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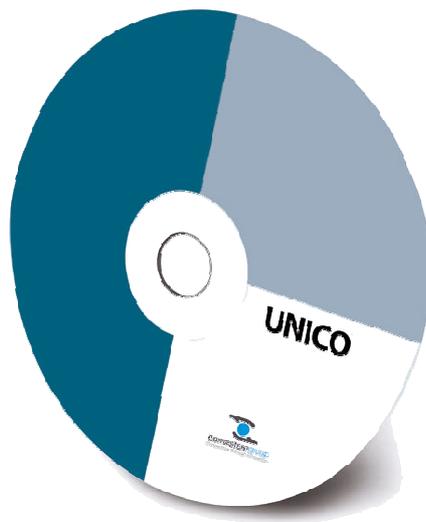
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UNICO

Software for Mifare cashless systems

EN



User Guide

DMOCW0001.1EN

Rev. 1.1 09/09/2013



GUIDE TO THE SYMBOLS IN THE MANUAL

The following symbols are used in this manual in order to facilitate its understanding.



Important information



Read carefully before use



Warning!

Dear Customer,

*Thank you for choosing **our** product; by following the instructions contained in this manual carefully you will be able to appreciate and be satisfied by its quality.*

Please read the operation and maintenance instructions carefully, in compliance with the safety provisions, before using the machine and store this manual for future reference.

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1. Introduction

This instructions and its annexes provide all the necessary information for a correct installation of the product and all its components, as well as for its correct use. The information contained in this manual can be modified without prior notice and do not constitute a commitment on behalf of A.u.S. Spielgeraete GmbH.

The latest version of the manual is always available online (www.aus.at). The information contained in this manual has been collected and verified with the utmost care; however, A.u.S. Spielgeraete has no liability arising from its use. Unless otherwise stated, any reference to companies, names, dates, and addresses is purely coincidental and has the sole purpose to illustrate the use of the product. The reproduction of any part of this manual without prior authorisation is prohibited.

2. Warnings



Read this manual carefully before use.

Knowledge of the information and instructions contained in this manual is fundamental to use the product correctly. Check upon receipt that the package and the product have not been damaged during transport.

3. Service



In the event of an anomaly or malfunction, contact A.u.S. After-Sales Service at: +43 (0)1 271 66 00.

4. Presentation of Unico software

This guide introduces the user to use of the principal functions of RFT Unico Software. In order to simplify and speed up configurations of multiple machines, the software in question may be purchased and installed on multiple PCs without having to request additional licences; this makes configuration quick and easy for the user.

The software allows you to set and program the following devices:

- Timer
- UHHT
- Meisaku
- Full
- WorldKey
- WorldKey Lite



To use the software correctly you must be connected to the device to be configured.

5. Main window

When the program starts, the user will see the screen shown below. It is easy to identify the various work groups, grouped by theme in the interface, which seems to be divided in two (above - below) and horizontally divided into multiple utility groups.

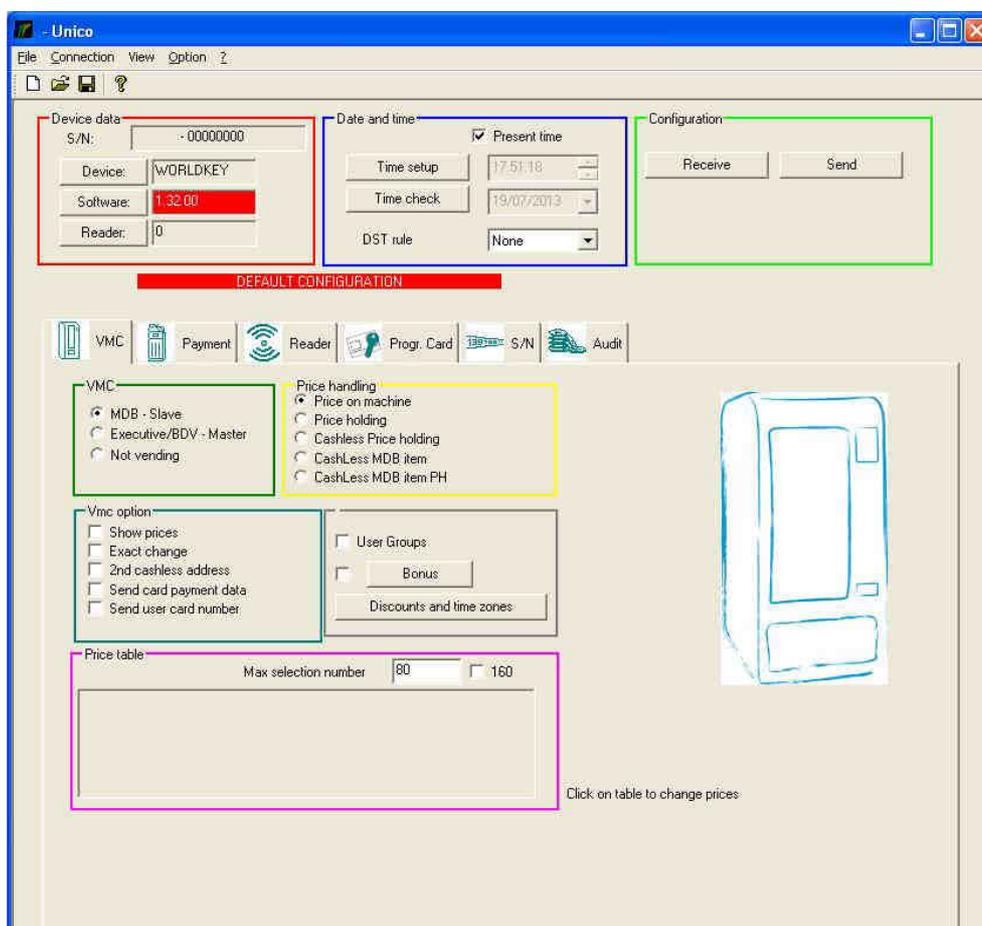


Figure 1

5.1 Standard toolbar and utilities

The toolbar includes commands for standard actions. We will now look at the items requiring explanation, setting aside commands which are intuitive or have already been explained elsewhere.

- **File:** setting aside the most intuitive and common commands, let us take a look at the “export” command, accessible as shown in the image below. The items concerned are:

- **EVA-DTS:** exports Audit data in EVA-DTS format
- **Audit:** exports all Audit data collected to a printable file

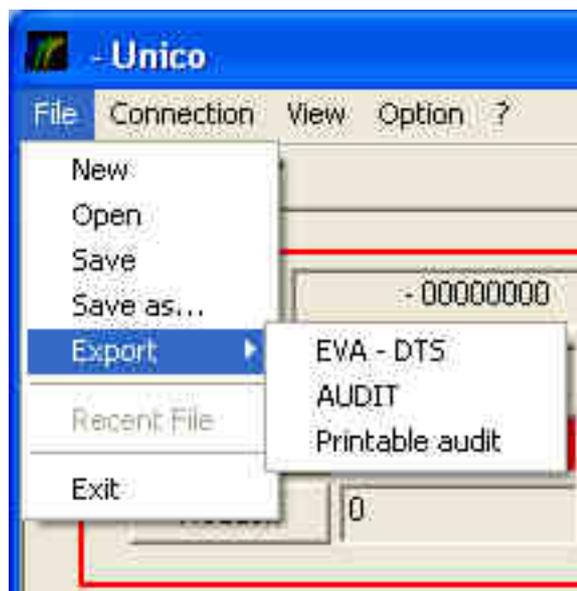


Figure 2

In the following will be described the **connection** menu (you can see in the next page), already explained in other parts of this guide. Let us take a closer look at the following commands:

- **Preferences...:** once a device has been connected, the predefined COM port is automatically selected. For some devices, you can also make a LAN connection or connect with an external network by setting the appropriate IP.
- **Reset:** this command resets all the settings programmed in the reader. To access this function you must enter the administrator code.
- **Reset PSWD:** a more complete operation than the previous one, used to reset all the information on the reader after entering an unlocking code. This operation will completely reset reader programming.
- **EVADTS UHHT:** this operation may be used to send the UHHT VMC programming data in EVA-DTS format.
- **Read ProgramKey - ProgramKey:** These are advanced functions for reading and editing key/card access settings. They allow you to “open” cards to third party applications.
- **Messages:** general diagnostics messages

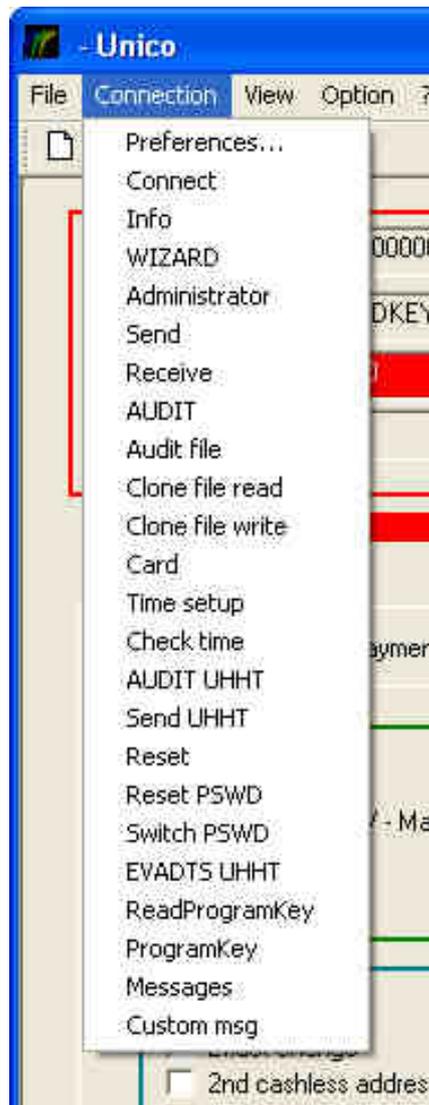


Figure 3

5.2 Upper part

- Device data:** this space contains information on the device connected or the device for which data is being analysed. *(There is no meaningful data in the example shown above, as it is not connected with any device).* We can identify:
 - S/N:** electronic serial number entered in the device, followed by firmware CHK
 - Device:** name of the device linked with the pc at the time *(see introduction for information on supported devices)*
 - Software:** the firmware version loaded on the device *(version is also physically visible on the connected device; it is understood that if the firmware is updated, the version physically shown will be different from the one appearing in this box)*
 - Reader:** number identifying the device
- Date and time:** space for setting the date and time. The "Present time" box is normally automatically flagged; this means that settings will be the same as those of the pc you are

working on. The date and time can however be changed manually. There is an option for daylight savings time.

- **Configuration:** box for receiving and saving information on the connected device. The “Receive” button is used to receive machine settings, viewed in what we have referred to as the “lower part” of the screen (see subsequent paragraphs). In order to receive them you must enter the Administrator, Location and Access level codes; in the same way, once the necessary changes have been made, after pressing “Send” (equivalent to saving the changes made, which this command writes on the connected device), you must enter the security codes again.

Administrator Code: 9-character code identifying a single operator and permitting identification of all the machines managed by this operator in all the companies in which he or she works.

Location: 4-character code identifying a single company managed by the operator.

Access level: 4-character code identifying each single machine in companies managed by the operator.

To sum up, codes not only univocally identify an individual device, easily recognisable via the associated code, but allow you to create a **network of permissions to use** individual machines belonging to a particular company. The keys used to access the machines will thus be identified by a code which in itself sums up all the identifications mentioned above. There will in any case always be an Administrator code and a Location code; if the Access level code is set to 0 (the default value for all three code levels) the user will be allowed to use all machines present in the company. If, on the other hand, you wish to create company optimisation flows, program the keys to access a limited number of specific devices; in this case the last part of the key code will contain only the access codes of those machines the user is allowed to access.

5.3 Lower part

This part of the screen lists all possible software functions for correct device configuration. At the start the “default configuration” will appear, which may be edited as necessary.

- **VMC:** vending machine configuration area
- **Payment:** coin mechanism configuration
- **Reader:** reader configuration
- **Prog. Card:** programming media (keys or cards, as required)
- **S/N:** configuration of the list of keys and record of transactions
- **Audit:** sales statistics section

6. VMC Configuration

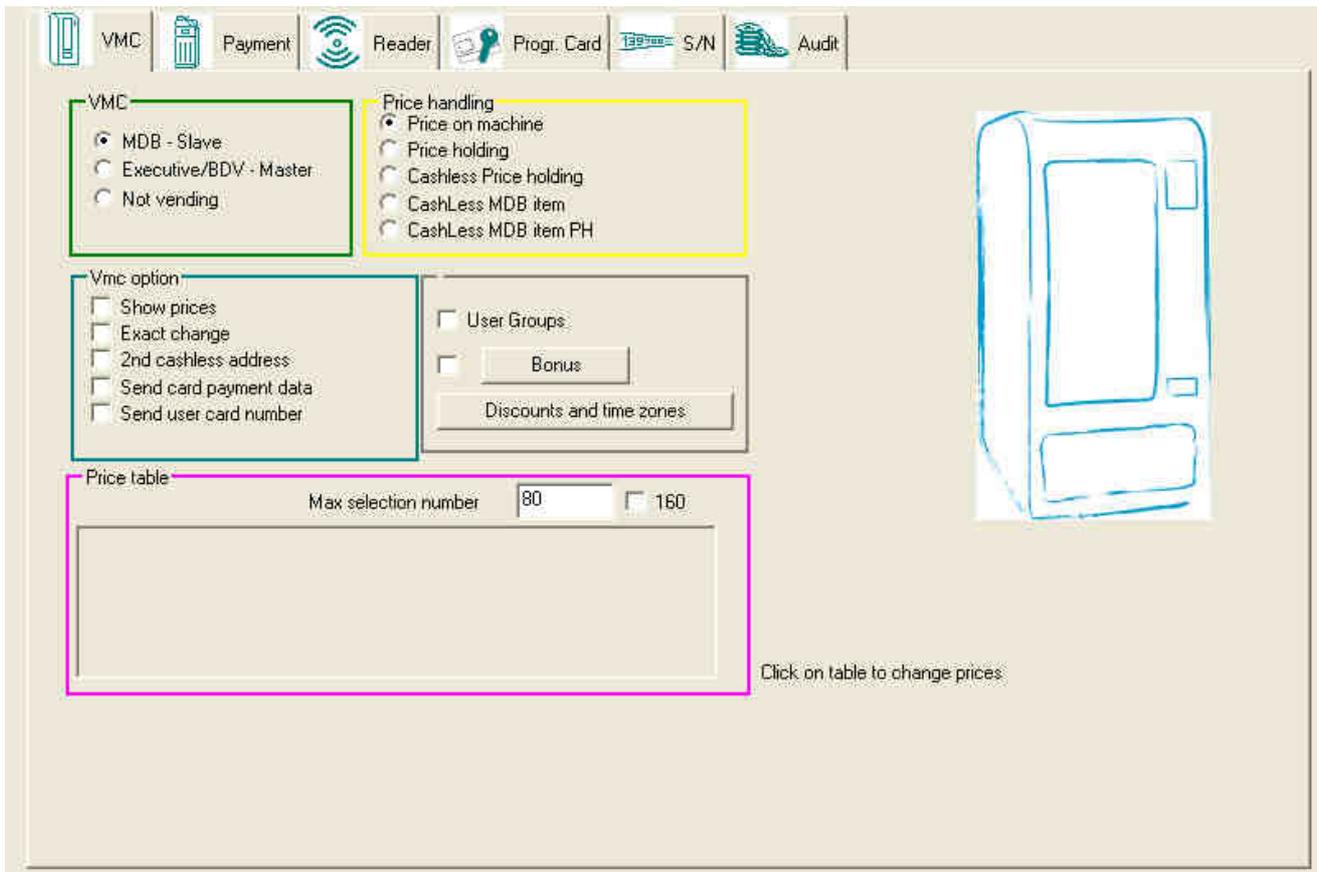


Figure 4

When you have connected to the device, its default settings will appear in the sections in the lower part of the screen. Let's start by looking at the Vending Machine configuration label. Content is organised in blocks by theme, to make intervention by users easier.

6.1 VMC

Here you can set machine configuration protocols for price management. The first two flags (MDB - Slave and Executive/BDV - Master) are two standard connection protocols, already preset; the number of settings to be selected in the yellow box on the right depends on your choice. If you need to use the machine as a simple research station or do not have functions directly associated with the vending market, you will need to set it to "Not Vending".

6.2 Price handling

In the Price handling box, you may choose the following options, as required:

"Prices on machine": in this case it is the machine that sends price requests to the device installed; this is clear in that if it is selected, the pink box for the price table will be reset, as prices cannot be selected from the device.

“Price holding”: the opposite function to the one described above, meaning that the device holds the sale prices and automatically subtracts them from credit.

“Cashless Price holding”: hybrid of the previous two functions. In this case prices are set both on the machine and on the device, for more convenient management of accounting.

“CashLess MDB item”: if this function is used the vending machine holds the prices, but at the same time it sends the product code to the key system to permit accounting for sales.

“CashLess MDB item PH”: a function similar to the one described above, with the difference that in this case, the prices of products are decide by the key system, not by the vending machine.

6.3 VMC options

This box is used for setting options.

“User Groups”: this utility may be used to set up a maximum of three different groups in which to classify different categories of users for different prices, bonuses or discounts. If you select this option, three columns for the groups available will appear in the pink box at the bottom of the screen, so that you can set up the groups, also from the “price table” box, associating them with the desired categories.

“Show prices”: function for the Executive-BDV communications protocol with the VMC. Defines the option whether or not the device sends the cash price for the desired selection to the machine’s display.

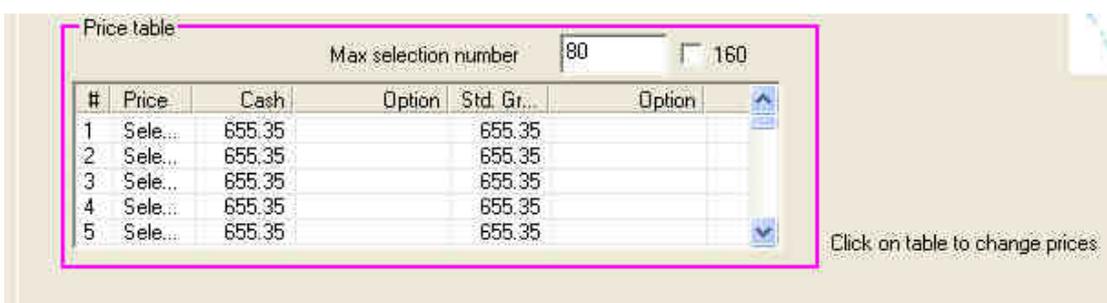
“Exact change”: this option instructs the machine to show the word “exact change” on the display.

“Send card payment data”: the card data are sent to the vending machine, so that the card can manage special conditions such as discounts or other differences in service

“Send user card number”: the MDB protocol sends the user number rather than the serial number of the key/card.

6.4 Price table

This box is active with all items except flagging on “Prices in machine”. If this is not the case, it will show a table (shown below) which you can interact with by simply clicking on it, as stated on the right of the table.



Price table

Max selection number 160

#	Price	Cash	Option	Std. Gr.	Option
1	Sele...	655.35		655.35	
2	Sele...	655.35		655.35	
3	Sele...	655.35		655.35	
4	Sele...	655.35		655.35	
5	Sele...	655.35		655.35	

Click on table to change prices

Figure 5

After clicking, the screen in the next page will appear if the “user group” option is not flagged in the blue box.

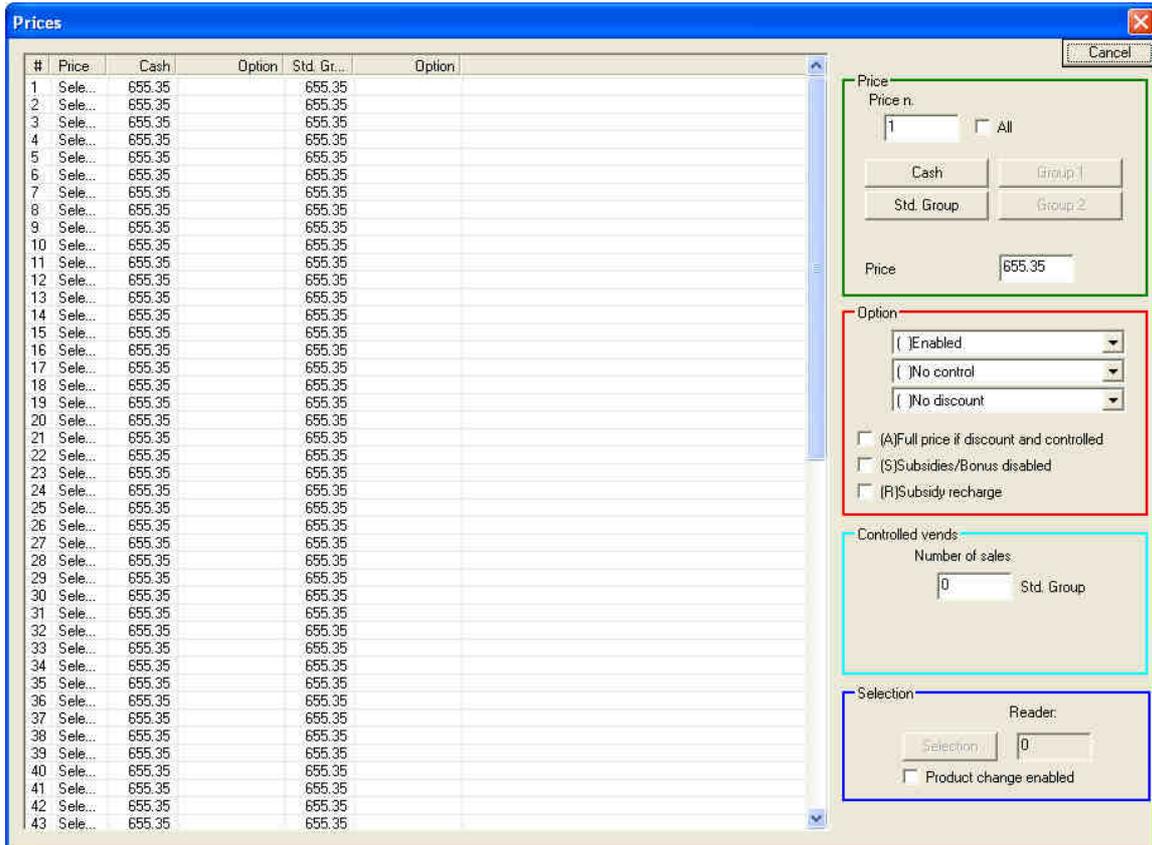


Figure 6

If the “User Groups” option is selected in the VMC option’s grey box, the screen shown below will appear:

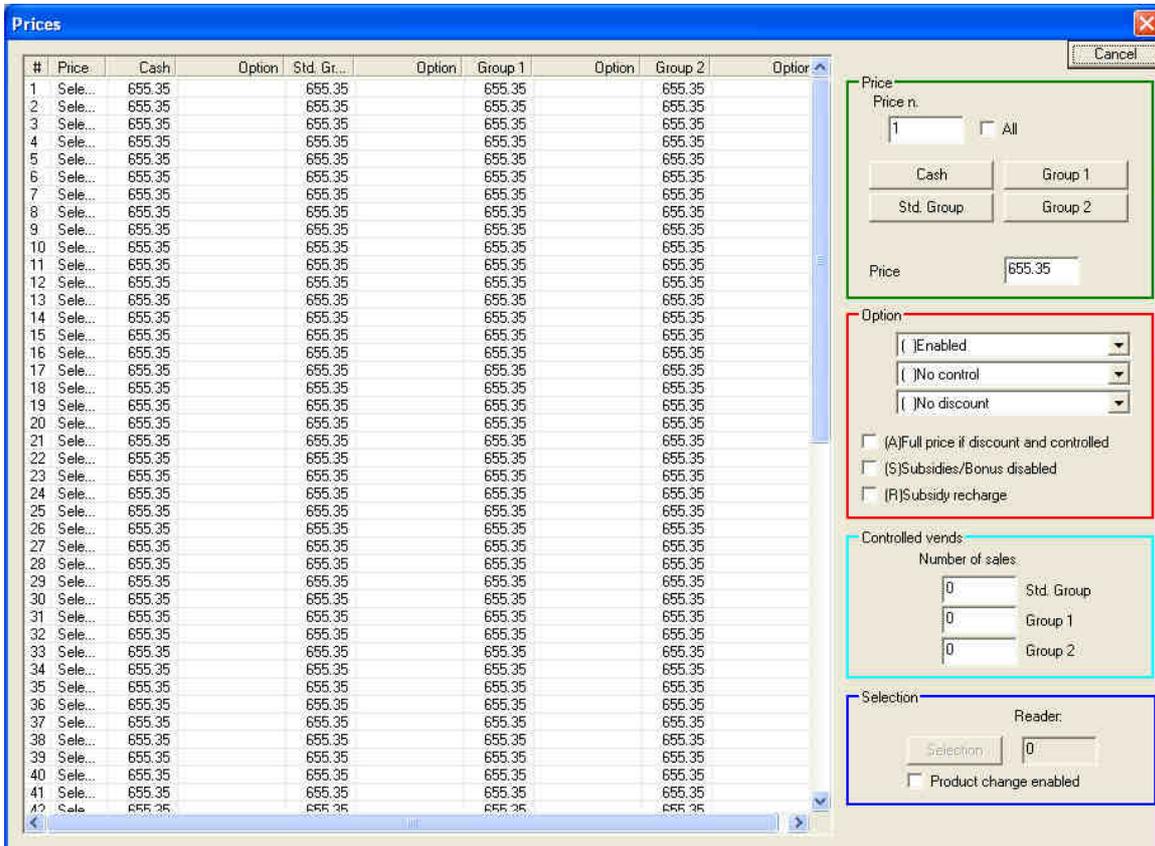
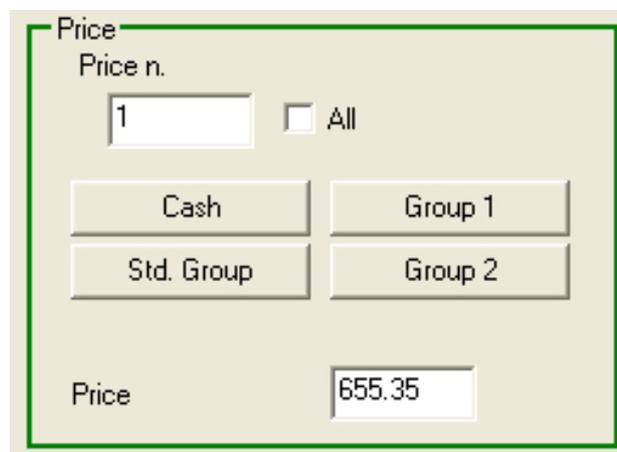


Figure 7

The most noticeable differences are in the table column. As explained above, this difference permits creation of special groups of users who can access different purchasing conditions. Interaction with column content is intuitive and may be performed directly on the data to be edited. The boxes on the right may be identified as follows:

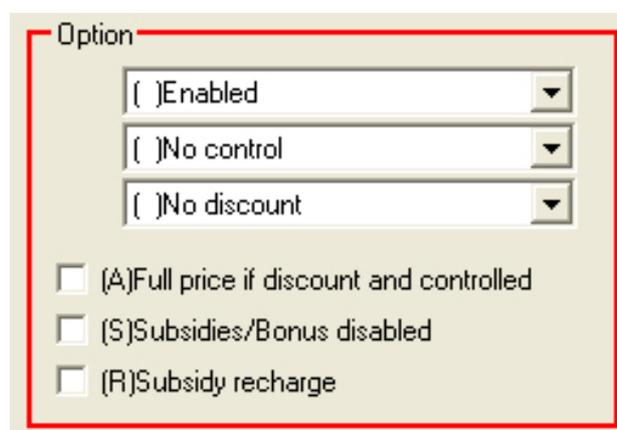
- **Price:** in this box you may set the prices of the available selections. The first selection is highlighted in the first image in the columns, and in fact the number "1" appears in the box in question. The corresponding price appears below; to change the price, all you need to do is insert it in this position. To assign it to the desired category, simply click on the appropriate item in the box (cash, Std. Group, Group 1 or Group 2). The choice of categories may be single or multiple, depending on the price to be assigned. If, for example, we want to give all selections the same value, all we need to do is flag the item "All" next to the price space. In this way we attribute the same value to the whole category.



The screenshot shows a dialog box titled "Price". It contains a "Price n." field with the value "1" and an unchecked checkbox labeled "All". Below these are four buttons: "Cash", "Group 1", "Std. Group", and "Group 2". At the bottom, there is a "Price" field with the value "655.35".

Figure 8

- **Option:** in this space you can manage all options for the prices associated with the selections and categories of the selected groups. You may intuitively select options in the drop-down menus and in the flags below, depending on the combinations you wish to perform.



The screenshot shows a dialog box titled "Option". It contains three drop-down menus, each with a checkbox to its left: "() Enabled", "() No control", and "() No discount". Below these are three checkboxes: "(A) Full price if discount and controlled", "(S) Subsidies/Bonus disabled", and "(R) Subsidy recharge".

Figure 9

- **Controlled vends:** depending on whether or not you selected the “group management” option, this box will contain either one or three data entry spaces. **“Std. Group”** is the group that always appears, the default group that differs from cash (or, to put it simply: it identifies the person making a purchase with a cashless device); here we may therefore establish a limit on the number of products that each category (except people paying cash) may purchase. In this mode, referred to as “controlled sales”, we can therefore associate different quantities with each group of cashless users.

The screenshot shows a window titled "Controlled vends". Inside, there is a label "Number of sales" followed by three vertically stacked input fields. The first field is labeled "Std. Group" and contains the number "0". The second field is labeled "Group 1" and contains the number "0". The third field is labeled "Group 2" and contains the number "0".

Figure 10

- **Selection:** this box is enabled only if you flag the item **“Product change enabled”**. If you have selected this option, you will be able to open a small window by clicking on the **“Selection”** button; here you will be able to enter the number of the sample machine from which to clone product price settings.

The screenshot shows a window titled "Selection". It features a "Reader:" label above an input field containing the number "0". Below this is a button labeled "Selection". At the bottom, there is a checkbox that is checked, followed by the text "Product change enabled".

Figure 11

6.4.1 Price setting example:

The **“(A) Full Price if discount and controlled”** function is a variant of Controlled Vending which requires that, on reaching the set Controlled Vending (“Quantity”) number, further vending of the product is blocked.

Whereas by setting the function **“(A) Full Price if discount and controlled”**, when the set Controlled Vending number is reached, the device does not block the selection and the product can be sold, but at full price instead of the discounted one.

In the example below, the price of Selection 1 during the three allowed transactions is 0.35 €, discounted by 20%. When the set limit of three has been reached, the device does not block the product from being dispensed but vending is at full price (i.e. 0.35 €).

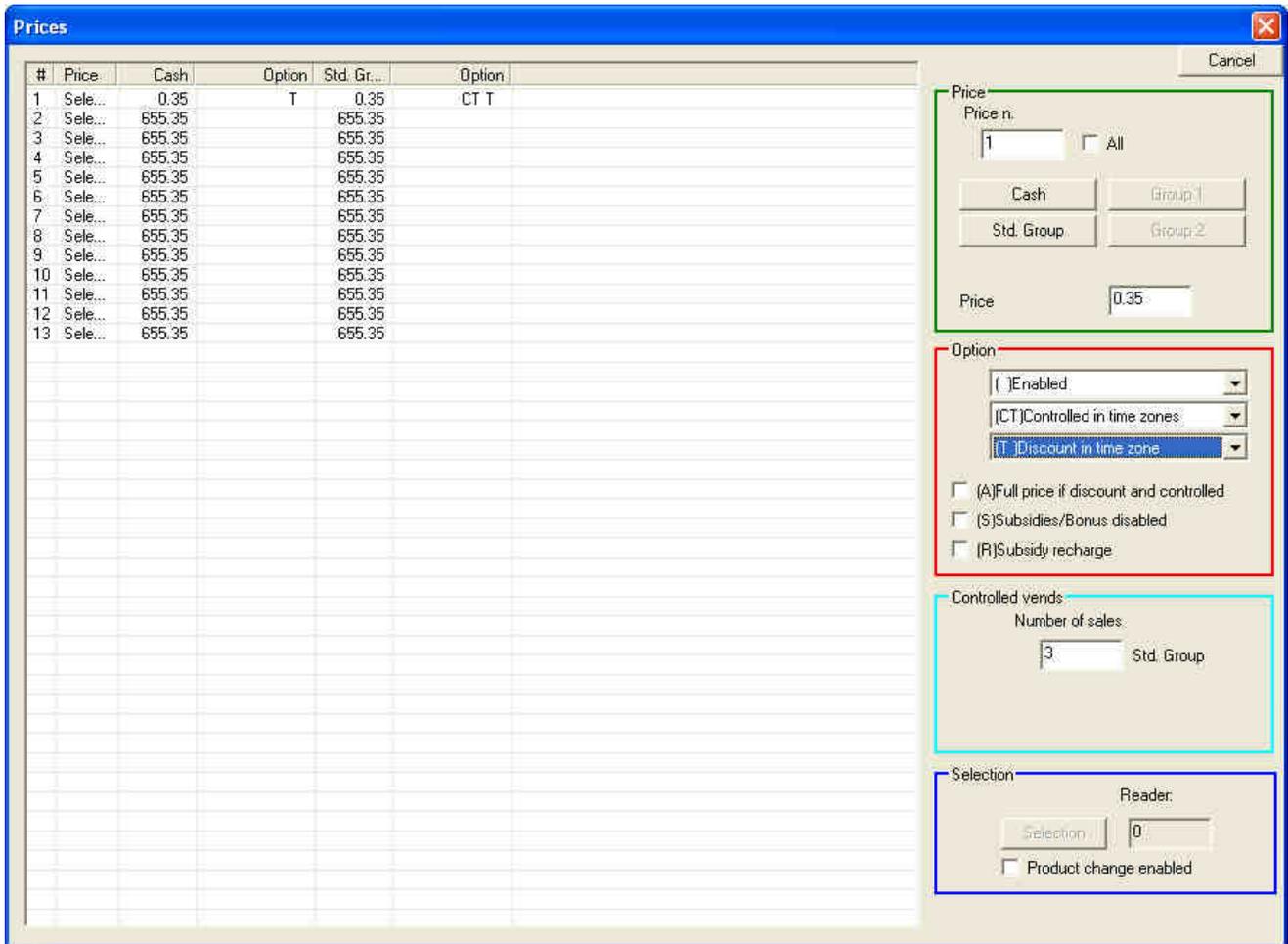


Figure 12

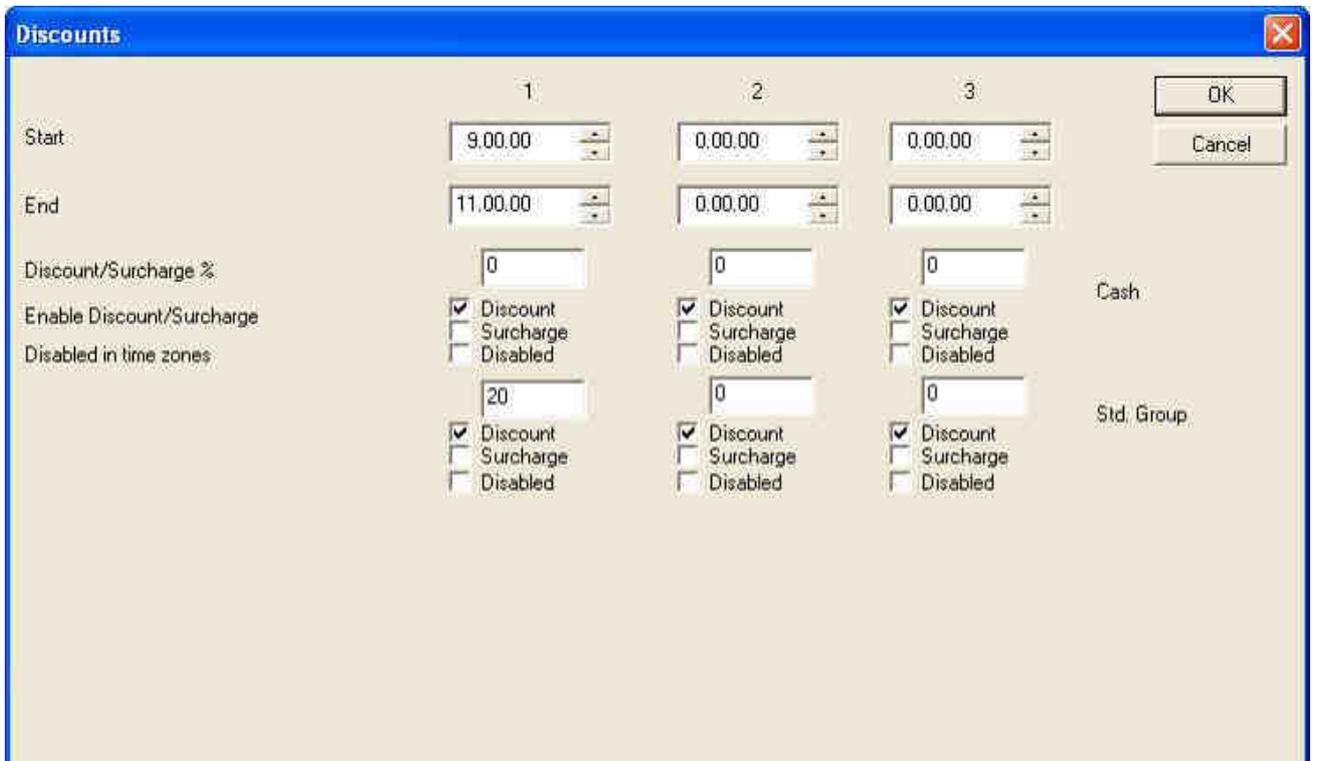


Figure 13

6.5 Bonuses and subsidies

By clicking on “**Bonus**” in the main screen (the grey box on the right of the green “VMC” box), the following interface opens, useful to set bonuses and subsidies.

Sales qualifying for Bonus			Points qualifying for bonus		Bonus value		Recharge		Refund of deposit	
	%				Bonus sale	Only total				
Daily	<input type="checkbox"/>	0.00	100	<input type="checkbox"/>	0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	<input type="checkbox"/>	0.00	100	<input type="checkbox"/>	0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly/Not limited	<input type="checkbox"/>	0.00	100	<input type="checkbox"/>	0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Enable	Recharge	Value	Max	Max in day	Only in time zone	Cumulative	Re-Set
<input type="checkbox"/> Daily	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly	0.00	0.00	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Bonus
<input type="checkbox"/> Monthly	0.00	0.00	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Subsidy multivend							

Figure 14

In the pink “**Bonus card**” box in the “**Reloading threshold**” field, the credit threshold is set, reached when the bonus is credited. The percentage you wish to dispense as a bonus is inserted in the “**Recharge %**” field. You can choose whether the bonus is cumulative or not.

In the yellow “**Bonus**” box , you can choose the frequency of the bonus (daily, weekly or monthly/Not limited) and how the bonus is granted: Sales qualifying (relative to the total value of products purchased) or Points qualifying for bonus (relative to the number of products purchased). You can therefore define whether this bonus should be credited immediately or after reaching a target.

In the blue “**Subsidies**” box, you can set a different type of bonus defined as a subsidy. The user is credited an amount (set under the item “**Recharge**”) which can be used in value blocks (set in the “**Value**” field). Subsidies used can be limited to certain time zones (“**Only in time zone**”), they can be managed in cumulative mode (“**Cumulative**”) or reset (“**Re-Set**”) at the end of the set frequency (Daily, Weekly, Monthly).

Daily, Weekly and Monthly subsidies can even be multiple, i.e. they can be associated to individual keys on which the relevant privilege is set.

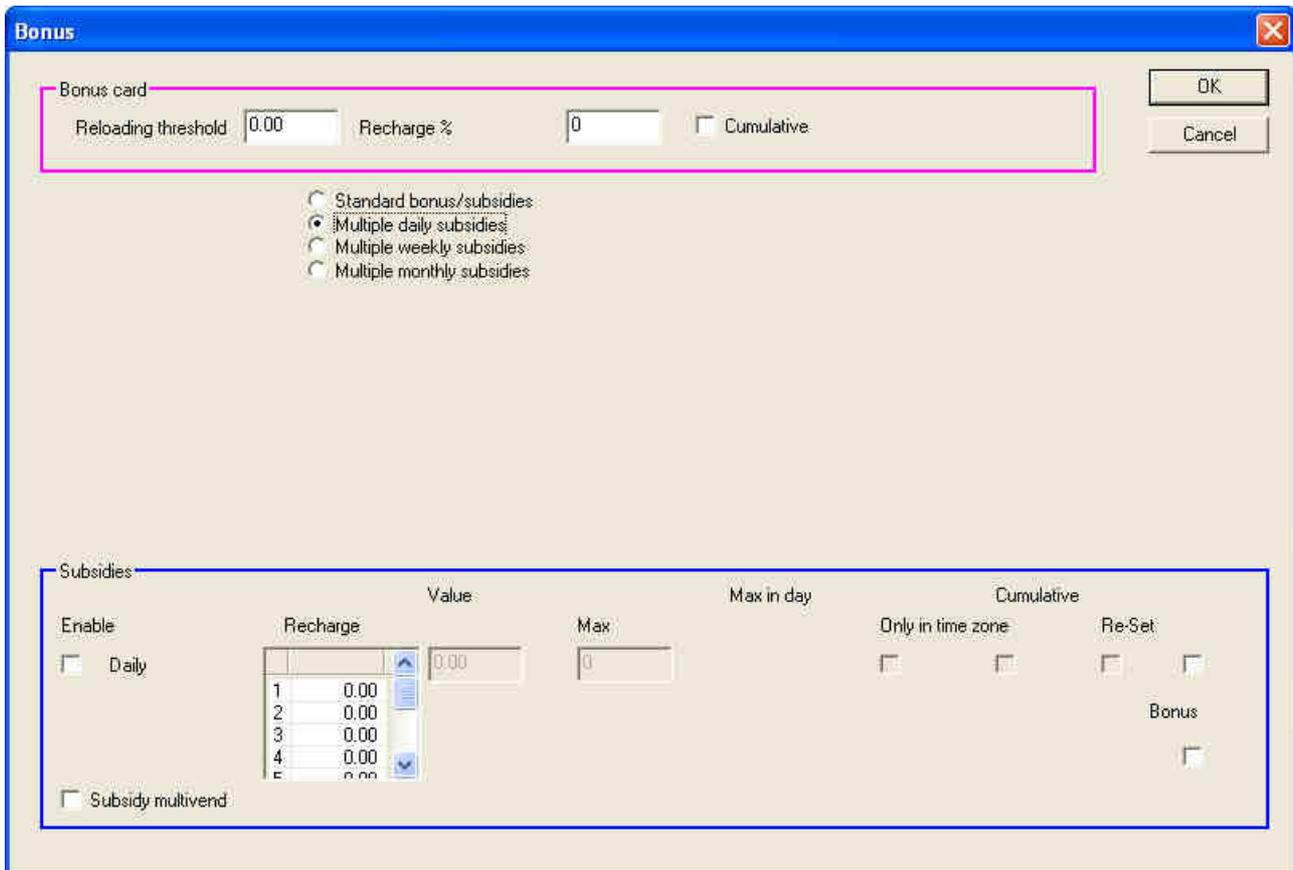


Figure 15

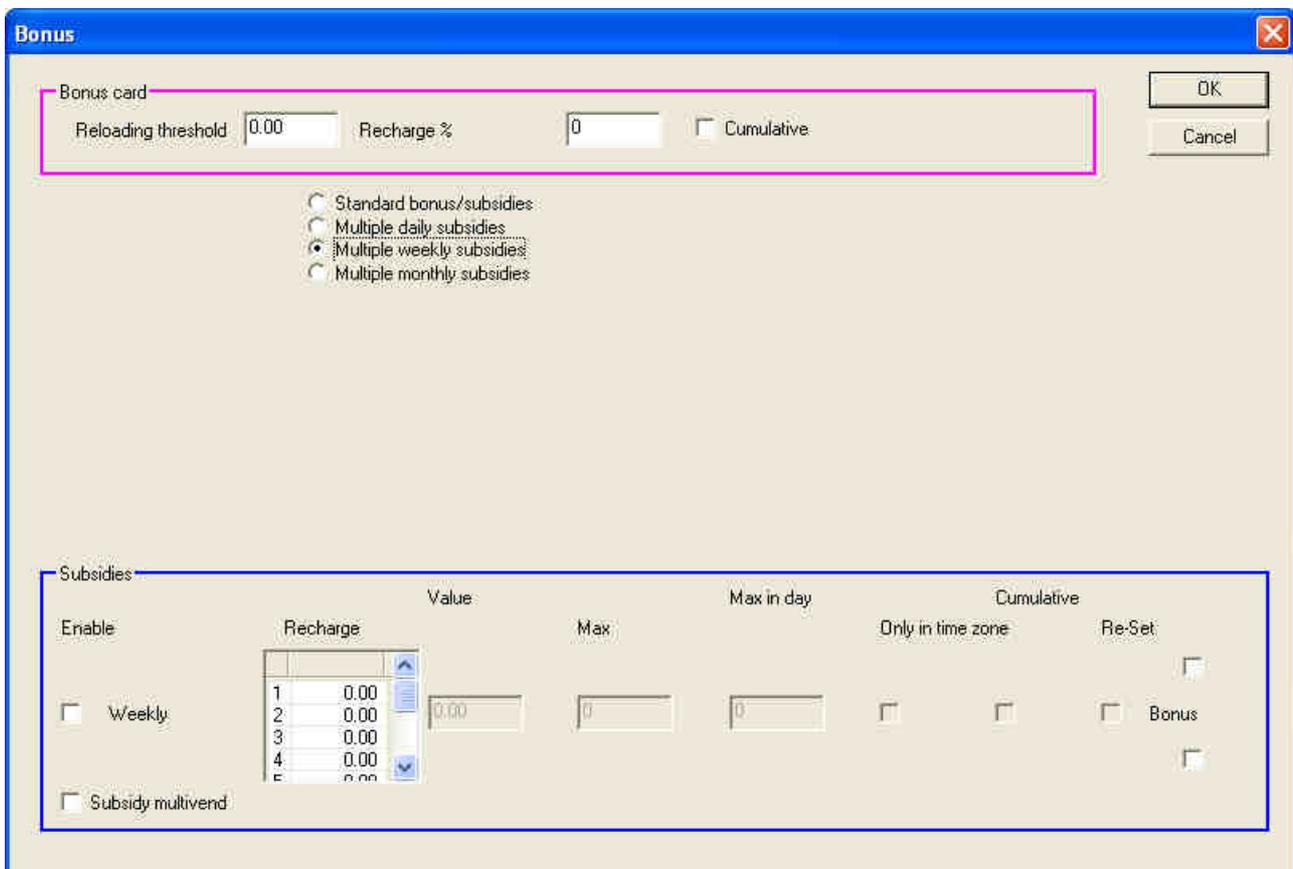


Figure 16

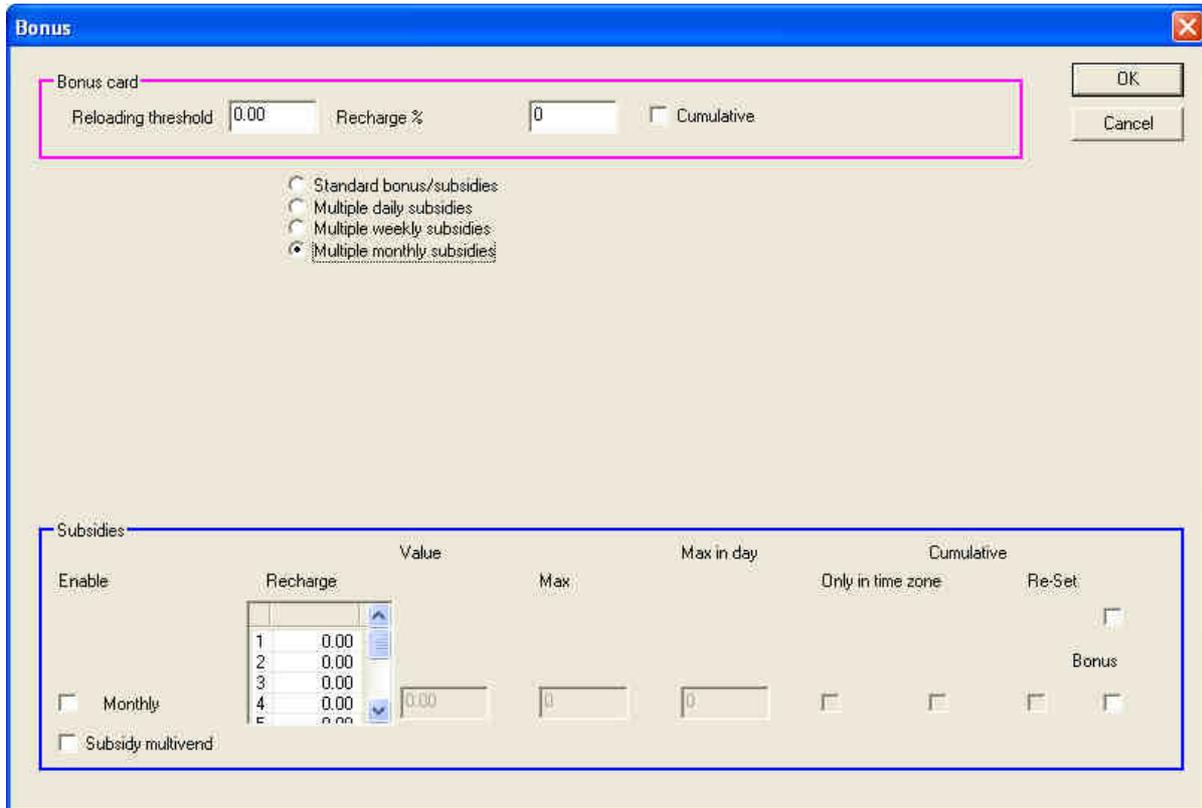


Figure 17

6.5.1 Examples of bonus and subsidy setting

(all examples are set on a daily frequency but are also valid for weekly and monthly frequencies)

6.5.1.1 Bonus

- **Daily credit bonus:** credited when the key/card is introduced for the first time during the day. In this case, the 0.50 € bonus (“**Recharge**”) will be written on the key/card after it is introduced for the first time that day in the device.

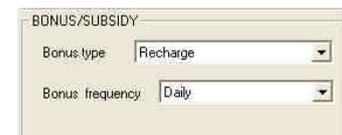
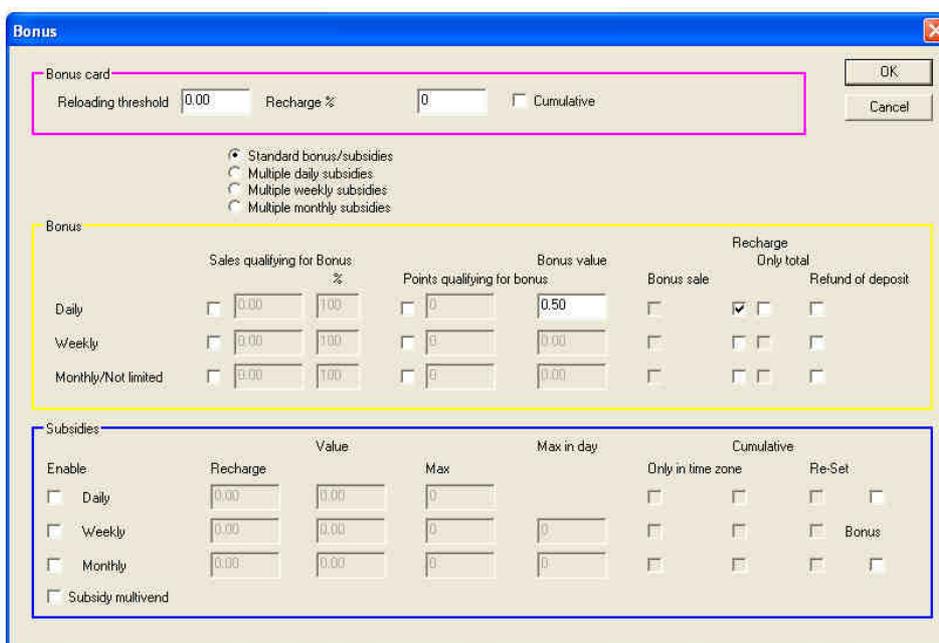


Figure 18

- **Sales qualifying for Bonus “Recharge”:** credited upon reaching a pre-set amount (“**Reloading threshold**”). In this case a 0.50 € bonus is recharged (“**Recharge**”) against total purchases of 1.00 € (“**Sales qualifying for Bonus**”) by the user.

The credit threshold is reached by adding a percentage applied to the prices of the selected items. In the example below, the percentage equals 100%. By selecting the following items: 0.30 € (Selection 1), 0.40 € (Selection 2), 0.30 € (Selection 3), the system stores and adds the actual values of the selections (0.30+0.40+0.30).

Had the set percentage been 50%, the system would have stored and added half of the actual values of the selections (0.15+0.20+0.15....) until the set threshold was reached.

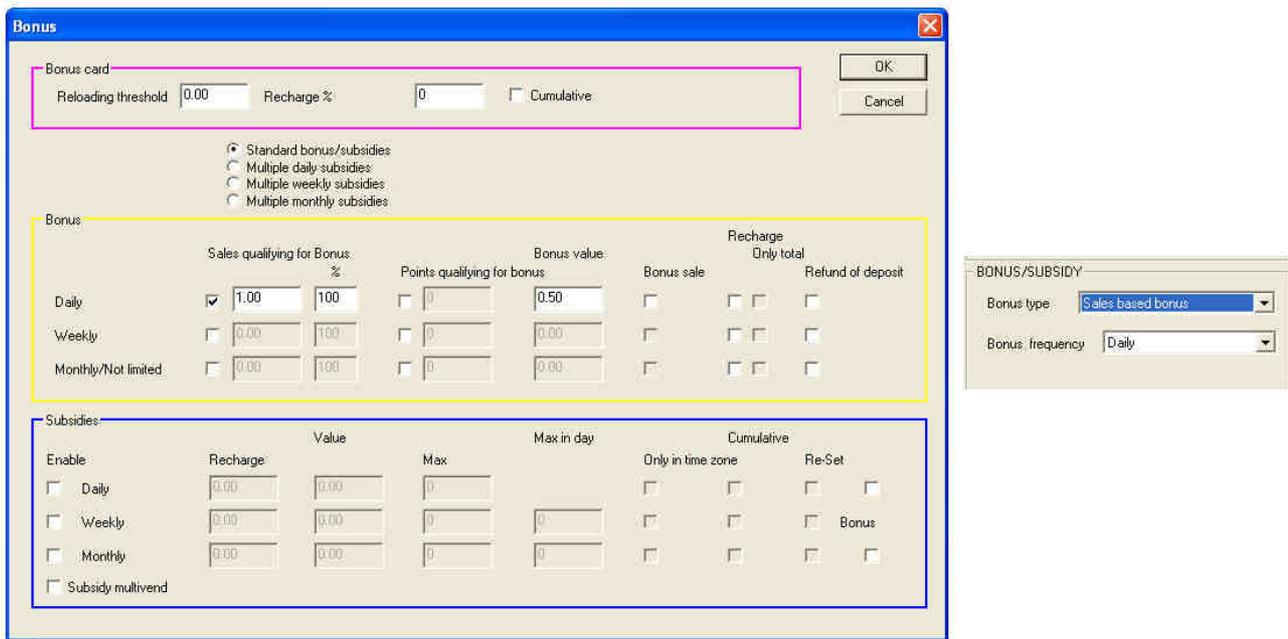


Figure 19

- **Point Accumulation Bonus “Recharge”:** credited upon reaching a pre-set number of sales. In this case, a 0.50 € bonus (“**Points qualifying for bonus**”) is recharged against a number of 10 purchases (“**Bonus value**”) reached by the customer.

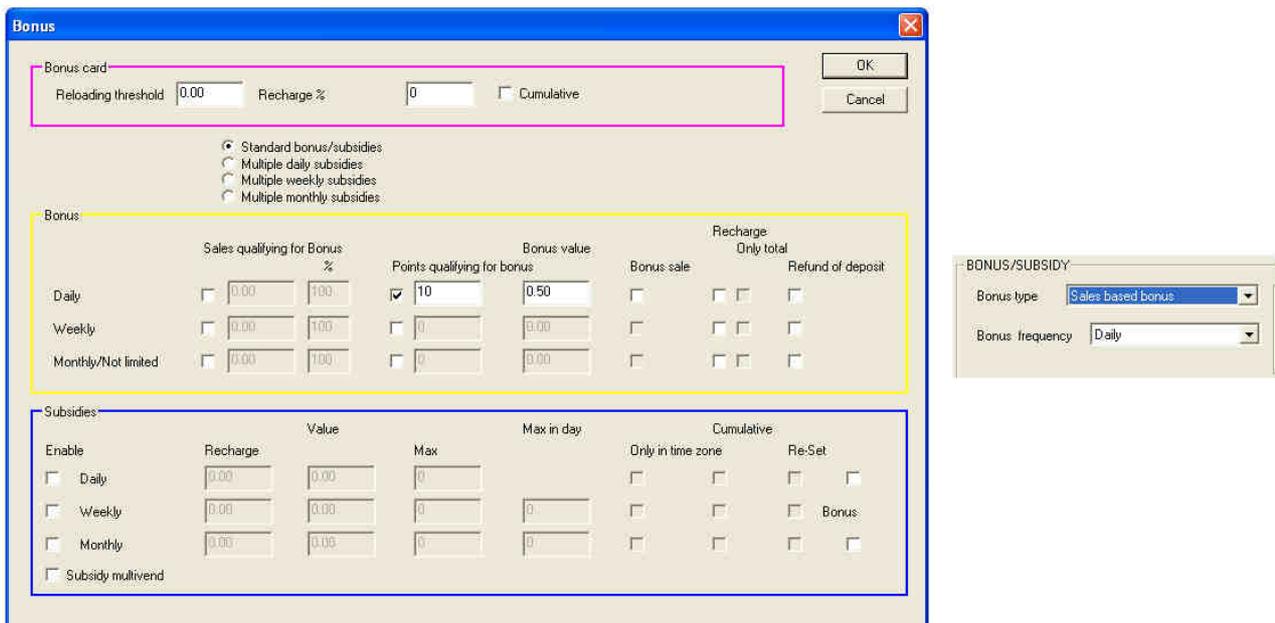


Figure 20

- **Credit Accumulation Bonus “Sale”**: credited upon reaching a pre-set amount (“**Reloading Threshold**”).

In this case, against total purchases of 1.00 € (“**Sales qualifying for Bonus**”), the user will be awarded one free sale. The credit threshold is reached after summing a percentage applied to the prices of the selections made. In the example below, the percentage equals 100%. If the user selects the following items: 0.30€ (Selection 1), 0.40 € (Selection 2), 0.30 € (Selection 3), the device stores and adds the actual values of selections (0.30+0.40+0.30). Had the set percentage been 50%, the system would have stored and added half of the actual values of selections (0.15+0.20+0.15.....) until the set threshold was reached.

The screenshot shows the 'Bonus' configuration window. The 'Bonus card' section is highlighted with a pink box, showing 'Reloading threshold' set to 0.00, 'Recharge %' set to 0, and 'Cumulative' checked. The 'Standard bonus/subsidies' radio button is selected. The 'Bonus' section is highlighted with a yellow box and contains a table with the following data:

	Sales qualifying for Bonus %	Points qualifying for bonus	Bonus value	Bonus sale	Recharge Only total	Refund of deposit
Daily	<input checked="" type="checkbox"/> 1.00 100	<input type="checkbox"/> 0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	<input type="checkbox"/> 0.00 100	<input type="checkbox"/> 0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly/Not limited	<input type="checkbox"/> 0.00 100	<input type="checkbox"/> 0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 'Subsidies' section is highlighted with a blue box and contains a table with the following data:

Enable	Recharge	Value	Max	Max in day	Only in time zone	Cumulative	Re-Set
<input type="checkbox"/> Daily	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Bonus
<input type="checkbox"/> Monthly	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 'Subsidy multivend' checkbox is also present and unchecked.

The screenshot shows the 'BONUS/SUBSIDY' configuration window. The 'Bonus type' dropdown is set to 'Sales based bonus sale' and the 'Bonus frequency' dropdown is set to 'Daily'.

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Figure 21

- **Point Accumulation Bonus “Sale”**: credited upon reaching a pre-set number of sales. In the following example, the user is gifted one purchase, against 10 purchases (“**Points qualifying for bonus**”).

The screenshot shows the 'Bonus' configuration window. The 'Standard bonus/subsidies' radio button is selected. The 'Bonus' section is highlighted with a yellow box and contains a table with the following data:

	Sales qualifying for Bonus %	Points qualifying for bonus	Bonus value	Bonus sale	Recharge Only total	Refund of deposit
Daily	<input type="checkbox"/> 0.00 100	<input checked="" type="checkbox"/> 10	0.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	<input type="checkbox"/> 0.00 100	<input type="checkbox"/> 0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly/Not limited	<input type="checkbox"/> 0.00 100	<input type="checkbox"/> 0	0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 'Subsidies' section is highlighted with a blue box and contains a table with the following data:

Enable	Recharge	Value	Max	Max in day	Only in time zone	Cumulative	Re-Set
<input type="checkbox"/> Daily	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Bonus
<input type="checkbox"/> Monthly	0.00	0.00	0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 'Subsidy multivend' checkbox is also present and unchecked.

The screenshot shows the 'BONUS/SUBSIDY' configuration window. The 'Bonus type' dropdown is set to 'Points based bonus sale' and the 'Bonus frequency' dropdown is set to 'Daily'.

Figure 22



The bonus isn't cumulative: if the bonus threshold is not reached within the pre-set time, the calculation to reach the bonus will start again from the beginning. If you do not wish this reset, there is the option to set "Not limited" frequency on the key/card.

6.5.1.2 Subsidies

- **Type 1 Subsidy:** in this type of bonus the amount is credited (“**Recharge**”) automatically upon inserting the key/card. This amount is used by the user in blocks of maximum pre-set values (“**Value**”) for a maximum number of selections (0 in the “**Max**” field means unlimited). In the example below the bonus issued equals 1.60 €. A maximum amount of 0.40 € can be used for each purchase until the credit is exhausted.

The following is an example of how the issued bonus is consumed during vending:

Select. 1 price: 0.30 €- Subsidy block used: 0.30 €- User Credit used: 0.00 €
 Select. 2 price: 0.70 €- Subsidy block used: 0.40 €- User Credit used: 0.30 €
 Select. 3 price: 0.50 €- Subsidy block used: 0.40 €- User Credit used: 0.10 €
 Select. 4 price: 0.70 €- Subsidy block used: 0.40 €- User Credit used: 0.30 €
 Select. 5 price: 0.30 €- Subsidy block used: 0.10 €- User Credit used: 0.20 €
 Select. 6 price: 0.70 €- Subsidy block used: 0.00 €- User Credit used: 0.70 €

Figure 23

- **Type 2 Subsidy:** in this type of bonus the amount is not credited (“**Recharge**”) automatically upon inserting the key/card, but after one or more specific selections. In the example below the 1.00 € subsidy (“**Recharge**”) is credited only after selection 13 is made (the “**R**” shown in the “**Option**” column means “**Subsidy Recharge**”) and may be used only for selection 1. In fact in all other selections the subsidy is disabled (the “**S**” in the “**Options**” column means “**Disable subsidy /bonus**”).

Figure 24

Figure 25

The bonuses described above may also be managed in a **“multiple”** mode, where different amounts can be automatically credited (**“Recharge”**), based on key/card settings.

In the example below the bonuses credited are follows:

- 1.00 € for the keys set with Bonus Type: Subsidy;
- 1.50 € for the keys set with Bonus Type: Subsidy2;
- 2.00 € for the keys set with Bonus Type: Subsidy3;

0.50 € (maximum) can be used from this amount for each purchase until the credit is exhausted.

EN

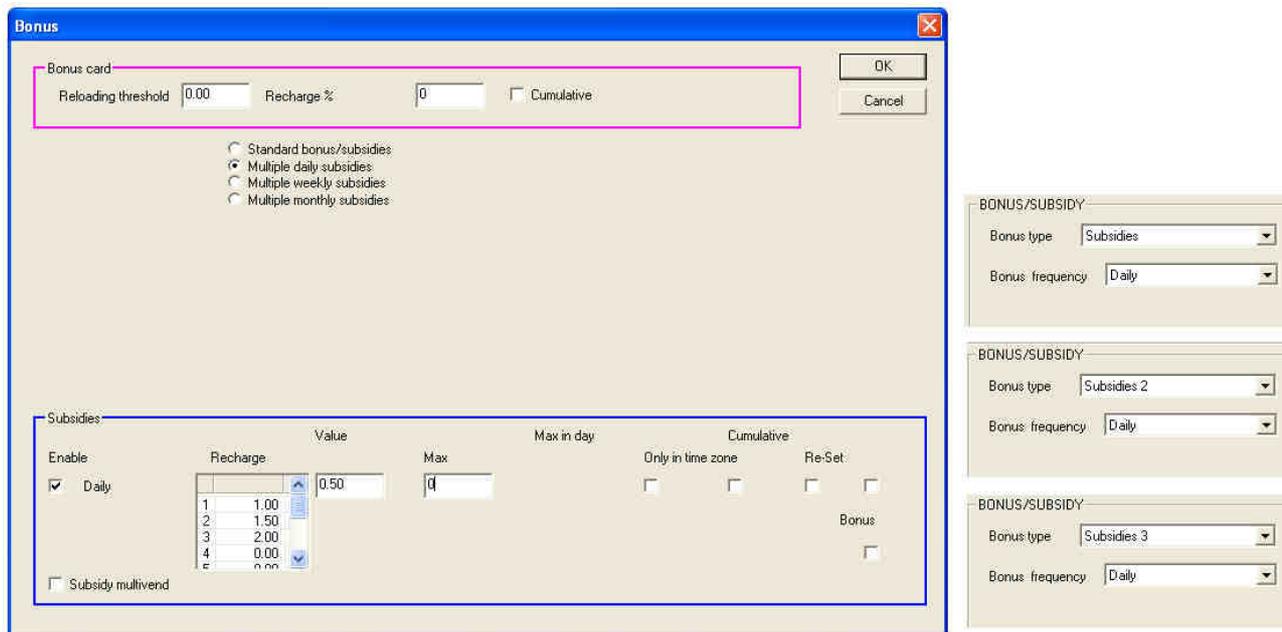


Figure 26



Audit Management for Bonuses and Subsidies

At the time the bonus is granted, it is immediately converted into "real" credit, as if the user had actually inserted money. The bonus is therefore immediately accounted as SUBSIDY. The subsidy, on the other hand, remains "virtual" until it is used. Only then will it be counted as DISCOUNT.

6.6 Discounts and time zones

Clicking on the key **"Discounts and time zones"** will bring up the following screen. Three different time ranges are present (**"Start"** and **"End"**) to be set for each cash and keys category (**"Std Group"**, **"Group 1"** and **"Group 2"**). Either a discount or a surcharge can be set.

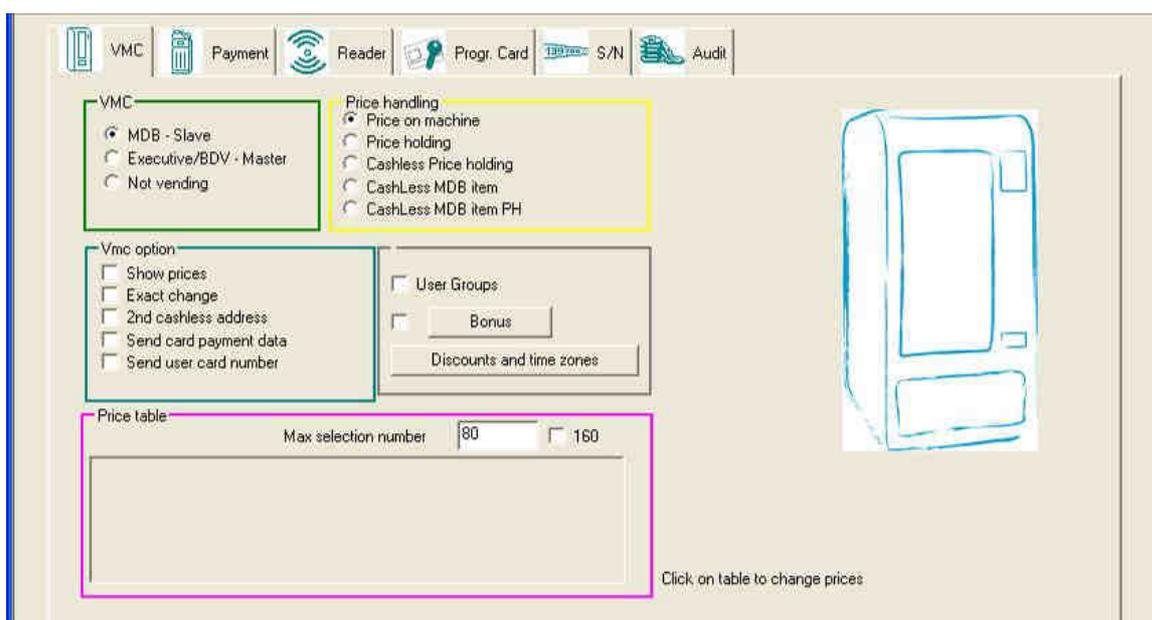


Figure 27

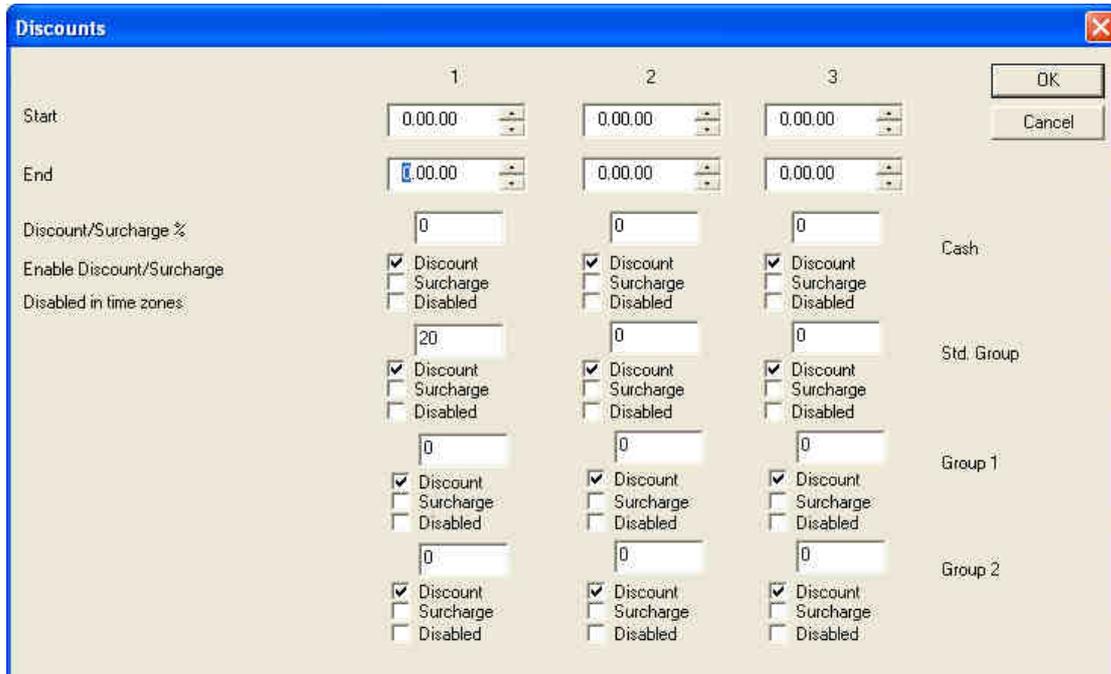


Figure 28

7. Configuration of peripheral devices

In this section we will see how to configure peripheral devices.

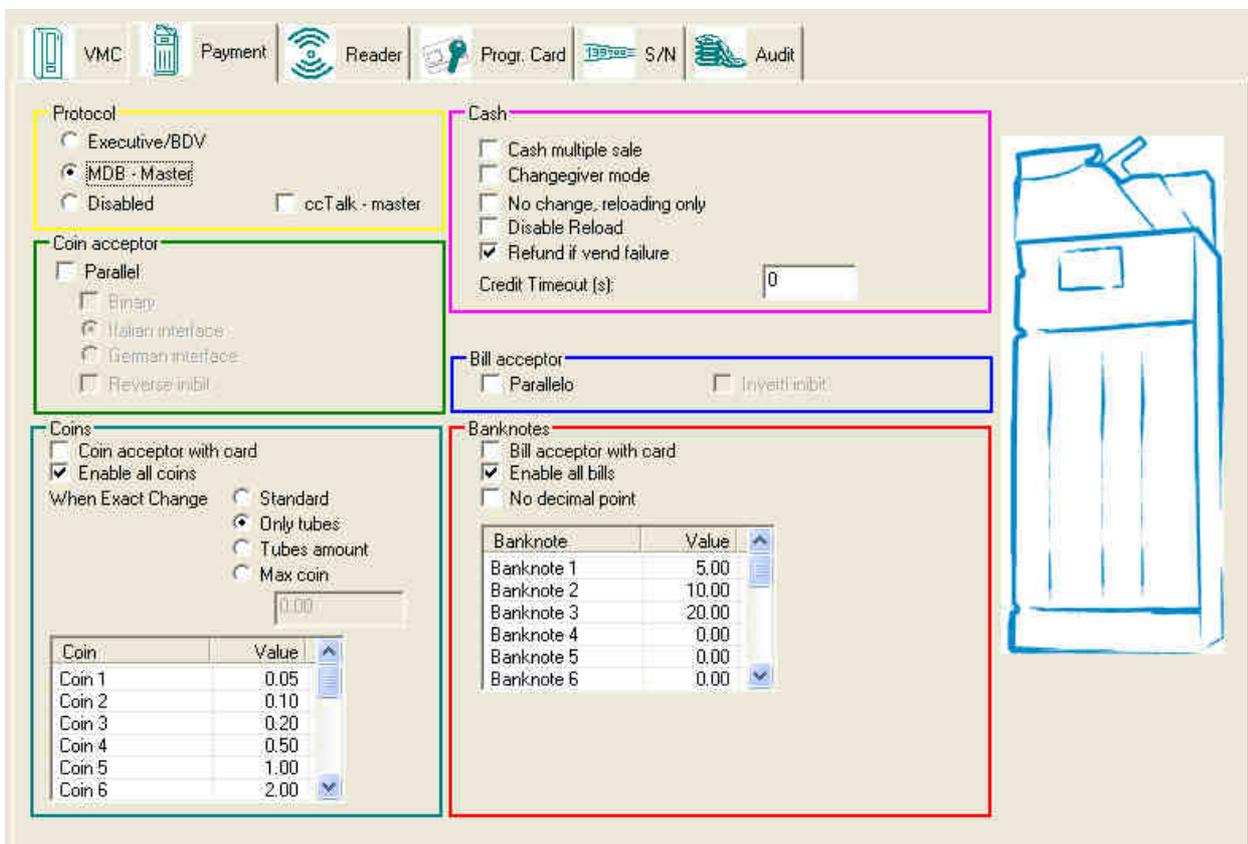


Figure 29

- **Protocol:** assignment of a connection protocol. You may also choose not to assign any of the predefined protocols, disabling them. In this case, however, the only possible option among the cash options will be the first, “cash multisale”.
- **Coin acceptor:** in this space you may set coin acceptor settings. You must select “Parallel”. The “Reverse inhibit” flag may be used to change the type of inhibit of the peripheral device, its characteristic type intrinsically linked with the machine.
- **Cash:** in this box you may handle cash acceptance. With the first flag, “Cash multiple sale”, you may make more than one purchase at a time, something you cannot do if it is not selected. In “Change giver mode”, the machine will act like a coin change machine, giving change when no purchase is made. If you select the “No change, reloading only” option, no change will be given if more cash is entered than necessary for the purchase; “Disable Reload” will prevent keys/cards being recharged with the device from which products are purchased, while the last option, “Refund if vend failure”, returns the cash if the machine cannot provide the selected product for some reason. Last of all, you may set “Credit Timeout (s)” in seconds, that is, the number of seconds for which the cash is available for choosing a product.
- **Bill acceptor:** same dynamics as the green box, but for banknote acceptance. In this case it is not necessary to introduce a binary option, and in fact the choice is limited to the “Parallelo” and “Inverti inhibit” options explained above, in the green box.
- **Coins:** this option determines how coins are handled, deciding whether to accept them only in the presence of a key/card (and therefore only for recharging cashless devices) and which coins to accept.
- **Banknotes:** the same as the box above, but for banknotes.

8. Reader Configuration

The Reader configuration screen is also divided into boxes by theme, as shown below.

The screenshot displays the 'Reader' configuration screen with several sections highlighted by colored boxes:

- Reader (Green box):** Contains 'Max income enabled' (checkbox), 'Reloading limit' (50.00), 'Max card credit' (100.00), and 'Max cash credit' (50.00).
- Application data (Blue box):** Contains 'Add application enable' (checked), 'Only empty cards' (checked), 'Autoincrement code' (checkbox), 'Enable date of expiry' (checkbox), 'Set if empty' (checkbox), 'New appl. Data' button, and 'Old appl. Data' button.
- Recharge card (EasyKey) (Cyan box):** Contains 'Easycard enable' (checkbox) and 'Reload unit' (0.00).
- Freevend card (Magenta box):** Contains 'Enable freevend card' (checkbox), 'Enable freevend token' (checkbox), and 'Freevend credit' (0.00).
- Scale factor (Yellow box):** Contains 'Scale factor' (1), 'Decimal places' (2), and 'Currency Code' (0000).
- Other settings:** 'Card multiple sale' (checked), 'Cumulative Audit' (checkbox), 'Cumulative Audit line' (checkbox), 'IR enabled' (checkbox), 'Administrator' button, and 'Advanced functionality' button.

Figure 30

- **Reader:** this box manages reader functions regarding credit, both key and cash.
 - Max income enabled:** defines the maximum amount the reader can handle, above which the vending machine is inhibited until audit data has been downloaded
 - Reloading limit:** once the maximum amount per key/card has been reached, no more recharges can be made, only purchases
 - Max card credit:** maximum amount; the key will lock up if this amount is exceeded
 - Max cash credit:** maximum amount accepted by the reader, above which no coins or banknotes may be accepted.
- **Recharge card (EasyKey):** are rechargeable keys used when a machine used for purchasing products does not also work as a coin mechanism, and there are no coin mechanisms for recharging. These are normally keys (also referred to as Transport Keys) which are charged by a single person, whom users pay for each product, a situation typical of small businesses. Enabling it with a special flag ("**Easycard enable**") permits use, and a maximum amount may be set above which these keys are rejected by the reader; the unit of measurement for recharging each key may also be set.
- **Freevend card :** The FreeVend is supplied for free vending. By selecting the item "**Enable freevend card**", the device is enabled for key/card recognition. By selecting the item "**Enable**

freevend token" the device is enabled to recognize the token supplied for free vending. In the field "**Freevend credit**", a value is set which will be displayed upon inserting the key/token in the device. All products whose price is lower or equal to the set value will be dispensed for free.

- **Application data:** this box is used to work with key/card programming. Practically, you may set it to ensure that keys inserted add the desired settings or do not, or that there are limitations, bonuses, discounts, etc. In detail, these are:

Add application enable: if this flag is enabled, when a key/card with access rights is found, you may add a new electronic purse with the same Operator, Location and Access level codes as the reader in which it is inserted.

Only empty cards: if you flag this option you will limit the procedure above to empty media only

Autoincrement code: if the application update feature is enabled and this box is flagged, an increase code will be added to the key which may be set in the box just below it. In this case only one reader should be enabled for the procedure, so that there will not be different keys with the same number.

Enable date of expiry: this option permits reading of the expiration date of the rechargeable card/key.

Change data application: this flag enables editing of application data.

Old/New appl. data: click on these keys to open a window illustrating the status of existing applications/those to be set on the key inserted.

Figure 31

The box at the top shows the starting credit that will be present on the key when it is initialised; a negative credit may be entered to permit automatic payment of a deposit. Right under this there is a small box for media functions. You may therefore decide how to set up the cashless device as appropriate to key type, accounting set-up and group management point. You may also disable it on certain days of the week and set bonus or discount percentages which can then be implemented in detail in the next box. Lastly, there is a window at the bottom in which to enter the key's expiration date, if new data is entered, while if the key is already set, the current expiration date for the key in question will appear, if present.

- **Yellow box:** this box may be used to determine the currency to be loaded on the key. In detail:

Scale factor: Allows you to determine the minimum credit to be entered in the machine, thereby increasing the maximum credit that may be used by the card. This function is useful for currencies with lower purchasing power.

Decimal places: Set the number of digits after the decimal point required to work with the currency set.

Currency code: This menu item must be programmed if cashless systems are linked with the Distributor through the MDB protocol. This is an internationally recognised identification code corresponding to the international telephone code or the code appearing in the table for the currency used; it is a specific requirement of the MDB protocol. In the reader, the MDB code "passepartout = 0000" is also implemented. If this code is set, the reader will not check the Distributor/Peripherals code against its own, while if it is not it will check the codes and lock up the reader if they are different.

Advanced functionality: permits access to a special window for setting up a number of advanced functions.

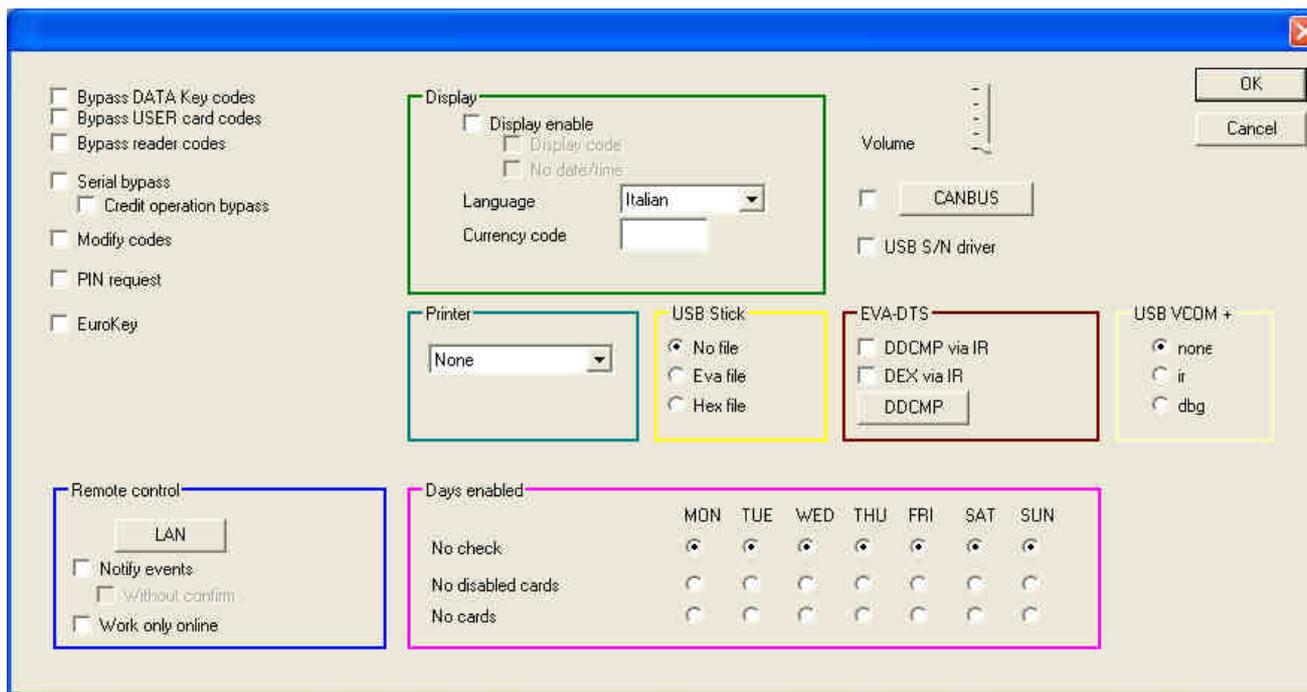


Figure 32

Bypass DATA Key Codes: This flag may be used to bypass access and location codes on the Data Key (they must be set to zero on the data key) with only one control on the operator code.

Bypass USER card codes: if this flag reader is enabled, the reader will control operator code only (location and access codes must be set to zero).

Bypass reader codes: with this flag enabled and the Location & Access codes set to zero, the reader accepts any Card/key with the same operator code but different location and access codes.

Modify codes: if this option is enabled it is possible to change the operator code from the old to the new code. New codes must be programmed with the **“Operator”** utility.

- **EVA-DTS:** In this space, you can select the method for acquiring data in IR mode, **“DEX via IR”** or **“DDCMP via IR”** (in which case a Password can be set).
- **USB VCOM +:** in this space, you can define the function of the USB port on the device. By selecting **“none”** the USB port will be used for programming via PC. By selecting **“ir”** the **“+”** serial is enabled as **“Ir”** and it may be used to collect audit data from the PC in **“Ir”** towards another device. By selecting **“dbg”** the USB port will be used to transfer communication paths to the PC, in case the device is used as a protocol analyzer.
- **Remote control:** function related to Ethernet connection.
- **Days enabled:** function related to the inhibition of keys/cards on specific days.

From the main screen of the Reader it is possible to access a special code generation window by clicking the **“Administrator”** button.

Finally, from the main screen of the Reader it is possible to enable or disable the **“Card multiple sale”** function with a single key; enable or disable the **“Cumulative Audit”**; enable or disable the interface **IRDA (“IR enabled”)**.

9. Key/card programming

The key and card programming screen may be used to access World Key and other Mifare devices key and card programming functions.



Figure 33

After inserting a key or placing a card next to a Mifare reader connected with the PC, click on **“Read Card”**.

The display will show the following screen:

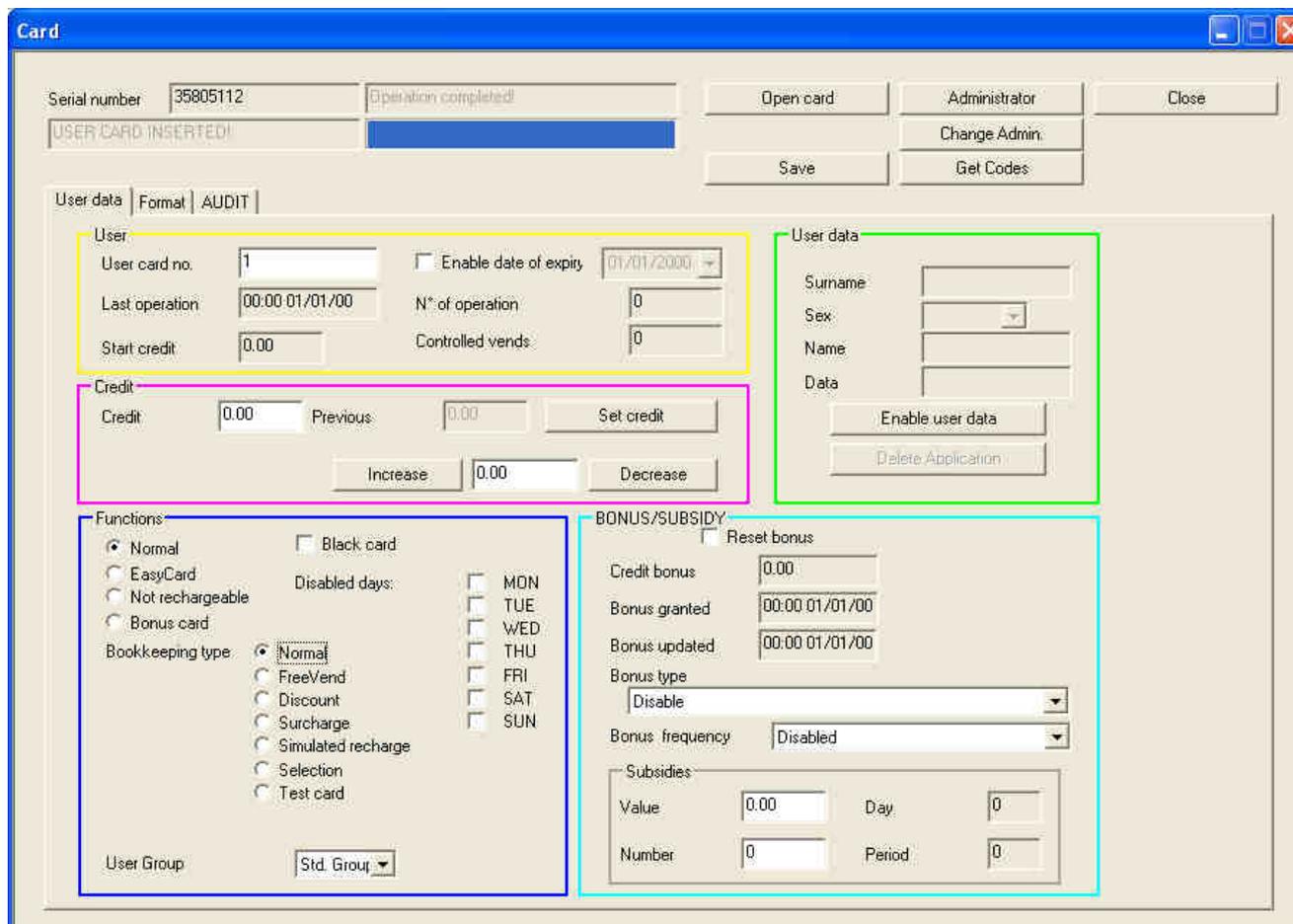


Figure 34

9.1 User Data

In the **User Data** screen, there are the following boxes relative to the user keys/cards :

- **User:** Box containing general information on the user card, such as, for example, the key or card number and expiration date, which can only be set when adding a new application.
- **Credit:** Box permitting modification of the credit deposited on the key or card.
- **User Data:** Box that may be used to enter any additional data on the user, such as name, surname and sex.
- **Functions:** Box permitting you to set the type of key or card functioning, choosing between:
 - **Normal:** standard functioning
 - **EasyCard:** functioning as recharging key/card
 - **Not-rechargeable:** functioning as disposable key/card
 - **Bonus card:** functioning as bonus key/card
 - **Black card:** locks the key and makes it unrecognisable to systems

You may also set the type of accounting, choosing between:

- **Normal:** Key with standard accounting
 - **FreeVend:** Key for free vending
 - **Discount:** Discount key
 - **Surcharge:** key with surcharge
 - **Simulated recharge:** recharging key for change-giver validator (records amounts loaded in the change-giver validator)
 - **Disabled days:** allows you to choose days on which to disable the key/card
 - **Test card**
- **BONUS/SUBSIDY:** Box in which you may set the value of a bonus credit of one of the types identified in the drop-down menu and establish its frequency.
 - **Subsidies:** Permit use of virtual credit. Virtual credit is recharged with the set frequency and may be used a limited number of times (within the time period or day); you may also set a maximum amount that may be spent each day. If the cost of the product exceeds this amount or the remaining virtual credit is insufficient, the user's actual credit will be charged the difference.

9.2 Format

This screen may be used to add or delete applications present in the list on the connected key/card. When you click on "**Sector card**", the different sectors into which the memory of the key characterising the Mifare system is divided will appear.

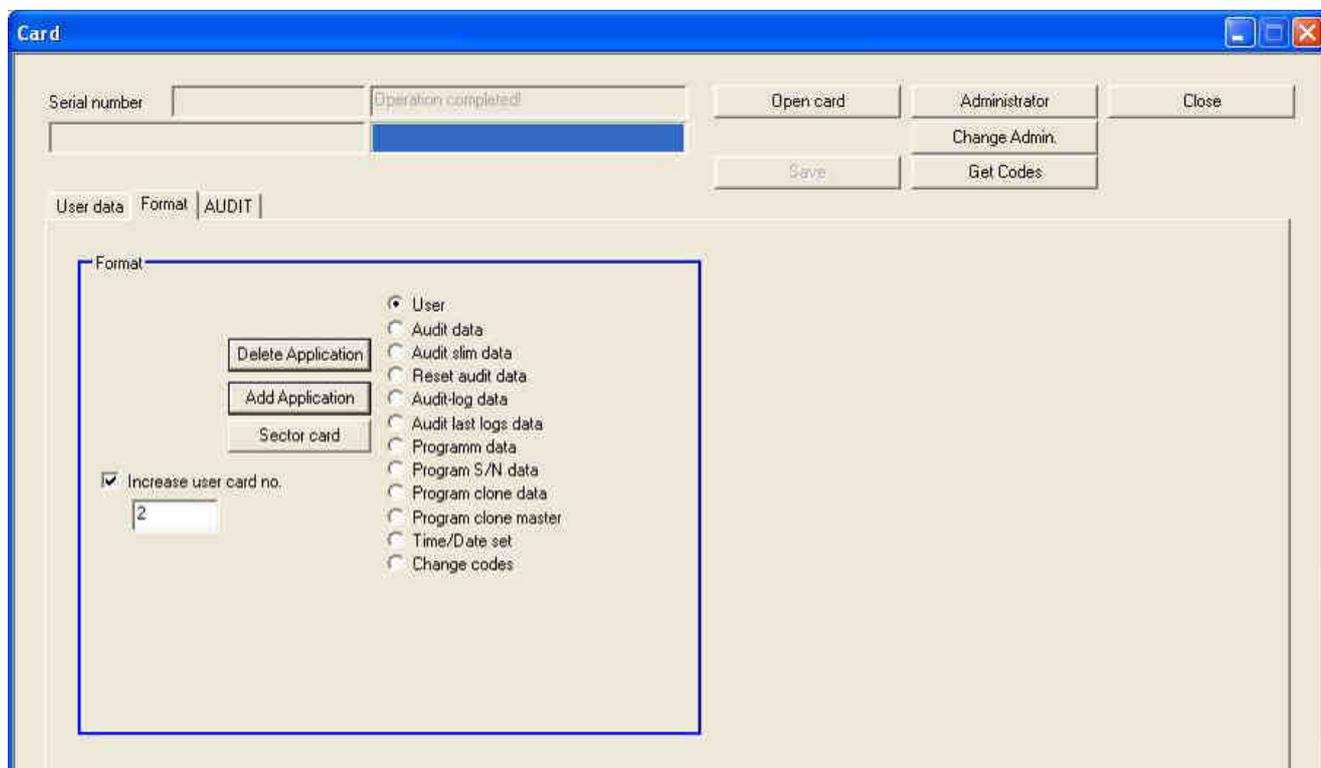


Figure 35

9.3 Audit

This screen provides a summary of the Audit data.

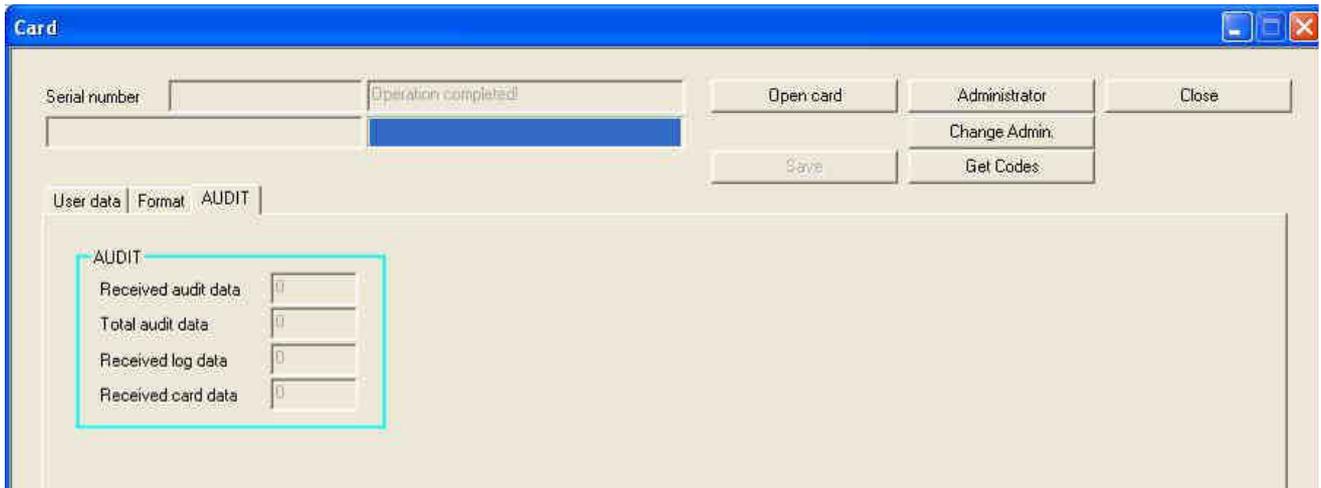


Figure 36

10. Serial number

Click on S/N (serial number) and the screen below will appear:

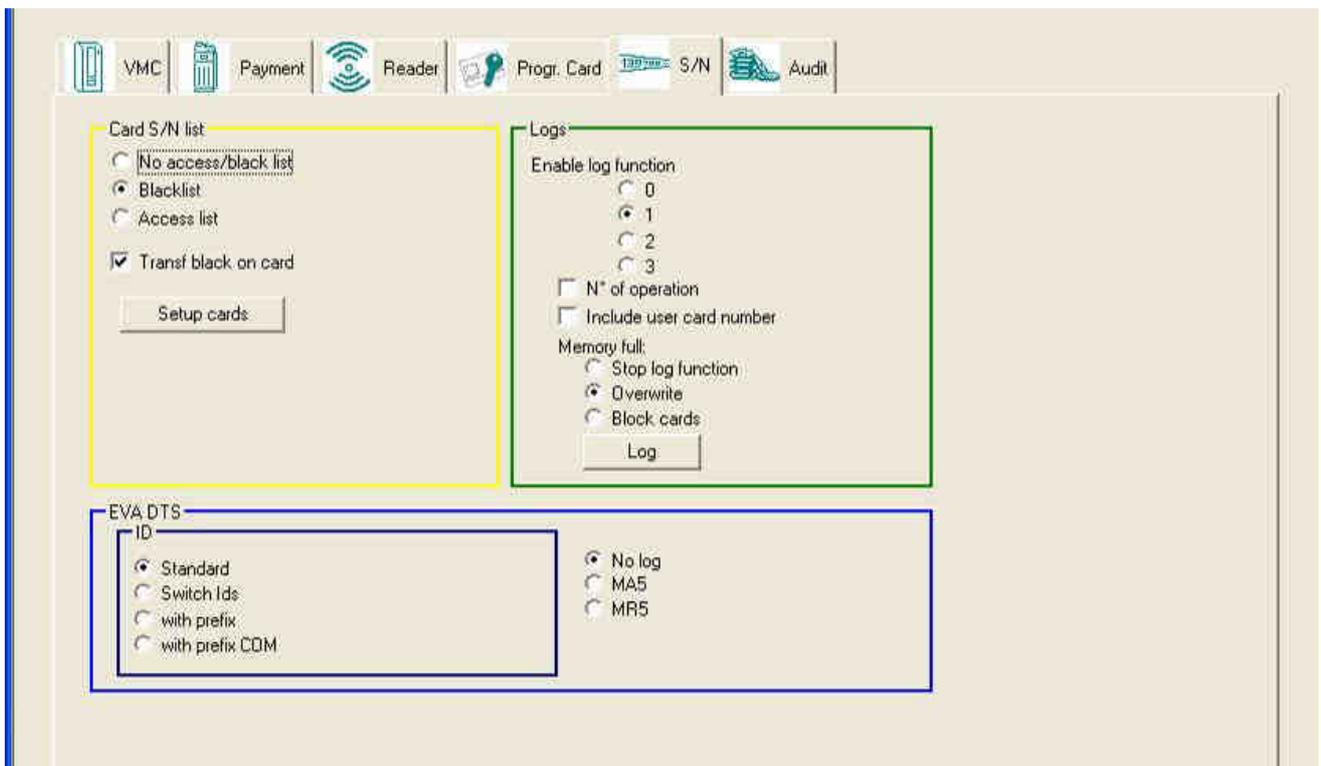


Figure 37

- **Card S/N list** : permits management of key lists, to permit use of the service by selected users ("**Access list**"), or exclude selected users ("**No access/blacklist**"). Keys and the corresponding

permits/restrictions may be set using the appropriate function. Click on **“Setup cards”** to open the window; in the example below, this is the **“No Access/Blacklist”** window:

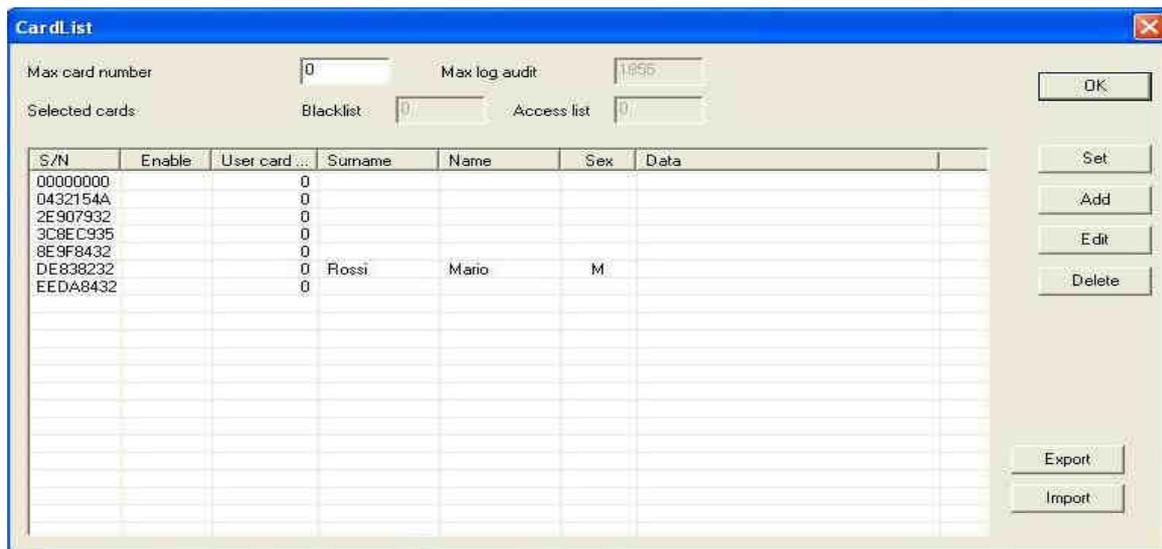


Figure 38

- .. **Logs** : The Logs box may be used to manage event log files.

Enable log function: enables recording of an event log

N° of operations: the progressive number of the operation a key performs during a sale is saved

Include user card number: the user number is also saved for each sales transaction.

You can also decide how to manage the flow of log data to the World Key or Mifare devices if their memory is full, choosing among: **“Stop log function”** (stops memorising event log if memory is full), **“Overwrite”** (overwrites less recent log files with most recent ones), and **“Block cards”** (inhibits functioning of the device).

- .. Click on **“Log”** button and the window below will appear:

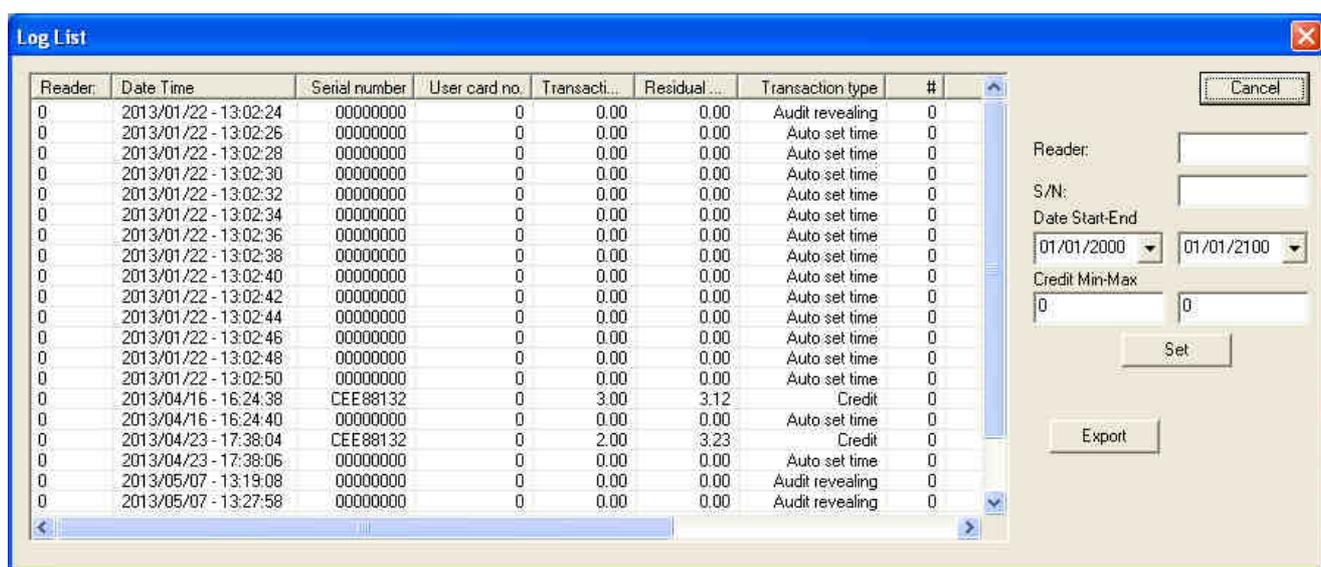


Figure 39

- **EVA DTS** is the format in which data of various kinds is transmitted via infrared signals from the device system to a palmtop reader. This box may be used to set a number of operating parameters for data acquisition in Eva Dts format.

Standard: may be used to manage the ID1 field, according to EVA specifications

Switch Ids: may be used to invert the position of the number identifying the system so that it is compatible with a number of management systems.

No Log: may be used to inhibit automatic reading of log data by holding the palmtop near the IRDA sensor of World Key systems.

MA5/MR5: may be used to set particular keywords for exporting log data via EVA/DTS. As these are proprietary implementations, the management program must support these functions.

11. Audit

The Audit window provides access to audit files read in various different ways.

- Click on **N. Audit** button to open a list of audits
- Click on **Audit** button to import Audit data contained in the World Key
- Click on **Card Audit** button to import audit files from an audit key, deleting the data on the key.



Figure 40

Form **"Connection"** menu (Figure 41):

- Click on **Audit UHHT** to access **data** read with a UHHT device

Form **"Export"** in **"File"** menu (Figure 42):

- Click on **EVA-DTS** to export data in this format

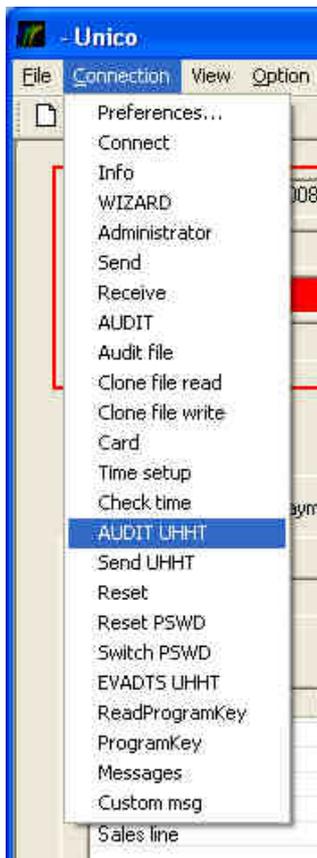


Figure 41

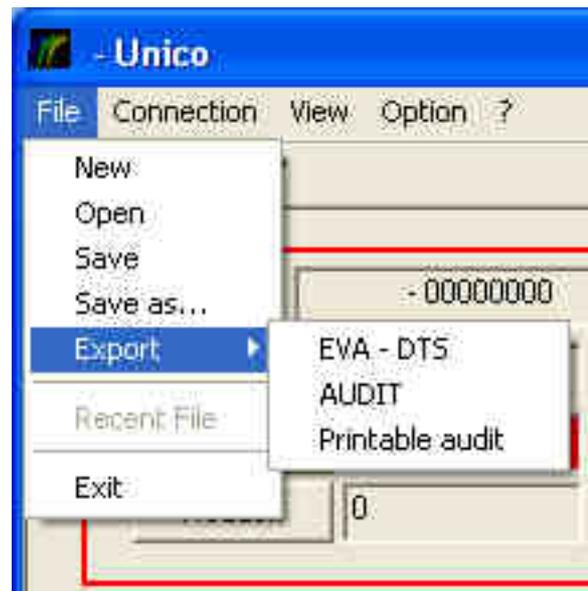


Figure 42

12. Annex

12.1 Error Messages

Error Code Name	Error Code (Hex)	Short description	
CE_OK	0x00	Successful completion of request	
CE_SYSTEM	0x01	System error	
CE_LASTCARD	0x02	Last Card Still Present	Too many unsuccessful tries to open card with wrong administration codes, to read gain this card reader must first open successfully another card.
CE_NOCARD	0x03	Card is not present	Reader did not find any card, put a card or try to remove and put it again.
CE_CTYPE	0x04	Card Type error	Wrong card type, data card instead of user card or different data card type expected.
CE_PARAM	0x05	Request Parameter error	Some parameters was not set correctly.
CE_ACCESS	0x06	Card access error	Cannot read/write the card, wrong access keys.
CE_READ	0x07	Card read error	Try to reinsert card and open it again.
CE_WRITE	0x08	Card write error	Try to reinsert card and open it again.
CE_INCR	0x09	Purse increment error	Try to reinsert card and open it again.

CE_DECR	0x0A	Purse decrement error	Try to reinsert card and open it again.
CE_TRANSFER	0x0B	Purse value transfer error	Try to reinsert card and open it again.
CE_RESTORE	0x0C	Purse restore error	Try to reinsert card and open it again.
CE_PURSE	0x0D	Purse value corrupt	
CE_MADERR	0x0E	Card Directory error	Card directory is not formatted as expected.
CE_FIXERR	0x0F	Purse fix error	
CE_FIXED	0x10	Purse was corrupt, but fixed	
CE_NOTOPEN	0x11	Card not open	Attempt to read/write a card that was not opened
CE_NOFILE	0x12	File not found	
CE_BADSIZE	0x13	Bad file size	
CE_ABORTED	0x14	Request aborted	Too many unsuccessful tries with wrong administration codes
CE_MANYCARD	0x15	Too many card present	More cards on reader or communication problem with card, try to reinsert.
CE_OPEN	0x19	Card has been opened already	
CE_CLOSE	0x1A	Card has been closed already	
CE_KEYLOAD	0x1C	Internal key table load failed	
CE_KEYCARD	0x1D	Invalid keycard	
CE_UNFORMAT	0x1E	Card has file on it	Cannot perform operation, card has still data.
CE_FORMATTED	0x1F	Card has been formatted already	
ER_GEN	0x20	General Error	
ER_MAD_READ	0x21	MAD read error	Cannot read card directory
ER_CRC	0x22	CRC MAD error	Card directory has a CRC error.
ER_APPNOFOUND	0x23	Application not found	There are no application on card.
ER_HEADACCESS	0x24	Head access error	
ER_CODICE_GESTORE	0x25	Administration code error	
ER_LOCAZIONE	0x26	Location code error	
ER_SEZIONE	0x27	Access level error	
ER_PURSEACCESS	0x28	Purse access error	
ER_KEY_VIRGIN	0x29	Virgin Key	Card has not been formatted
ER_PURSE_OUTRANGE	0x2A	Purse out of range	
ER_NO_CARD_SPACE	0x2B	No space in card	Card is full: - no application could be added - no more audit could be performed
ER_NO_CARD_ACCESS	0x2C	Card access error	
ER_START_SESSION_MISMISSING	0x2D	Missing start session	
ER_END_AUDIT	0x2E	Audit OK	
ER_EE_READ	0x2F	Read eeprom error	Reader could not read internal memory
ER_STANDING_APPLIC	0x30	Standing application error	Application with current codes already on card, cannot add new one.
ER_WRONG_PARAMETER	0x31	Wrong parameter	
ER_CARD_WRITE	0x32	Write error	
EC_SELECT	0x33	communication error at select	
EC_ANTICOL	0x34	communication error at anticollision	
EC_REQUEST	0x35	communication error at request	
EC_AUTH	0x36	communication error at Authentication	
EC_READ	0x37	communication error at Read	

ER_EE_WRITE	0x38	Eeprom writing	
ER_CARD_READ	0x39	Reading card	
ER_END_CONFPROG	0x3A		
ER_BLACK_CARD	0x3B	Black card	
CE_CMDNOTSUP	0x61	The command is not supported	
CE_CMDNOTREC	0x62	The command is not recognized	
CE_ERRORUNKNOWN	0x63	Unknown error	
CE_BLOCKNOTEXIST	0x64	The block doesn't exist	
CE_BLOCKLOCKEDALREADY	0x65	The block is already locked	
CE_BLOCKLOCKED	0x66	The block is locked	
CE_BLOCKWRITE	0x67	Error writing block	
CE_BLOCKLOCK	0x68	Cannot lock block	
CE_NOTIMPL	0x7F	Function not implemented	
CE_UNKNOWN	0x80	Unknown function	
CE_AUT_NOCARD	0x90		
CE_AUT_ACCESS	0x91		
CE_AUT_SYSTEM	0x92	Authentication error	Wrong administration codes
CE_HLT_SYSTEM	0x93		
CE_REQ_NOCARD	0x94		
CE_REQ_SYSTEM	0x95		
CE_SEL_NOCARD	0x96		
CE_SEL_SYSTEM	0x97		
CE_MORE0	0xA0	More data to come	
CE_NOMORE	0xAF	Last block, no more data to come	
CE_CCRBUSY	0xBB	Reader is busy	Reader rejects command, still running previous one.
CE_BITCOUNT	0xCB	Bit count error	Communication error with card, try to reinsert.
CE_COMM	0xCC	Comm error	Serial/USB communication error, try to re-connect reader.
CE_COMDATA	0xCD	Communication data error	
CE_COMFRAME	0xCF	Communication frame error	
CE_NOINIT	0xFF	Reader has not been opened	Connect reader.

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