Title: MOBILE READER MACHINERY FOR THE ELECTRONIC TICKETS

Abstract: This invention is related to a reader which is mobilised by being installed to a mobile computer and a mobile phone which supports GSM or any wireless communication protocol of the HF (High Frequency) and/or UHF (Ultra High Frequency) RHD (Identification with Radio Frequency) system or by being installed to any electronic apparatus which bears the same functions and it is also related to a machinery by which the charge of the goods and service cost is collected automatically in digital environment, which are from subscriptions and subscriber's meters that are loaded in return of their cost to the HF and/or UHF tickets which are recognised by this reader. When this mobile reader machinery is used in the car parks which is one of its application fields; the time lost by the vehicle owner when making payment while entering or exiting the parking area is being prevented; it provides saving of time and personnel for its operator; it is controllable in maximum level and besides the car parks, it can be used in all of the public transportation vehicles and in centers like food-drink machines, cinemas, theatres and stadiums by providing data exchange by means of a wireless communication protocol in a wireless environment without any need for a cable network.
DESCRIPTION

MOBILE READER MACHINERY FOR THE ELECTRONIC TICKETS

Technical Area
This invention is related to a reader which is mobilised by being installed to a mobile computer and a mobile phone which supports GSM or any wireless communication protocol or by being installed to any electronic apparatus which bears the same fictions and it is also related to a machinery by which the charge of the goods and service cost is collected automatically in digital environment, which are from subscriptions and subscriber's meters that are loaded in return of their cost to the tickets which are recognized by this reader.

Former Technique
The car parks are open or closed areas where the vehicles are parked for a definite period. Nowadays, the car parks are usually located in the business and shopping centers but as the day goes on, they are spreading around the centers of population.

The car park tickets are used under the skin of the charging system applied in the existing car parks. The car park tickets which are used in the on-the road car parks, are being transfered to the car park as a revenue within the period followed by the officers manually. But because of the reason that this period is a time interval based on human being, this manual period causes many difficulties in respect of all kinds of control of the car park.

But in the parking garages and parking lots, the barier doors which are being opened or closed by the cards with magnetic strap on which the entering and exiting times are recorded, are being used besides the car park tickets while entering in or exiting from the car park. But, when this system is applied in the parking garages of the big shopping centers and in the car parks with the capacity of a large number of cars; it causes time loss because of one-to-one payment and it also creates expenses as personnel, maintenance and consumable materials.

In the systems with collapsible bariers which are used in the car park areas; the maintenances are being performed with frequent intervals and consequently, the consumable materials are always needed.
Also, the barrier systems are stable systems which have old technological structure by the reason of its
technic and equipment and it is a system which occupies a large area, which takes up time by one-to-
one payment and collection and which is in need of personnel for the operation of car park. And when
the barrier system breaks down, the transaction of following the vehicles becomes impossible and
remuneration can not be charged from them.

The car park operators in our day, can not check the number of the vehicles which use the car park, by
the existing car park systems. Besides, it is not possible for them to get the payment in advance related
to the service given by the personnel, from the users other than the ones who are the subscribers of
the car park system.

Also, there are many difficulties suffered in the cities relating to the collection of parking fee from the
vehicles parked in the open park areas. Some vehicles leave without making any payment and the
following of these vehicles can not be actualized.

A system with computer control is being referred in the American patent certificate with number
US5034739 for the parking places, garages or car parks. In this system, the plate number of the vehicle
which enters into the parking area is being recorded with a video camera and the parking charge is being
determined by reading again the plate number of the vehicle in the exit. In the parking areas where this
system is used; it is compulsory to keep the vehicle data in the terminals. Besides, the mentioned
system can only be used in the parking areas with barrier. This system do not bring any solution for the
collection of the remuneration in the parking lots and causes problems when the plate of the vehicle is
dirty and illegible.

A system which is used for operating the paid parking areas, is being referred in the International patent
certificate with number WO9930290. In this system, the parking garages which are located in different
regions and the empty areas in these parking garages and the data constituted in the direction of
determining the parking fee according to the period in which the vehicles stayed in the car park as of the
time of their entering into the parking area; are being transferred to a central system.
The system in question can be applied in the parking garages and in the parking areas where barrier
system is used. Also, there is no system in the patent certificate, that determines which vehicle stayed in
the parking area for how long.

A kind of parking card system which consists of the combination of a parking card or permission and a
payment function by means of card with a chip; is referred in the German patent certificate with number
DE19544667. In this aforementioned patent certificate, the information which includes the period in
which these vehicles stayed in the parking garages and the payment amounts, are being
displayed in the LCD screens. This system in question is being applied to the parking garages.

A Brief Explanation of the Invention
The objective of this invention is to provide the prevention of the time lost by the vehicle owner while
making payment during entering in or exiting from the car park by means of the subscriber’s meters
previously loaded in the ticket or by means of subscriptions.

Another objective of this invention is; to provide a machinery which can be used in all of the car parks
tough their operators are different; by means of the ticket which the vehicle owner keeps and/or which
is assembled on the front window of the vehicle.

Another objective of this invention is to provide the usage of the aforementioned machinery in the
parking lots and on the road car parks besides the parking garages.

Another objective of this invention is to provide the usage of the aforementioned machinery in the
centers as public transportation vehicles, refreshment machines, cinemas, theatres, stadiums etc...besides the car parks.
Detailed Explanation of the Invention

The “Mobile Reader Machinery for the Electronic Tickets” which has been developed for reaching the aim of this invention; are shown in shapes and these shapes are;

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Figure - 1 is the configuration of the application of the “Mobile Reader Machinery for the Electronic Tickets” in the parking areas.

The parts in the figure are numbered one by one and the explanations of these numbers are given below.

1. “The mobile reader machinery for the electronic tickets”
2. Mobile computer (mobile phone or any other electronic device which has the same functions)
3. Reader
4. Mobile loader
5. Stable loader
6. Ticket
7. Communication Operator
8. Remote Screen

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The subject of invention includes a reader machinery for the electronic tickets (1), at least one mobile computer kept by a personnel (2), at least one reader (3) installed to the mobile computer (2) and at least one mobile loader (4), the stable loaders which are located in the loading points and which actualize the, transaction of loading subscriber’s meters and subscription (5), at least one ticket which is assembled to the vehicle or which is kept by the driver (6), at least one communication operator (7) which provides the mobile communication and at least one remote screen (8) which is under control of the controller.

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This invention is being used by assembling the reader (3), mobile loader and stable loader (4, 5) in the mobile reader machinery for the electronic tickets (1); into the SD socket of the mobile computer (2)
The reader (3) which is used by assembling to the mobile computer (2) is directed onto the ticket (6) by the personnel or the ticket (6) is directed towards the reader (3) in order to provide the read of the ticket (6) by the reader (3).

In one application of the invention, the mobile reader machinery for the electronic tickets (1) is being used in the parking areas. HF (High frequency) and/or UHF (Ultra high frequency) ticket (6) which is covered by a special material is being immobilised to the vehicle by means of a assembling kit. This ticket (6) is not only used as assembled on the vehicle but also can be carried by the user. This ticket (6) is used by being matched with the plate of the vehicle and consequently, its usage by another user can be prevented by this way.

In the mobile reader machinery for the electronic tickets (1) which is used in the parking areas; a reader (3) is being assembled preferably to the SD socket of the mobile computers (2) and/or mobile phones, which consists of HF and/or UHF reader modul. The reader (3) is assembled on the entering and exiting doors of the car park or is being kept by the car park officer. The data related to the subscriber's meters and the decrease of subscriber meters which are obtained from the tickets (6) by the reader (3); are being transferred to the remote screen (8) which is under control of the controller by means of the communication operator (7). The remote screen (8) is located in a data processing center which is far from the mobile computer (2). And by this way, control is being provided from one center by means of automation.

When the holder of the ticket (6) parks his vehicle to the parking area, the ticket (6) is read by the reader (3). The reader (3) should be directed to the ticket (6) by the personnel or the ticket (6) is directed towards the reader (3) in order to provide the read of the ticket (6) by the reader (3). Meantime, the parking hour of the vehicle is being recorded in the ticket (6) and the reader (3) is automatically charging the remuneration from the ticket (6) which had been determined as minimum period.
Subscriber’s meter decreasing data is being transferred instantly to the remote screen (8) by means of GSM or any other communication operator (7) which can provide wireless communication.

After the vehicle owner comes back to get his vehicle, the car park personnel will again make the ticket (6) read by the reader (3) and by this way, the parking hour and the system hour are being compared. If the period between the parking hour and the system hour exceeds the determined minimum parking period; the parking fee which is over the minimum hour parking fee is being decreased from the ticket (6). But in the situations when the remaining period does not exceed the minimum parking period; no remuneration is dedicated from the ticket (6) and so the vehicle is leaving the parking area.

The readers (3) which are used in the car parks by the personnel or which are assembled to the appropriate places in the parking area are transferring the decrease information of the subscriber’s meters to the data processing center where the remote screen (8) is located, by means of the communication operator (7). The data relating to the subscriber’s meters which is being transferred to the data processing center, are being loaded to database. Financial and reporting transactions relating to the car parks are being performed by using the information loaded to the database. By this means, the daily, monthly and yearly reportings of the car parks which owns mobile reader machinery for the electronic tickets (1); are being performed rapidly and by the ratio of high accuracy.

Beside collecting remuneration from the tickets (6) by means of the readers (3) in the parking areas where the mobile machinery for the electronic tickets (1) is used; also the transaction of loading subscriber’s meter can be performed by means of the mobile loader (4) which can be connected to the mobile computer (2). If the data reader (3), mobile loader (4) and the stable loader are damaged while loading subscriber’s meter, these apparatus are being kept and protected in a way to prevent them from being lost. Also, the mobile loader (4) and the stable loader (5) keep the subscriber’s meter costs in storage with an inalterable password during the loading transactions.
Tariffs, opening- closing and user informations and lost card informations of each car park and other informations are being transferred to the previously identified readers by the remote screen (8) by means of the communication operator (7). On the other hand, the information related to the loaded subscriber's meter, the information related to the vehicles which have obtained car park service and the information related to all of the other transactions, are being transferred to the remote screen (8) from the reader (3). Besides, the informations as subscriber's meter decreasing data are being transferred to the remote screen (8) by means of the communication operator (7) and daily tracking and data statistics applications are performed. And besides this, the control of the spent and sold subscriber's meter, is performed.

A detailed database is being constituted with the mobile reader machinery for the electronic tickets (1), which carries the information relating to which vehicle had been parked in which car parks and on which dates and in which hours and with how long periods. All of these parking informations of the vehicles can be used in highway regulation and planning and also the new regulations and improvements can be actualized by means of the reports that will be created from the data obtained.

By means of the mobile reader machinery for the electronic tickets (1); the vehicle owners will not lose time for making payments by the help of the subscriptions and/or subscriber's meters they had bought before and they can also benefit from all of the car parks which uses mobile reader machinery for the electronic tickets (1). On the other hand, payment of the remuneration will be able to kept under control in the parking areas where the mobile reader machinery for the electronic tickets (1) is used because of the reason that there will be no money collection. And the vehicle owner or the user may either load the subscriber's meters to their ticket (6) from the stable loaders (5) which are located in the loading points or they can also load their tickets from the mobile loaders (4) by an automatic payment instruction. The collection period can be kept under control by matching it with the data in the remote screen (8) by means of the mobile reader machinery for the electronic tickets (1).
When the payments which will be made for the subscriber’s meters and the subscriptions that will be loaded to the ticket (6) previously, are made by an automatic payment order; the ticket gains validity by the transfer of data from the remote screen (8) to the readers (3) in the parking area and when the subscriber’s meter and/or subscription data are loaded to the ticket (6) by the reader (3) - mobile loader (4) automatically in the first car park where the user entered in.

By means of the subscriptions and subscriber’s meters which are loaded previously to the ticket (6); the car park operators obtain their incomes before they provide the service and the subscriber’s meters loaded to the tickets (6) provides an available cash opportunity for the car park operators.

In the mobile reader machinery for the electronic tickets (1) which is the subject of the invention, the car park tariffs relating to the parking fees that will be collected from the users according to the locations of the parking areas, are being defined to the reader devices (3) and the remunerations are being decreased from the ticket (6) according to the locations of the car parks. Also, the tariff changes applied in the car park areas are being transferred to the remote screen (8) from the data processing center and is instantly changed by the communication operator (7).

Besides the car park remunerations are easily being collected from the ticket (6) on the vehicle by means of the reader (3); the doors of the car parks which also have barrier and turnstile system can automatically be opened by the vehicle owner or by the user by making the ticket (6) read to the readers, by means of its mobile feature.

Besides the tickets (6) can be used as assembled to the vehicles; it also enlarges the usage fields of the mobile reader machinery for the electronic tickets (1) by its mobile feature which enables the users and the vehicle owners carry these tickets (6) with themselves.

Besides the car parks which are the application field of this invention; also the payments for the public transportation vehicles, cinemas, theatres, concerts, stadiums, gymnasiunms, food-drink machines and for the similar fields, will also be made by the mobile reader machinery for the electronic tickets (1).
In order to provide better understanding of the mobile reader machinery for the electronic tickets (1) which is the subject of the invention; it has been explained by examples and showed by the figures. But, the content of the invention can not be limited by these examples and figures. It is possible for a person who is specialized in technic to actualize other applications within the frame of basic principles of this invention. Substantially, the content of this invention is as explained in the demands section.
REQUESTS

1. A mobile reader machinery for the electronic tickets (1) which may be characterized by
   at least one mobile computer (2), at least one reader (3) assembled to the mobile computer (2) and a
   mobile loader (4), a stable loader (5) which actualize the transaction of loading subscriber’s meters and
   subscription, a communication operator (7) which will transfer the data come from the readers (3) to the
   remote screen (8), at least one ticket (6) which contains a remote screen (8) which is under the control of
   remote controller and which is assembled to the vehicle or carried by the user and which can actualize
   transactions as subscription, payment and loading on the subscriber’s meters, when it is approached to
   the reader (3).

2. A mobile reader machinery for the electronic tickets (1) which is characterized in Request 1 as a
   reader (3) which decreases the remuneration from the subscriber’s meters amount contained in the ticket
   (6) when the ticket (6) is applied on it or when it is approached to the ticket.

3. A mobile reader machinery for the electronic tickets (1) as described in one of the above mentioned
   requests in which it is characterized as a remote screen (8) which keeps the data in the readers (3) under
   record, which check the loaded and consumed subscriber’s meters and which makes reportings related to
   these data when required.

4. A mobile reader machinery for the electronic tickets (1) as described in one of the above mentioned
   requests in which it is characterized as a mobile computer (2) which instantly transfers to and/or which
   instantly receives from the remote screen (8), the data related to subscriber’s meter, subscription, tariff
   informations and the data related to all of the transactions performed.
5. A mobile reader machinery for the electronic tickets (1) as described in one of the above mentioned requests in which it is characterized as a ticket (6) which is used in the public transportation vehicles, cinemas, theatres, concerts, stadiums, gymnasiums, food – drink machines and in the similar fields.

6. A mobile reader machinery for the electronic tickets (1) as described in either 1 or 4 of the above mentioned requests which is characterized as a ticket (6) which is used for collecting the remuneration by being approached to the reader (3) assembled in the entering and exiting doors of the carparks where barrier and turnstile is used.

7. A mobile reader machinery for the electronic tickets (1) as described in one of the above mentioned requests and which is characterized as a mobile loader (4) and / or a stable loader (5) which loads the subscriber’s meter and subscription data when it is approached to the ticket (6) or when it is applied on the ticket (6).

8. A mobile reader machinery for the electronic tickets (1) as described in Request 6 and which is characterized as a ticket (6) which is matched with the plates of the vehicles.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

INV. G07B15/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G07B G07C G08G

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 practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X Further documents are listed in the continuation of Box C.  
X See patent family annex.

* Special categories of cited documents:
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* E earlier document but published on or after the international filing date
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Date of the actual completion of the international search: 6 August 2009

Date of mailing of the international search report: 17/08/2009

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentiluca 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax. (+31-73) 340-3016

Authorized officer: Miltgen, Eric
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