the time of entering or leaving the car park, or instead of normal payment methods.
Figure 3 shows a still further embodiment of the invention which relates to the ability to gain access to a premises in a somewhat similar way to the embodiment of Figure 2 except that it is intended for private use to gain access to a garage or other secured location where a car can park, or to enable any authorised person to gain access to a "locked" location.

In this embodiment, a roller door 90 may be provided for closing a garage 6. The roller door 90 is operated by a motor 92 and a relay 91 is connected between the motor 92 and a supply of power 76. A modem 12 which is the same as the modem 12 previously described is located at the garage 6 and a processor 80 with a storage 85 is associated with the modem 12. The processor 80 and storage 85 may be programmed with particular mobile telephone numbers (such as the mobile telephone numbers of members of a family) who are authorised to gain access to the garage G to park vehicles or for other purposes.

In order to park in the garage 6, the user makes a mobile telephone call from his or her mobile telephone 50 to the modem 12. The modem 12 receives the number of the mobile telephone and supplies this to the processor 80 which matches the number with the authorised number stored in the storage 85. When a match occurs, an output signal is supplied from the processor 80 on line 89 to operate the relay 91 to cause the relay to close so that power is supplied to the motor 92 for a predetermined period of time in order to open the roller door 90.

After the predetermined time has expired, the motor 92 can be reversed to close the roller 90.

The present system also has the advantage that it enables access to the garage G to be provided from remote locations by making a telephone call from a user's mobile
telephone 50. Thus, in the event of a tradesman or the like needing access to the garage 6, it is not necessary for the user to be at home to open the roller door 90. The tradesman can simply alert the user by telephone call when he or she arrives at the relevant premises so that the user can then make the mobile telephone call to the modem 12 to open the roller door 90.

The roller door 90 can be maintained open in the conventional manner if required and closed manually by the tradesman when work has been completed.

Rather than operating a roller door 90, the system may operate any type of door in a number of different ways. Thus, a normal swinging door can be locked by the use of a solenoid which controls a striker and can be opened by activating the solenoid when the relay 91 is closed so the door can then be pushed open.

A further embodiment of the invention also relates to the ability of a person to rent or lease a car park owned by that person to another party for a limited time.

Thus, for example, if a person owns a car park and is not using that car park at a particular time, the car park can be leased to another person.

This embodiment is achieved according to Figure 4 in which the user lists his or her car park on a web page 100 which can be inspected by a web page browser by a person wishing to park at a particular place. The web page 100 may be provided with the ability to search for a car park in a particular location. For example, a person may wish to rent or lease his or her car park for a particular day where a large event such as a football match, concert or the like is to take place when the owner will not be occupying the car park. The owner is able to list his or
her car park on the web page 100 together with the location of the car park and a particular identification number and the time when the car park is available. A particular identification number could be associated with the car parking space.

Any person wishing to occupy the car parking space can, via the internet, book that car park from the user's personal PC 110 and provide his or her mobile telephone number together with the method of payment, which may be by way of credit card or by debiting an account the user has with the operators of the system if the user is a frequent user of the system. Alternatively, the person may make the booking by making a mobile telephone call direct to the central station 20 from his or her mobile telephone 50 to provide an identifying telephone number and also, in response to prompts from the central station 20, inserting data into the keypad of the mobile telephone to identify the car park which is required.

Access to the car park is controlled in the manner described with reference to Figures 2 or 3 so that when the user arrives at the car park, access is gained by making a telephone call to a number provided to the user. The time of making the telephone call is logged by the modem 12 at the car park to verify that the user is attempting to park at the appropriate time parking has been booked and if so, a boom gate 70, door, bollards or other way to the car park can be opened in the manner described with reference to Figures 2 and 3. The user is therefore able to park in the car park. The user is required to move his or her vehicle within the time limits for which parking has been offered via the web page 100 and therefore is required to make a further mobile telephone call within those time limits to the modem 12 to exit the car park. If the user does not make the telephone call, the user is barred from exit or,
alternatively, a higher fee is charged for any additional time which takes place.

The central station 30 is able to tabulate billing for the parking time and remit that to the owner of the car park on a regular basis, such as monthly by cheque or otherwise.

In all of the embodiments described above, the modem 12 may include a real time clock 13 for logging the time a vehicle or mobile telephone call is detected. In the case of the embodiment of Figure 1, the time at which the detector 10 first detects presence of the car can therefore be logged and forwarded to the central station 20. Alternatively, the central station 20 can include the time clock which logs the time the central station receives the telephone transmission from the modem 12.

The modem 12 may include processing capabilities as described with reference to Figures 2 to 4 so that it is able to receive signals and process them from the metal detector 10 or from a mobile telephone to perform the functions described in the various embodiments.

With reference to Figure 5 a system and method for obtaining printed photographs from a kiosk 110 is shown. The kiosk 110 includes a photograph processing apparatus 112 into which a memory stick 114 from a digital camera can be inserted via slot 116. The apparatus 112 has an outlet 118 for producing a printed receipt and a card reader 119 for reading a credit card or other payment card.

The apparatus 112 may also include a keyboard 120 for the input of data to command the apparatus 112. The command input to the keyboard 120 may be a request for a certain number of photographs to be printed, details concerning
mode of payment and the like.

The apparatus 112 is connected to a central processing station 130 by communication link 140. The station 130 may also be directly connected by mobile telephone 132 via the conventional mobile telephone network.

Thus, a user of the system has the option of paying by card which is inserted into card reader 119 or by making a mobile telephone call from his or her mobile telephone 132 to the central station 130. The number which is to be called if the mobile telephone payment method is used can be displayed on the apparatus 112.

When the person inserts the memory stick 114 into the slot 116 the person then selects how payment is to be made and either inserts his or her credit card into slot 119 or telephones the number via the mobile telephone 132. The data relating to the number of photographs required or the number of photographs on the memory stick 114 which are to be printed is transmitted to the central station 130 and the costs of the printing of the photographs is determined. The central station 130 can then authorise the credit card payment or debit payment or the like if a card is used or alternatively can authorise payment by way of an entry on the user's mobile telephone account if payment by mobile telephone 132 is selected.

Once the authorisation that funds are available for payment is received, a signal is transmitted back from the central station 130 to the device 112 via the communication link 140 to confirm that the printing of the photographs can take place and the photographs are then printed and produced at output 135. A receipt is then dispatched through slot 118 showing the cost and how payment has been made whether that be by way of credit card, debit or by entry to the telephone account.
In a still further embodiment, rather than use a telephone account or credit or debit account a special account can be opened with the operator of the system and funds paid into the account so that when payment is required the mobile telephone 132 or input of a card into the slot 119 can directly access the user's credit account with the system operator and funds debited against that account for payment of the printed photographs.

If payment via credit card or the like is produced then data relating to the payment is transmitted to the credit card authority or debit authority via communication link 138 to a bank or other establishment 140 or data is supplied over communication link 139 to the telephone authority 141 which supplies the user's mobile telephone for addition to the user's telephone account.

Once the transaction is complete the user removes his or her memory stick 114 so that the kiosk 110 can be used by another customer.

A number of kiosks 110 can be provided at different establishments and connected back to the same central station 130.

Figure 6 shows a second embodiment of the invention which is similar to the embodiment of Figure 5 except that products are provided by a vending machine 111. Like reference numerals indicate like parts to those previously described.

In this embodiment articles to be provided by the vending machine 111 are displayed in the machine and can be selected by a customer for purchase. The vending machine 111 is allocated a telephone number which the customer should telephone to initiate the transaction. A telephone
call can be made via SMS message or other call from mobile telephone 132, as in the previous embodiment.

Each vending machine in the system (only one shown in Figure 6) may be provided with a unique telephone number which identifies the vending machine in question so that the processor 130 communicates with the appropriate vending machine. Alternatively, a single telephone number could be used for all vending machines and the user prompted to input a vending machine number which could be displayed on the vending machine 111 to identify the appropriate machine 111.

The user can then input data relating to the number of articles required from the vending machine, or the specific articles required. This can be done by way of the mobile telephone call from telephone 132 or input into a keyboard 120 (or other input device such as a touch screen or the like) to identify the article or number of articles requested. Data from the keypad 120 is transmitted over link 140 to the processor 130 which then calculates the cost of the purchase and billing is made via debit entry to the user's mobile telephone account to a credit card, or by debit to a subscription account provided by the user, as in the earlier embodiments.

Once payment has been authorised, a signal is transmitted back from the processor 130 via the link 140 to the vending machine 11 to activate the vending machine to dispense the articles which have been requested by the customer.

Figure 7 shows a further embodiment of the invention which provides information relating to the availability of car parking spaces in a car parking station.

Typically, car parking stations are provided on a number
of different levels and there is often some difficulty, if the parking station is relatively crowded, of locating a particular parking space.

The system and method according to this embodiment of the invention provides a detector 150 in each parking bay 151. The lighting system of the parking station which includes a plurality of lights 152 (only one shown in Figure 7) is used to convey information to the various parking bays 151 and back from those parking bays to a processor 153 which can then control a display 154 showing where parking is available.

The processor 153 controls a transmitter 155 and a receiver 156 associated with the internal car park lighting 152 via the car park internal lighting system so that the transmitter 155 outputs a signal which is directed towards the detector 150 in the form of an "are you there" signal and if so the detector 150 outputs a signal which is received by the receiver 156. However, if a vehicle V shown in dotted lines in Figure 7 is occupying the car space 151 then the detector 150 is effectively blocked and no signal is transmitted in response to the output from the transmitter 155. Thus, this indicates that by no receipt of the signal by the receiver 156 that a vehicle does occupy that space.

Therefore the processor 153 knows which spaces in the car park are actually occupied by vehicles and which spaces are not. The processor 153 can then generate an output for display on one or more displays 154 indicating where car parking spaces are available.

A display 154 can be located at each floor of the car park identifying the bays which are available for parking or if no bays are available on a particular level indicating that the next available bay is on a particular level to
thereby make is easy for a driver to locate an available bay and park his or her vehicle V.

The embodiment of Figure 7 may also include a payment system where data from the processor 153 is supplied to a payment processor 160 so that payment for parking time can be determined and billed directly to an account belonging to the owner of the vehicle V. This can be done by way of a mobile telephone call to the processor 160 or a central station associated with the processor 160. The number to be called can be displayed on the parking station or at each parking bay. The user's account details can be input into the mobile telephone 161 and supplied to the processor 160 by way of the mobile telephone call to identify the user. The system is able to identify the amount of time the vehicle V occupies a car parking space from the time when signals were not received the detector 150 in view of parking of the vehicle to the time when signals are again received when the vehicle is moved thereby determining the parking period and therefore an appropriate cost which can be debited against the user's account. Once again the account can be a user's account with the authority operating the car park or it can be by way of payment to a credit card associated with the user's account or the user's mobile telephone account.

The embodiment of Figure 8 is somewhat similar to the embodiment of Figure 7 except it is used to track people in a building or other environment for the purposes of location, evacuation or identification.

In this embodiment each person wears a tag 170 which may include a display and which is interrogated by transmitters 155 and receivers 156 associated with the building lighting 171. Once again the lighting network is used to convey data to the transmitters 155 and receivers 56 from a central processor 180. The tag worn by each
person in the building returns a signal in response to the interrogation by the transmitter 155 and that signal is detected by the receivers 156. By knowing which of the receivers 156 received the signal the location of the person in the building can be determined.

Thus, messages can be transmitted to the person in the event that the person is to be located and people can be monitored as they move through the building. Furthermore, if it is necessary to evacuate a building the system can be used to identify if people are trapped in the building and where they are or whether all people have been evacuated safely.

The processor 180 may be connected to a monitor 190 so that data could be displayed for use by security personnel to identify and track people as they move throughout the building.

In a further embodiment tag 170 carried by each person can be used as a means of validating whether the person is entitled to be within that particular area of the building or can enter a security area or the like.

Figures 9 and 10 show an embodiment which relates to obtaining payment for use of public transport.

In this embodiment a public transport system such as trams 190 are provided with a payment processor 191 which connects with the lighting system 194 of the tram.

People using the public transport system carry a tag similar to that described with reference to the embodiment of Figure 8 which enables them to be identified when they alight a tram and enable a lack of presence to be determined when they leave the tram.
As is shown in Figures 9 and 10 the processor 191 connects to the lighting system 194 which is provided with the transmitters 155 and receivers 156 as described in the earlier embodiments. The transceivers 155 and 156 output signals to interrogate tags 201 carried by passengers. As soon as a passenger alights a tram or other mode of public transport the tag 201 is identified and a signal is supplied from the transmitter 156 to the processor 191 via the internal lighting system 194 of the tram 190. This enables a very accurate measure of the time when the passenger alights to the tram to be determined.

Similarly, when the passenger leaves the tram 190 the time of leaving can also be readily determined by virtue of the fact that interrogation from the transmitter 155 no longer results in a signal being received by the receiver 156. Thus, the length of time of the journey can be determined and charging can be made based on the time of the journey.

However, in a still further embodiment the processor 191 may be connected to a GPS system 193 so that when the passenger is first detected the exact location of the tram is determined from the GPS system 193. This enables the stop at which the person alighted the tram to be determined. Similarly, when the person leaves the tram the GPS system is able to identify at which stop the person left the tram so that the actual trip in terms of travel from point A to point B can be determined rather than simply a time measure. This may enable a more accurate method of charging to be made because the time based account may be somewhat flawed if a tram 190 is blocked in traffic or needs to remain at a particular stationary position for any particular length of time.

In a still further embodiment rather than use a GPS system an odometer measure from the tram can be used to determine the actual distance travelled thereby providing a basis
for making a charge.

The data held in the processor 191 can be downloaded each day for billing purposes or can be transmitted via a over the air communication link 192 to a central authority 195 for billing purposes.

Once again, billing may take place by debiting an actual account held by each customer or by billing a credit card belonging to the customer or in any other way.

Since modifications within the spirit and scope of the invention may readily be effected by persons skilled within the art, it is to be understood that this invention is not limited to the particular embodiment described by way of example hereinabove.

In the claims which follow and in the preceding description of the invention, except where the context requires otherwise due to express language or necessary implication, the word "comprise", or variations such as "comprises" or "comprising", is used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features in various embodiments of the invention.
Claims

1. A parking system having a plurality of bays in which vehicles are able to park, said system comprising:
   a central station;
   a detector for detecting a vehicle in one of the bays;
   a transmitter for transmitting a signal to the central station containing data identifying the bay;
   a receiver at the central station for receiving a mobile telephone call to identify a person wishing to pay for parking in the bay and the bay in which parking is to take place; and
   a processor for matching the data identifying the bay received from the transmitter and the identity of the person wishing to park in that bay for facilitating payment for parking time in the bay.

2. The system of claim 1 wherein the detector comprises a metal detector located in the ground within a bay.

3. The system of claim 1 wherein the transmitter comprises a modem for transmitting a mobile telephone call to the central station containing data identifying the bay.

4. The system of claim 1 wherein the identity of the person wishing to pay for parking in the bay comprises the mobile telephone number of the mobile telephone belonging to that person, and data identifying the person comprises the person's mobile telephone number.

5. The system of claim 1 wherein payment for parking time is made by debiting an account at the central station belonging to the person or billing a credit card or telephone account associated with the person.
6. The system of claim 1 wherein the central station also comprises a mobile telephone transmitter for transmitting an SMS message to the person's mobile telephone indicating that parking time is about to expire.

7. The system of claim 1 wherein the central station comprises a processor for receiving the data identifying the bay and the data identifying the person, and at least one database containing identification data relating to bays in which vehicles can be parked and persons subscribed to the system.

8. The system of claim 1 wherein the central station also includes a transmitter which is controlled by the processor for transmitting data to a parking officer to show bays in which vehicles are legally parked and bays in which vehicles are illegally parked.

9. A parking method using a plurality of bays in which vehicles are able to park, said method comprising:
   detecting a vehicle in one of the bays;
   transmitting a signal to a central station containing data identifying the bay;
   receiving a mobile telephone call at the central station to identify a person wishing to pay for parking in the bay and the bay in which parking is to take place; and
   matching the data identifying the bay and the identity of the person wishing to park in that bay for facilitating payment for parking time in the bay.

10. The method of claim 9 wherein the identity of the person wishing to pay for parking in the bay comprises the mobile telephone number of the mobile telephone belonging to that person, and data identifying the person comprises the person's mobile telephone number.
11. The method of claim 9 wherein payment for parking time is made by debiting an account at the central station belonging to the person or billing a credit card or telephone account associated with the person.

12. The method of claim 9 wherein the method also comprises transmitting an SMS message to the person's mobile telephone indicating that parking time is about to expire.

13. The method of claim 9 wherein the method further comprises transmitting data to a parking officer to show bays in which vehicles are legally parked and bays in which vehicles are illegally parked.

14. A system for providing purchasable articles comprising:
   - an apparatus for providing the articles;
   - a processor for receiving data relating to payment for the supply of the articles, for authorising payment and providing a signal to the apparatus so that the articles can be provided to a customer from the apparatus; and
   - whereby in response to the signal, the article is supplied to the customer from the apparatus and the customer is billed for the article.

15. The system of claim 14 wherein the processor receives the data by way of mobile telephone transmission.

16. The system of claim 14 wherein the payment is by way of a debit to the customer's mobile telephone account.

17. The system of claim 14 wherein the payment is made by way of a debit to a credit card.

18. The system of claim 14 wherein the payment is
made by way of a debit to a subscribed deposit provided on behalf of the customer.

19. The system of claim 14 wherein the apparatus is an apparatus for producing photographs from a photographic medium.

20. The system of claim 14 wherein the apparatus is a vending machine for providing an article.

21. The system of claim 20 wherein the vending machine includes an input device for receiving input from the customer to identify the number of articles or specific articles required from the vending machine and the vending machine includes a communication device for communicating data relating to the articles required to the processor so that billing can be determined and the signal supplied back to the vending machine to supply the articles to the customer.

22. A kiosk system for providing photographs, comprising:

   a photograph producing apparatus for producing photographs from a photographic medium;

   a processor for receiving data relating to payment for the production of the photographs, for authorising payment and for providing a signal to the apparatus so the production of photographs can commence; and

   whereby in response to the signal the photographs are produced from the photographic medium and supplied from the apparatus to a customer, and the customer is billed for the photographs by the processor.

23. The system of claim 22 wherein the processor is connected to the apparatus by a communication link.
24. The system of claim 22 wherein the apparatus includes a card reader for reading a card by which payment is to be made, and data relating to the card reader is transmitted to the processor by the communication link.

25. The system of claim 22 wherein a telephone call to the processor is used to provide for billing and to initiate a response from the processor to the apparatus to cause the photograph to be produced.

26. The system of claim 22 wherein the medium comprises a memory stick and the apparatus includes a slot for receiving the memory stick so that data relating to the photographs can be downloaded from the memory stick to the apparatus to produce the photographs.

27. A method of providing purchasable articles comprising:
   providing an apparatus to provide the articles;
   processing data for authorising payment;
   providing a signal to the apparatus so that the articles can be provided to a customer; and
   whereby in response to the signal, the article is supplied to the customer from the apparatus and the customer is billed for the article.

28. The method of claim 27 wherein the data is received by way of mobile telephone transmission.

29. The method of claim 27 wherein the payment is by way of a debit to the customer's mobile telephone account.

30. The method of claim 27 wherein the payment is made by way of a debit to a credit card.

31. The method of claim 27 wherein the payment is made by way of a debit to a subscribed deposit provided on
behalf of the customer.

32. The method of claim 27 wherein the apparatus is an apparatus for producing photographs from a photographic medium.

33. The method of claim 27 wherein the apparatus is a vending machine for providing an article.

34. The method of claim 27 wherein the vending machine includes an input device for receiving input from the customer to identify the number of articles or specific articles required from the vending machine and the vending machine includes a communication device for communicating data relating to the articles required to the processor so that billing can be determined and the signal supplied back to the vending machine to supply the articles to the customer.

35. A method for providing photographs, comprising:
   receiving data relating to payment for the production of the photographs, for authorising payment and for providing a signal to an apparatus so the production of photographs can commence/ and
   producing the photographs in response to the signal from the photographic medium.

36. The method of claim 35 wherein the method further comprises transmitting the data to the processor by a communication link.

37. The method of claim 35 wherein a telephone call to the processor is used to provide for billing and to initiate a response from the processor to the apparatus to cause the photograph to be produced.

38. A parking system for vehicles, comprising:
a plurality of parking bays, each parking bay
having a detector;
a receiving system for detecting the detector so
that if no vehicle is parked in the parking bay the
detector is able to output a signal receivable by the
receiving system to identify that the parking bay is free, and if a vehicle is parked in the parking bay the location
of the vehicle prevents the receiving system from
receiving the signal thereby indicating that the parking
bay is occupied;
a processor coupled to the receiver system for
processing the signals supplied by the receiver system to
identify the presence or lack of presence of a vehicle in
a parking bay; and
a display for identifying vehicle parking bays
which are unoccupied so a customer can readily discern
which bays are available for parking.

39. The system of claim 38 wherein the processor is
connected to the receiving system by the lighting system
associated with a car park in which the parking bays are
located.

40. The system of claim 38 wherein the receiving
system comprises a transmitter for transmitting a signal
for detection by the detector and a receiver for receiving
a signal from the detector in response to the signal
received from the receiver.

41. The system of claim 38 wherein the processor may
also include a billing processor for receiving information
relating to the time period in which the vehicle is parked
in the parking bay so that billing for parking time can be
calculated and billed to an account associated with the
user of the vehicle.

42. The system of claim 41 wherein the billing
processor is for receiving a mobile telephone call from
the user to identify the parking bay in which the vehicle
is parked and an account associated with the user of the
vehicle so that billing can be charged to the account
associated with the vehicle.

43. A parking method, comprising:
providing a plurality of parking bays, each
parking bay having a detector;
receiving a signal from the detector so that if
no vehicle is parked in the parking bay the detector
outputs a signal to the receiving system to identify that
the parking bay is free, and if a vehicle is parked in the
parking bay the location of the vehicle prevents receipt
of the signal thereby indicating that the parking bay is
occupied;
processing the signals supplied by the receiver
system to identify the presence or lack of presence of a
vehicle in a parking bay; and
displaying vehicle parking bays which are
unoccupied so a customer can readily discern which bays
are available for parking.

44. The method of claim 43 wherein the data is
supplied via a lighting system associated with a car park
in which the parking bays are located.

45. The method of claim 43 wherein the method
includes receiving information relating to the time period
in which the vehicle is parked in the parking bay so that
billing for parking time can be calculated and billed to
an account associated with the user of the vehicle.

46. The method of claim 43 wherein a mobile telephone
call from the user is used to identify the parking bay in
which the vehicle is parked and an account associated with
the user of the vehicle so that billing can be charged to
47. A system for identifying the location of people, comprising:
   - a plurality of tags carried by people;
   - a receiving system for detecting the tags and providing an output indicative of the location of the people;
   - a processor coupled to the receiver system for processing the signals supplied by the receiver system to identify the location of a person; and
   - a display for identifying the location of the person.

48. The system of claim 47 wherein the processor is connected to the receiving system by the lighting system associated with a car park in which the parking bays are located.

49. The system of claim 47 wherein the receiving system comprises a transmitter for transmitting a signal for detection by the detector and a receiver for receiving a signal from the tag in response to the signal received from the receiver.

50. A person locating method, comprising:
   - providing a plurality of tags to be carried by people;
   - detecting the tags to provide a signal indicative of the location of the people;
   - processing the signals to provide the location of a person; and
   - displaying the location of the person.

51. The method of claim 50 wherein signals are transmitted via the lighting system associated with a area in which the people are present.
52. A public transport payment system comprising:
a public transport vehicle;
a detector carried by the vehicle for detecting
passengers alighting the vehicle, and for determining when
passengers leave the vehicle by lack of detection of the
passengers in the vehicle; and
a processor for receiving a signal indicating the
presence of passengers on the vehicle and for determining
a charge for transport associated with a passenger for
rendering to the passenger.

53. The system of claim 52 wherein the passenger is
detected by the passenger carrying a tag which is
interrogated by a receiver system so that when the
passenger alights the vehicle the receiver system detects
the tag thereby determining that a passenger has alighted
the vehicle and when the tag is no longer detected assumes
that the passenger has left the vehicle.

54. The system of claim 52 wherein the system
includes means for determining the travel distance of the
passenger so that billing relating to distance travelled
can be determined.

55. The system of claim 54 wherein the said means
comprises a GPS system which identifies the location of
the vehicle when the passenger alights the vehicle and the
location of the vehicle when the passenger leaves the
vehicle so the distance travelled can be determined.

56. The system of claim 54 wherein the means
comprises an odometer based reading from the vehicle to
determine the distance travelled.

57. The system of claim 52 wherein the billing for
transport is based on the time between when the passenger
alighted the vehicle and left the vehicle.

58. The system of claim 52 wherein the receiving system comprises a transmitter for outputting a signal to interrogate a tag and a receiver for receiving a signal from the tag if the tag is in the vicinity of the transmitter.

59. The system of claim 52 wherein the processor is coupled to the receiver system via the internal lighting of the vehicle.

60. The system of claim 52 wherein the processor is connected to a central station via a communication link for downloading data relating to passengers who have used the vehicle and dated to enable billing for transport to be determined.

61. The system of claim 52 wherein the processor is interrogated on a daily basis to download the data and enable billing to be compiled.

62. A public transport payment method comprising: detecting passengers alighting a vehicle and determining when passengers leave the vehicle by lack of detection of the passengers in the vehicle; and processing a signal indicating the presence of passengers on the vehicle and for determining a charge for transport associated with a passenger for rendering to the passenger.

63. The method of claim 62 wherein the passenger is detected by the passenger carrying a tag which is interrogated by a receiver system so that when the passenger alights the vehicle the receiver system detects the tag thereby determining that a passenger has alighted the vehicle and when the tag is no longer detected assumes
that the passenger has left the vehicle.

64. The method of claim 62 wherein travel distance of the passenger is determined so that billing relating to distance travelled can be determined.

65. The method of claim 62 wherein the method identifies the location of the vehicle when the passenger alights the vehicle and the location of the vehicle when the passenger leaves the vehicle so the distance travelled can be determined.

66. The method of claim 62 wherein in the billing for transport is based on the time between when the passenger alighted the vehicle and left the vehicle.

67. A monitoring system for monitoring the presence of a person, comprising:
   a lighting system for illuminating an area in which a person is present;
   a receiver and transmitter associated with the lighting system for receiving and transmitting data over the lighting system;
   a central processor connected to the lighting system for controlling the transmitter and receiver so that the transmitter outputs signals to interrogate a tag carried by a person and in response to that interrogation the tag outputs a signal for detection by the receiver to identify the presence of the person; and
   whereby the location of the person is determinable by the receiver which detects the tag carried by the person.

68. The system of claim 67 wherein the system provides for monitoring the presence of a person in a building or like area for locating the person, identifying the whereabouts of the person, or evacuation purposes.
69. The system of claim 67 wherein the system is used to identify people using a public transport system to facilitate for billing for use of the public transport system.

70. A monitoring method for monitoring the presence of a person, comprising:
    illuminating an area in which a person is present by a lighting system;
    receiving and transmitting data over the lighting system, to identify the presence of a person; and
    processing the data to identify the presence of the person and the location of the person is determinable by the receiver which detects the tag carried by the person.

71. The method of claim 70 wherein the method is for monitoring the presence of a person in a building or like area for locating the person, identifying the whereabouts of the person, or evacuation purposes.

72. The method of claim 70 wherein the method is used to identify people using a public transport system to facilitate for billing for use of the public transport system.

73. A system for providing parking to a person, comprising:
    a web page accessible by a web browser system which provides information relating to available parking spaces for lease;
    a central station for receiving data supplied via the internet in response to data contained in the web page providing a request to take up an offer to lease or rent a car parking space and providing data identifying the person wishing to take up the offer; and
a receiver and processor for receiving a mobile telephone call from the person wishing to take up the offer to identify the person and allow access to the parking space.

74. The system of claim 73 wherein the receiver and processor is located at the parking space and may further comprise an actuator for opening a barrier to permit access to the parking space.

75. The system of claim 73 wherein the central station processes billing data relating to payment for the parking space and for debiting an account, credit card or telephone account associated with the person, and for processing payment to be made to the owner of the car parking space.

76. A method of providing parking to a person, comprising:

   establishing a web page accessible by a web browser system which provides information relating to available parking spaces for lease;

   receiving data supplied via the internet in response to data contained in the web page providing a request to take up an offer to lease or rent a car parking space and providing data identifying the person wishing to take up the offer; and

   receiving a mobile telephone call from the person wishing to take up the offer to identify the person and allow access to the parking space.

77. The method of claim 76 wherein the method further comprises processing billing data relating to payment for the parking space and for debiting an account, credit card or telephone account associated with the person, and for processing payment to be made to the owner of the car parking space.
78. An access system comprising:
   a receiver for receiving a mobile telephone call
to provide user identification;
   a processor for comparing the user identification
with predetermined identification data for allowing access
to the area; and
   an actuator for receiving an actuation signal to
allow a barrier to be opened so that a user can gain
access to the area.

79. The system of claim 78 wherein the access system
is for providing access to a car parking space, either in
an on-road car parking bay or in a car park station.

80. The system of claim 78 wherein the access system
is for providing access to a secured premises.

81. The system of claim 78 wherein the actuator
comprises a motor for moving the barrier between open and
closed positions and a relay for actuation to supply power
to the motor upon receipt of the signal by the actuator.

82. The system of claim 78 wherein the barrier is a
boom, door, bollard or the like.

83. The system of claim 78 wherein the actuator
comprises a solenoid for allowing a striker of a door to
move between a locked and unlocked condition and a relay
for supplying power to the solenoid upon receipt of the
signal by the relay to thereby power the solenoid.

84. An access method comprising:
   receiving a mobile telephone call to provide user
identification;
   comparing the user identification with
predetermined identification data for allowing access to
the area; and
opening a barrier so that a user can gain access to the area.

85. The method of claim 84 wherein the access method is for providing access to a car parking space, either in an on-road car parking bay or in a car park station.

86. The method of claim 84 wherein the access method is for providing access to a secured premises.
INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2006/000826

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

G07F 7/00 (2006.01)  G07B 15/04 (2006.01)  G08G 1/14 (2006.01)

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)

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)

WPAT, USPTO, EP: park, bay, vehicle, car, detect, pay, bill, transmit, receive, phone, mobile, compare, identify and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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[X] Further documents are listed in the continuation of Box C  [X] See patent family annexe

* Special categories of cited documents:
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Date of the actual completion of the international search  23 August 2006

Date of mailing of the international search report  30 AUG 2006

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### INTERNATIONAL SEARCH REPORT

**International application No.**
PCT/AU2006/000826

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END OF ANNEX