SW3 Vend Help

Revision History

Version	Date	Person	Reason For Changes
351			Last version
400	2022-10-25	MTL	Reformat
410	2023-11-03	MTL	Add allocation

CONTENTS

1 AIM

This document provides information on Softcon Vending Systems.
The data is compiled into a help file that is used by the programs SCS_Client.exe and SCS_Vend_Cash.exe.
These programs are part of the Softcon software (SW) SoftWin version 3 programs.

2 VENDING

Vending forms part of Softcon's SoftWin3 group of programs and is integrated in the program SCS_Client.exe. Certain functions such as Add Cash and POS are available as separate exe programs and these also function as clients to SCS_Server.exe.

2.1 SYSTEM

In a Softcon vending on-line system, all functions are controlled via a PC in the system. Controllers are installed in vending machines, replacing the coin mechanisms. Cards presented or swiped at a card reader tied to the controller and the controller displays messages on a 2x16 line display (LCD). The card / reader type can be MAG, PROXIMITY, BARCODE, WIEGAND or TOUCH (others available on request). The controller communicates with the vending machine, receiving vend requests (when users select item buttons) and vend status messages, and commands the vending machine to do vends. Vend requests, price requests and cardholder's information (name, available credit and subsidies) is requested from the PC and results are displayed. Vending results are reported to the PC that logs and displays this information.

Up to 254 controllers can be connected to a single Softcon LAN (local area network) in a multi-drop configuration, with each controller set with a unique address. Up to 4 LANs can be installed in a single PC and multiple PCs can be integrated via a PC network.

Presently two types of controllers can be used to control vending type machines, namely the **MF350** and the **DP350** controllers. The **CR355** controller can be used as a **Key Vender** (controller type Vending) or as an **Access Vender** (controller type Access Vend) – activating the latch on vend granted. Cash loader requires controller type cash-loader.

The **MF350** is used where the controller replaces a Mars or similar coin mechanism. When installed in an Electro-mechanical vendor, an additional interface must be installed in the controller. With electronic vendors that communicate serial (current loop) using BDV or Executive protocols, no additional interface is required.

The **DP350** is only used in Electro-mechanical type machines (no serial interface) such as soda fountains, car washes and Photostat machines.

Photostat controlling has as yet not been tested under SoftWin3 (is available under DOS), and can be completed upon request. The sequence of events for controlling Photostat machines differ to the general vending control due to the speed of the transactions. The price of A3 and A4 copies are sent to the controller on reset and the vending is done as follows:
    The card/tag is presented at the reader and the account holder's name and available value is displayed.
    The controller closes the A3 and A4 enabled contacts if sufficient funds are available for A3 and A4 copies.
    As copies are made, the Photostat machine pulses the A3 or A4 copied contacts that are read by the controller, deducting the appropriate value off the cards funds available (no event is reported to the PC).
Should the available funds for either A3 of A4 become insufficient, the appropriate enable contact is opened? When the tag is presented again, a new tag is presented or no copies are made for a time-out of about 10 seconds, the number of copies for A3 and A4, together with the cardholder's new value is reported to the PC.

2.2 PC BARCODE SCANNER

A barcode scanner can be connected to a COM port of a PC that is used for entering/editing item data and at a PC that is used as a Point of Sale (POS). When editing the bbarcode in the menu items (d-click on the item barcode), the data read by the barcode scanner is automatically entered. When a line is highlighted, scanning with the reader moves the cursor to the item that has that barcode.

The set-up of the port to which the scanner is connected is via the menu **setup/COM Port Properties**. Select **Type** barcode and **Port**. The **Bits per second** (baud rate), **Parity**, number of **Data** and **Stop** bits is set to match that of the scanner.

2.3 **PC CARD READER**

A card reader can be connected to a COM port of a PC that is used for entering/editing card data and at a PC that is used as a Point of Sale (POS). When editing the card number in a card menu (d-click on the card number), the data read by the reader is automatically entered . When a line is highlighted in a line editor, reading a card moves the cursor to the card that has that card number.

The set-up of the port to which the scanner is connected is via the menu **setup/COM Port Properties**. Select **Type** Card and the **Port**. The **Bits per second** (baud rate), **Parity**, number of **Data** and **Stop** bits is set to match that of the scanner.

2.4 **SLIP PRINTER**

POS, PPOS and Cash PCs can print slips automatically on a sale (printer set-up) or on sequest by selecting the print button.
The printer is Install printer as "GENERIC / Test only" printer.

The data printed is set with trip characters (set with @@x) in the following text files in the directory C:\SoftWin3\Templet (note that subsidy is printed as discount for TAX purposes) as below.
See directory for options
   See SCS_PPOS.help for slip options and setting.
   SCS_Cash – add value file options are:
      Cash_Print_Add_Value.txt
      Cash_Print_EFT_Value.txt (same as Cash_Print_Add_Value.txt)

Header.txt
```
      _@_&_W2_              @@20_W0

_
Emp : @@21   @@22
Client: @@23
Qty  Code Item         Token Discount  Price
-----------------------------------------------

_
```

Item.txt
```
      @@24 @@25 @@26 @@35 @@27  @@28
```

Footer.txt
```
      _G-----------------------------------------------
             Total:    @@36 @@29 @@30
           Payment:    @@37 @@31 @@32
           Remain:     @@38 @@33 @@34
```

LineFeed.txt

     (Open lines)

   _V1

Where x:		
	20	Company name (ACCESS.MDB General.site_ID)
	21	Employee 10 chars, (CARD.MDBcard_data.employ)
	22	Time of print (PCs format)
	23	Holders name 28 chars (CARD.MDB Card_data.name)
	24	Quantity 4 chars
	25	Item code 4 chars
	26	Item name 18 chars
	27	Item price 7 chars
	28	Item ttotal 8 chars
	30	Value Sale 8 chars
	32	Value Payment 8 chars
	34	Value Remain 8 chars
	29	Discount Sale 8 chars
	31	Discount Payment 8 chars
	33	Discount Remain 8 chars
	36	Token Sale 8 chars
	37	Token Payment 8 chars
	38	Token Remain 8 chars

Print characters are printer dependant. The data is in (HEX), and displays as:

```
_@ (1B 40)        Initialise to default
_& (1C 26)        Bold
_. (1C 2E)        Cancel bold
_W1 (1C 57 31)    Double height and width
_W0 (1C 57 30)    Cancel double height and width
_ (0F)            Condense printing
_ (12)            Cancel condense
_G (1B 47)        Select double strike
_V1 (1B 56 31)    Cut
```

2.5 SYSTEM FUNCTIONING

The sequences of events in a vending cycle are:

Price request: When no tag number or card holder information is displayed on the LCD at the vending machine, selection of a vend option (by pressing an item button or dialling an item number) results in the display of the item key and price on the LCD for a few seconds – this is the local setting in the vender. The item number selected is sent to the PC and the name and charge price is sent to the controller for display.
IF NOT OVERWRITTEN BY THE PC PRICE AND NAME, PC SET-UP IS INCORRECT (see **Set-up TEST** below). For the **key vending** mode of the CR355, key 1 to 9 is selected on the keypad. For the **Access vending** mode of the CR355, there is no price request, only a vend request.

Holder information: When a tag or card is presented to the reader, the number read is displayed on the LCD for a few seconds. This number is sent to the PC that responds with the holder's name, the subsidies and credit available to the holder. If the card is registered in the card database, or the card has been disabled, "DISABLED" is displayed.

Vend request and vending: Selection of an item (as for price request above) while cardholder's information is displayed, is a vend request. The card/tag number and the item number requested are sent to the PC. If sufficient subsidy and/or credit is available, a do vend command is sent to the vending machine. On completion of the vend cycle (generally an OK signal from the vending machine), the card/tag number and item vended are reported to the PC which reduces the holder's subsidy and credit remaining and logs and displays the event. The amount of base products remaining in the vending machines are reduced by the amounts used by the item vended and if the remaining amount of any of the products is below a set point, an alarm event is generated. In **Access vending** mode of the CR355 – on reading a card, a vend request is sent to the PC, with reader 1 = key 1 and reader 2 = key 2.

Vend items: Each item on every vending machine in the system is registered in the PC. Each item is allocated a name, a key and vending machine price (these are used to identify the item), the charge price and a subsidy amount. All these amounts are in units and not related to any currency (could be cents, dimes, pennies, etc). Two counters are incremented when the item is vended and can be cleared by the PC operator. One counter is generally used as a totals counter (total of since installation) and the other as a period counter (e.g. per month), which a last reset date set. Note as all vend transactions are logged, the number of vends can be obtained via reports. For certain vending machine types, typically Photostat machines that do many fast vend (each copy is regarded as a vend), the charge price is received from the machine when vending is complete. Such type of item is set and USE PRICE from vender (other types use from PC).

Base products and Recipes: Each vending machine has base products such as cups, milk, coffee, coke, soda, etc. These are set per machine with a name, full quantity, quantity remaining and an alarm level. The quantity is in units and could be of any type (e.g. cups, grams, milligrams, litres, etc.). Each vend item on every vending machine is set with a recipe, breaking the item in the base product and quantity thereof for the item. The quantity is the same unit as the base product and on vending; the base products for the machine are reduced by the quantities defined in the recipe. When a base product is below the alarm set-point quantity, an alarm event is generated. The base product management relies of the assumption that when a vending machine is filled, amounts equal to the set full amounts as set for the machine is available in the machine, i.e. all products are filled. A filled message is received from the machine, together with the tag/card number of the person filling the machine, by a section of the "FILLED" command at the vending machine. This message results in an automatic logging of the products used since the last fill and a reset of the quantities available to the full amounts.

Cleaned, filled, and maintained: These special events are received from the vending machines, together with the tag/card number that selected the event. These events are displayed and logged and the filled event results in additional logging of products use and resetting of amounts available (see base products and recipes above).

2.6 EVENTS, DATA

Database details, events and data to/from controllers are described in the document SCS_VEND_DATA.
Events are set for 8 additional parameters (**indicated Z? in this document**). These are dependent on the event status and generally are:

Z1   Selected item key, cost of the item, amounted added.
Z2   Selected item price, subsidy used, total after added.
Z3   Item selected, discount.
Z4   Cost of item, charged.
Z5   Value used/remain, quantity.
Z6   Subsidy used/remain, km.
Z7   Unit, generally 1, 10 for fuel applications.
Z8   Token used/remain

To enable the additional parameters, select log fields in SCS_Client and enable all the Z parameters.

Event for vending are listed in the table below:

T	N	s	x	v	z1	z2	z3	z4	z5	z6	z7	z8	z9	z10
11 Base	BaseNo	74 IN_MIN	---	---	BaseRem	---	---	---	---	---	---	---	---	---
1 Reader	RdSysNo	300 ReqFunds	CardNo	---	---	---	---	---	---	---	---	---	---	---
1 Reader	RdSysNo	301 ShowItm	---	---	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
1 Reader	RdSysNo	302 FundsErr	CardNo	CostGrp	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
1 Reader	RdSysNo	303 DoVend	CardNo	CostGrp	ItmKey	ItmVal	Item	Cost	Val rem	sub rem	---	Tok rem	---	---
1 Reader	RdSysNo	304 Vend req	CardNo	CostGrp	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
1 Reader	RdSysNo	305 Show value	CardNo	CostGrp	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
1 Reader	RdSysNo	306 Show item	CardNo	CostGrp	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
1 Reader	RdSysNo	307 Add cash	CardNo	CostGrp	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
1 Reader	RdSysNo	308 Item not fnd	CardNo	CostGrp	ItmKey	ItmVal	Item	---	---	---	---	---	---	---
10 System	PCNo	350 PCCash	CardNo	CostGrp	AmntAdd	Total	UserNo	---	---	---	---	---	---	---
1 Reader	RdSysNo	351 CashAdded	CardNo	CostGrp	AmntAdd	Total	---	---	---	---	---	---	---	---
14 Vender	VenderRef	352 Filled	CardNo	---	---	---	---	---	---	---	---	---	---	---
11 Base	BaseNo	352 Filled	CardNo	---	Used	Remain	Full	---	---	---	---	---	---	---
14 Vender	VenderRef	353 Maint	CardNo	---	---	---	---	---	---	---	---	---	---	---
14 Vender	VenderRef	354 Clean	CardNo	---	---	---	---	---	---	---	---	---	---	---
12 Item	ItemSysNo	355 VendDone sufficient	CardNo	CostGrp	Cost	Subs	Disct	Charge	Qty	km	unit	Token	---	---
12 Item	ItemSysNo	356 VendDone insufficient	CardNo	CostGrp	Cost	Subs	Disct	Charge	Qty	km	---	Token	---	---
12 Item	ItemSysNo	357 VendDone cd unknown	0	0	Cost	0	0	Cost	Qty	km	---	---	---	---
1 Reader	RdSysNo	358 VendDone item unknown	CardNo	0	ItmKey	ItmVal	0	---	---	---	---	---	---	---
14 Vender	VenderRef	359 Filling due		---	---	---	---	---	---	---	---	---	---	---
14 Vender	VenderRef	360 Maint due		---	---	---	---	---	---	---	---	---	---	---
14 Vender	VenderRef	361 Clean due		---	---	---	---	---	---	---	---	---	---	---
14 Vender	VenderRef	362 Cash clear	CardNo	---	Cash	---	---	---	---	---	---	---	---	---
12 Item	ItemSysNo	363 PPOS item	UserNo	Cash	PC	Card 1st digits	Card 2st digits	Card 3st digits	Card 4st digits	Passengers	Card point	Card type	Province	Colour
14 Vender	VenderRef	364 PPOS cash up, takeon	UserNo	Take on	PC	Cash up	Free cars	Paid cars	---	---	---	---	---	---
14 Vender	VenderRef	368 POS take-on	UserNo	Take on	PC	---	---	---	---	---	---	---	---	---
14 Vender	VenderRef	365 POS cash-up	UserNo	Cash-up	PC	---	---	---	---	---	---	---	---	---

2.7 **VEND SET-UP**

2.7.1 **CARD DATA**

Set-up of card for vending is via the card menu. In properties, all vending data is in the tab Vending:

A card belongs to a **cost group** or none (Cost group 0). Cards that belong to a cost group, use the subsidies and value allocated to the group and does not use allocations to the card (only when not using a cost group). When cost group 0 is selected, the cards value is displayed in units (e.g. 45678 cents). When a cost group is selected, the cost groups value is displayed.

A card can be linked to a **discount group** (when not selected to discount group 0), receiving discounts on items at certain machines (see discount group below).

The cards **subsidy** displays the subsidy available per period (**limit**) and the subsidy remaining (**remain**) to the card for the set period. **Date** displays the start of the last period the card was used for vending.

The **period** sets the interval after which the subsidy remaining is set with limit. When the card is used at a vending unit, and period plus date if before the current time/date, the limit is copied to remain. If remaining subsidy was negative (this could occur when the PC was off-line and vending occurred at a vender that is set to be able to free vend when off-line – the vend is reported to the PC when back on-line), the new subsidy is equal to limit less the remaining (negative) subsidy. If the remaining subsidy was positive (i.e. subsidy was not completely used), the new subsidy is equal to limit, i.e. the unused subsidy is lost. Period settings can be **synchronised** to specific day of the month, week and time, as described below.

The amounts are in units (e.g. 1234 cents). When a vend transaction is done, the subsidies remain is decremented with the subsidy on the item (if subsidised) and the balance deducted from the value remain. If insufficient subsidy is remaining, it is deducted off the value remaining and no vend will take place if the subsidy and value are insufficient to cover the vend request.

Value functions that same way as subsidy. Value is deducted when the item vended is not fully subsidised or when the cardholders remaining subsidy does not cover subsidy set for the item.

For other card data is set via the other tabs. Card status must be enabled or capture, not expired or out of time and the area group must allow access to the zone the reader grants access to. Note that the reader must be set to dB10 in READER SET-UP.

For fuel vending, the **kM enforce** sets that the vehicle registration must be entered at the pump controller and must be greater than the **last kM** entered and less than last kM + **max kM**. If max kM is set to 0, the new entered kM is not checked for greater than last and less than last + max. See **pump** below,

2.7.2 **COST GROUP**

Cards use own subsidy and value (cost group 0), or belong to a cost group (cost code or department) and vend off a pool fund. Functioning is as described for the card above. When a cost group is selected, the setting of the group is displayed on the Vend property tab of card data. A cost group list editor is supplied under the Vending menu.

2.7.3 **DISCOUNT GROUPS**

Discount groups can be set to give dicounts on selected **items** (on selected machines) be adding items to the list. The discounts are as a **%** off the charge price, which subsidies and values being calculated after discount. Cards can be allocated a discount group (group 0 sets none). The vend items a discount goup is given discount is edited via the Vending/discount menu. Items are added by right clicking on the data area

(under the column headings) and selecting **add**. Items are removed by right clicking on the item to be removed and selecting **delete**. 20 discount groups are set as default, additional groups is created by changing the number or records in the table *tables* in *c:\softwin3\config\database.mdb*. **Vender** display the vender at which the item is located that disount is given.

2.7.4   GENERAL SET-UP

The Vending and Token tab in the General set-up menu is used to **synchronise** period date and time. **Last Day Of Month** selects that the period restarts on the last day (28 or 29 FEB, and 30th or 31st (card period setting must be set to 0000-00-31 00:00). **Last Weekday of Month** also requires a card period of 0000-00-31 00:00. **Weekly** requires a card period of 0000-00-07 00:00.

Mask Setting synchronises the card setting to the **Synchronise date/time**. For example if the period is to restart at 00:00 on the 1st of every month, set the card period to 0000-00-31 00:00 and the synchronise date/time to 0000-00-01 00:00.

Updating mode sets what is done when the card is used at a vending controller when in a new subsidy / token / value period. The options are:
Add   Adds the limit quantity set for the card to the card's remaining value. Periods not used are lost.
Add missed   Adds the limit quantity for each period since last added.
Reload   Reloads (overwrites) the remaining value.
Reload+   Reloads and deducts negative remaining quantities.

The **hour** and **minute** setting of synchronise date/time is used for all selections (if not zero). If both are zero, the hour and minutes are synchronised to when the card is used the first time, i.e. the hour and minute period setting of the card is added to hour and minute of the date setting of card. Setting an hour of 24 uses the time of the vend.

Vending Service enables alarms to be generated when it is time to clean, fill or maintain a vender. **Cleaned**, **filled** and **maintenance** periods are set per vender. When a vender is cleaned, filled or maintained, an event is reported from the vender and logged and recoded for the vender – with time, date and card holder that performed the function.

Use subsidy / value / token enables the use of the appropriate function.

Product Management enables the logging of the amount of base product used per vend and the generating of events when the product remaining is below the alarm level.

2.7.5 VENDER

A vender is a unit that dispences products and has its own set of base products and recipies. Each vender is set with a **Name** for the unit and the **controller** it is linked to, is selected. The controller must be of type vender. Certain controllers could have more that one vender per controller (e.g. fuel pumps with multi-hoses). The **port** selects the controller port serving the vender, it is set to 1 for single vender controllers.

When a vender is cleaned, **Card clean** and **Last cleaned** is automatically updated to indicate who cleaned the vender when. **Report clean** selects if the event must be Displayed, printed, logged and trigger new events. **Clean period** sets the period after which an event must be generated if the venders was not cleaned. Vending service in the general set-up must be enabled.

When a vender is filled, **Card full** and **Last full** is automatically updated to indicate who filled the vender when. **Report full** selects if the event must be Displayed, printed, logged and trigger new events. **Full period** sets the period after which an event must be generated if the venders was not filled. Vending service in the general set-up must be enabled. When filled, all the base products remaining are reloaded with base limit.

When a vender is maintained, **Card maint** and **Last main** is automatically updated to indicate who maintained the vender when. **Report maint** selects if the event must be displayed, printed, logged and trigger new events. **Maint period** sets the period after which an event must be generated if the venders was not maintained. Vending service in the general set-up must be enabled.

Events are genrated when the remaining base products in a vender goes below the alarm level, the **Report base** option sets printing, display, logging and tigger of event of these events. Recipes must be set and product management in the general set-up menu must be enabled.

2.7.6 ITEM GROUPS

Vender item groups are used to classify the items for reports and for Allocation (see below).

Items are linked to Item Groups (see Vend Items below).

Item Groups are simply names set in menu Vending > Vender Item Group
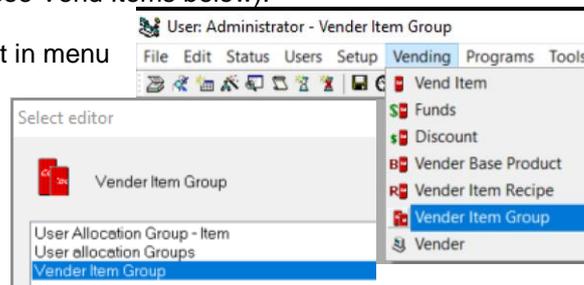
Typically:

2.7.7 ALLOCATION

Allocation is used to limit users to items (users are allocated items), e.g.:
1 x coldrink per day, 2 x safety gloves per day, 10 x crisps per month.
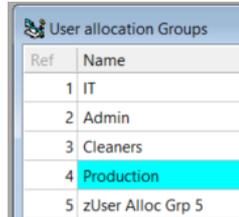
Allocation Enable

Setup > General Setup > Vending ☑ Allocation Vend
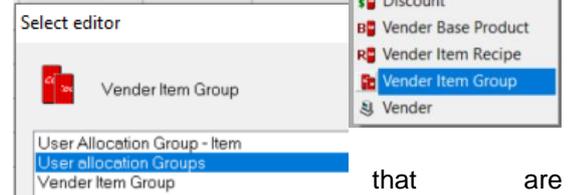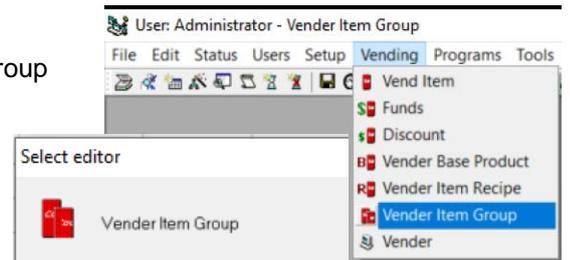
User Allocation Group

Users that are allocated items, are set for an Allocation Group
In the User menu > Vending Tab (see below)

Group names are set in menu
 Vending > Vender Item Group > User Allocation Groups

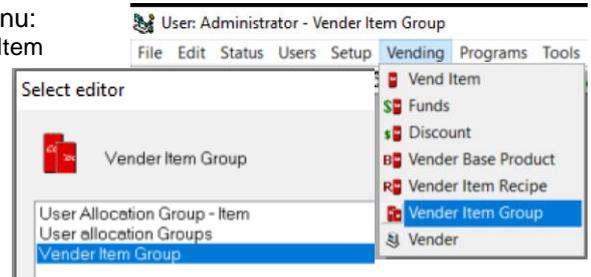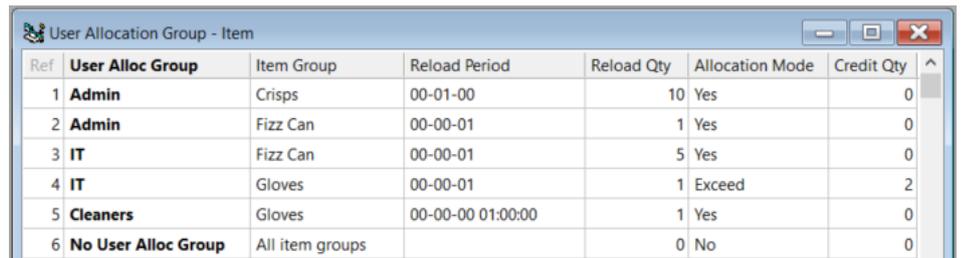These are names given to Groups allocated to users.   that   are

Allocation Group – Item Group
User Allocation Groups are linked to items groups in menu:
    Vending > Vender Item Group > User Allocation Group - Item

Ref	User Alloc Group	Item Group	Reload Period	Reload Qty	Allocation Mode	Credit Qty
1	Admin	Crisps	00-01-00	10	Yes	0
2	Admin	Fizz Can	00-00-01	1	Yes	0
3	IT	Fizz Can	00-00-01	5	Yes	0
4	IT	Gloves	00-00-01	1	Exceed	2
5	Cleaners	Gloves	00-00-00 01:00:00	1	Yes	0
6	No User Alloc Group	All item groups		0	No	0

User Allocation Groups are set for Item Groups.
The reload period and quantities to reload are set.
The allocation mode is either:
  No.   (same as no line)
  Yes.
  Exceed.   This allows for additional dispensing when none left – up to the Credit quantity.
             When the reload is done at start of new period, the amount that was exceeded is deleted.

User Allocation

Users are linked to User Allocation Group in a user Menu > Vend Data Tab, by selecting the required Allocation Group.

This displays all the Item Groups (Product) that is for the Allocation Group as set in the menu:
    User allocation Group – Item Group (above)

The quantity allocated to the user is set for each Item Group (Product).

2.7.8 VEND ITEM

R..	Description	Total	Now	Last DT	Reset	Price	Key	VAT Group	Item Group	Allocation/Link
1	**Can Coke**	0	0			0			Crisps	1
2	**Can Fanta Grape**	0	0			0			Crisps	1
3	**Glove 7**	0	0			0			Gloves	2
4	**Glove 8**	0	0			0			Gloves	2
5	**Crisp Sour Cream**	0	0			0			Crisps	5
6	**Can coke Lite**	0	0			0			Fizz Can	1
7	**zItem 7**	0	0			0			All item groups	0

(Vender Item (product) — Vending unit: Vender 1)

Each item is added for the vender (by right clicking on the display area under the column headings and selecting **Add record** and a **Description** is entered.
To remove an item, right click on the item line and select **Delete record**.

Charge is the price (in units, e.g. cents) the user pays for the item in total.
Subsidy is amount in units that will be deducted off the users daily subsidy (if available), the balance (charge – subsidy) is deducted off the users value. If no subsidy is set for the item, the charge amount is deducted.

Item Group sets the group of the item for reporting pusposes and for allocation (see above).
Groups are edited in the Item Group set-up menu (see above).

Allocation / Link.
      0   disables allocation for the item.
      1   Enabled for Allocation (SW version < 1.4.63).

SW version > 1.4.62. Any number links Items together for the Vender.
      e.g. All numbers 1 are linked together, all numbers 2, etc.
When an item is dispenced, all items in the linked goups are decremented for the user.
      ALTERNATIVELY – No linking required, decrement the Item Group quantity for the user.

The **key** and **price** is what the machine uses to identify the item. Most machined use keys in groups, e.g. all coffees (i.e. with or without sugar, milk, cup) are key 1, but if prices are set correctly (in the machine), each item can be uniquely be identified with the price reported by the machine. Note that this price is not what the item costs, but what the machine reports it to const, and is merely used to identify the item. The system first tries to identify the item with the price, and if not found, uses the key for identification. In the example above, no price values are set, so keys will be used in identifying the product. When keys are used, the recipe setting are an average for all the items identified with the same key. For fuel/gas/petrol **pump systems**, the price is set to 0 and the key is set to 16*pump number + pump product (e.g. for pump 1, product 1, the key is 17).

Unit is generally set to 1. Certain venders such as fuel **pumps**, dispensing price is in fractions. In such cases, the unit is set to the unit per fractions (e.g. to 1000 for a fraction of 1000 decimal for Tockheim pumps).

Use price indicates what price to be used as charge and generally is the PC price, i.e. the charge price. Certain vending machines, notably photo stat units, are automatically given the value available to the card when the card is presented, vending is then done off these amounts and when complete, the total vended is reported. Note that in such cases, subsidies are not used. This option of vender price is to accommodate speed transactions.

Total, **now** and **reset**, indicate number of items the machine has vended. Vends and now are incremented for every vend. Now can be reset and the reset date is set – currently this must be done manually, but in the future will be done via events.

Report and **Report TG** sets Display, Logging, Printing and event triggering when the item is vended.

Last DT indicates the last time the item was vended and is updated when the item is vended.

Barcode sets the barcode of the item (if required). By clicking on the appropriate item barcode, the code will be entered by reading the code on the item with a scanner tied to the PC. See Barcode scanner.

Details, **Relay** and **Pulse** are setting required for items of Parking Poit Of Sale (PPOS).

2.7.9   BASE PRODUCTS

Base products are the ingredients loaded in a vender, e.g. Milk, cups, coffee and tea, and the amount in units when **Full Qty** is set. **Alarm Qty** is set and when the **Remain Qty** is less than the alarm quantity, an alarm event is generated by the system. The quantity remaining is decremented on every vend according to the **recipe** for the item. When the vending machine is filled, the quantity remaining is set to the full quantity.

Each base product is added for the vender (by right clicking on the display area under the column headings and selecting **Add record** and a **Product** description is entered. To remove a base product, right click on the product line and select **Delete record**.

2.7.10   RECIPE

When using product management, each item must be defined with a **recipe** which consists of a quantity of base products. When the item is vended, the quantiies of base products remaining in the machine are decremented accoring to the recipe.

A recipe for each item is created. Each base producted used in the recipe is added by right clicking on the display area under the column headings and selecting **Add record** and a base **Product** isselected. The **Qty** of the base product used when the item is vended is set. To remove a base product from the recipe, right click on the product line and select **Delete record**.

2.7.11 Set-up Test

Item test

A simple test to check the vender set-up (MF350 controller installed in a vender) is price request by selecting an item at a vender (no card number / name displayed).

On selection of an item, the following should happen:
- Locally on the LCD the key number is displayed. If not, there is no communication between the controller and the vender, or the vender set-up is incorrect. Contact the installer.
- The LCD is overwritten with the PC item name and price. If not, the PC set-up is incorrect. Ensure the correct setting:
    - Controller Type=Vender (controller set-up).
    - Controller is on-line. If not, check:
        - node matches node (controller set-up)
        - correct mux selected (controller set-up)
        - correct mux type (mux set-up)
        - mux is allocated to correct PC and node (mux set-up)
        - PC is allocated to correct network (PC set-up)
    - Vender is allocated correct controller (vender set-up)
    - Item allocated to correct vender (item set-up)
    - Item set with correct key / price (item is found by matching price from controller – if not found or price settings zero, match key)

The data from controller can be seen via the mux monitor (tools menu):

| mux | node | 10h | 28h | D | H | M | s | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Key | Pls | Pms |

Where key is the verder key number and Pls Pms the price in HEX.

The result event can be seen via the event monitor (tools menu):

t1 n1 s301 x0 v0 z1Key z2Price z3ItemRef

Card test

A simple test to check the reader and card set-up (MF350 controller installed in a vender) is by swiping (tagging) the card at the reader. Help below assumes that the Item test is correct. The following should happen:
- Locally on the LCD the card number is displayed (e.g. "Tag 1234567890"). If not, check the reader set-up (note that the set-up to the controller is sent when set-up is selected by right clicking on the controller in the controller set-up menu – the controller must be on-line).
    - Card type (Reader set-up)
    - If ISO cards, the start and end locations and the LRC setting (General set-up).
    - If cards have site and client codes, set correctly (General set-up), else set to zero.
- The local display is overwritten by the PC with the cardholder's and and the funds available. Errors are displayed appropriately (e.g. card not found, disabled, etc.).

2.7.12 Set-up Summary

The following is the minimum settings, assumes no subsidy or tokens. ![icon] indicates via the set-up editor menu, ![icon] the card editor, other ICONS via the vending menu, non-ICON settings via the setup menu:

1. ![icon] PC: If part of network system, enter PC network name (else "localhost" is acceptable).
2. ![icon] Mux: Enter appropriate name for mux the controller is connected to (e.g. PC1-Mux1).
3. ![icon] Mux: Select PC (1 above) the mux is installed in (e.g. localhost).
4. ![icon] Mux: Select Mux type to match the installed card type (e.g. PCI).
5. ![icon] Mux: Set the port number to match the links on the mux card – 1 to 4 (e.g. 1).
6. ![icon] Controller: Enter appropriate controller name (e.g. 1st Floor sweets).
7. ![icon] Controller: Select type – vender.
8. ![icon] Controller: Set Node to match setting in controller – set via DIP switches or HH (e.g. 1).
9. ![icon] Controller: Select the mux (2 above) the vending controller is connected to (e.g. PC1-Mux1).
10. ![icon] Reader: Enter appropriate name for the reader (e.g. 1st Floor sweets).
11. ![icon] Reader: Select the controller the reader is connected to (e.g. 1st Floor sweets).
12. ![icon] Reader: Set the port number of the reader on the controller – generally 1.
13. ![icon] Reader: Select area zone the reader gives access to (e.g. zone 1) see 23.
14. ![icon] Reader: Select card type accoring to the cards used (e.g. Wiegand).
15. ![icon] Vender: Enter approprate vender name (e.g. 1st Floor sweets).
16. ![icon] Vender: Select the controller (6 above) (e.g. 1st Floor sweets).
17. ![icon] Vender: Set port number – generally 1 (only fuel pump venders 1 to 4).
18. ![icon] Vend Item: Enter approprate name for item (e.g. Bar-one).
19. ![icon] Vend Item: Enter charge price (e.g. 500 is R5-00).
20. ![icon] Vend Item: Set parameters to identify item with data reveived from vender (e.g. price 0, key 1).
21. ![icon] Vend Item: Set Report to Event/log/display.

Repeat for every item in every vender, for every vender, controller, mux and PC in the system.

Additional settings:

22. General set-up: Depending on cards used, set site / client codes and for ISO MAG cards, the start and end locations.
23. ![icon] Area zones: Cards have access to area zone via the card's access group, hence setting the Area To of a reader, allows / denies card holders to vend / not as specific venders. Set appropriate names for zones (e.g. Sweets 1st floor) and set the reader's Area To correctly.
24. ![icon] PC activity: (PC versions after 1.52) To display vended activity, select the activity display group that displays activity for the appropriate PC (e.g. local activity) – see 25. Note that only successful vends (vended) are logged and displayed. Price request and funds request (when reading card) and not logged or displayed.
25. PC activity: Only selected PC activities are displayed by the activity group – the group is allocated to a PC (e.g. PC 1 can be set to display PC 1 and PC 2 activites, but not that of PC 3).
26. Log fields: Z1 to Z8 must be selected for vending applications.
27. ![icon] status: Cards must be enable, not expired, area group enabled for the appropriate venders (via the area zone the reader gives access to), card number set match the card/tag and the selected time group must be be valid for the time of day and day of week when vending is allowed.
28. ![icon] vending: The card must have value remaining to cover the cost of the vend item.

3 ACCESS / KEY VEND

The CR355 controller with the Vending version of EEPROM, functions in one of two modes (selected via hand provrammer (mode 3=key vend, mode 4=access vend).

3.1 Key vend

Functions like a vending machine controller:
- o Reading card displays cardholder's name and funds.
- o Selecting key 1 to 9 on the key pad displays item cost (if holders name is not displayed).
- o Selecting key while holders name is displayed, sends a vend request to the PC.
- o Do vend command from the PC (if sufficient funds available for the vend request) activates the appropriate latch (reader 1 = latch 2, reader 2 = latch 2) – vend done is reported to the PC and the holder's funds are updated.

3.2 Access vend

Functions as an access controller if sufficient funds are available:
- o Reading card sends a vend request to the PC, reader 1=key 1, reader 2=key 2.
- o Do vend command from the PC (if sufficient funds available for the vend request) activates the appropriate latch (reader 1 = latch 2, reader 2 = latch 2).
- o On action complete (or immediately is no action complete), vend done is reported and the holder's funds are updated.

All action complete (access vend) and latch functions (time-outs, time groups, NO/NC, etc.); and the reader settings are as set for the controllers and readers.

Note that database types must be set for random (type 10) and the controller type must be Vender.

4 **FUEL PUMP**

The Tocheim fuel pump, hose controller interface, is connected to a Softcon MD350 controller, enabling the control of the fuel pump. A card is presented to the reader and the holders name and subsidy and value available is displayed. When the hose is lifted off the handle, a request is sent to the PC and the pump is set with the limit available for the transaction. Should the holders information not be displayed when the hose is lifted, the display requests that the card must be presented. While sufficient funds are available, the fuel can be dispensed. When the handle is replaced, the transaction is completed and the volume vend, the @ price per unit (litre) and the total charge is displayed and the database on the PC is updated.

The set-up for the pump is as any item on a vender, with certain fixed requirements:

> **Controller type** is fuel.
> The **Vender port** selects the controller port serving the vender, it is set to 1 for single vender controllers.
> **Item price** is set to 0 and the **Key** is set to pump product (e.g. product 1, the key is 1).
> **Item Unit** is 1000.

The pump interface connects to the MD350 port B, in the serial RS232 mode(TX pin 8, RX pin 10, gnd pin 6). Links E13, E15, resistor R28 and all otpo ICs are removed. OPT2 pins 1-8, IC10 pins 9-15 and links E2 1-2, E5 2-3 and E14 installed. The MD350 requires the appropriate Pump EPROM.

The fuel pump must be set to SA 2 (Rand decimal 00,00) and Unit to 3 decimal (option 10) – these set-up options are only available (with key-switch) after pump power-up after battery was diconnected.

Entering of kM reading can be enfored per card by setting enforce for the card. If a maximum is set, the entered km is checked for > last km entered and < last + maximum.

5 **POINT OF SALE (POS)**

A **POS** terminal or register is a PC running the SoftWin Client application.

The POS menu consists of 4 sections:

ᴸCLIENT
The cardholder that is purchasing or ordering items is displayed by presenting a card to the reader tied to the POS. The information displayed is the **Card number** (card database reference), the **Employee** number, the holders Name, the credit amount currently **Available** for purchases and allowed monthly credit **Limit**. Before an item can be selected, a cardholder must be selected by entering the card number or the employee number (if the system has been set-up to enter these selections). If a card reader is installed, the card is badged at the reader.

ITEMS
A list of the items allocated to the vender linked to the POS is displayed. When busy with an order (CLIENT section has a name), items are selected by typing the code number or by clicking on the item name. When the name box at the bottom of the list is highlighted, the item can be searched for by typing in the name (list box jump to the item starting with the characters typed. Selecting the Tab key move the edit point from code to description and to the option keys. Items could be allocated barcode number (when editing the items, the barcode is entered or scanned) and searched for by scanning the code. The system defaults to the last item selection column used (e.g. if selection option was set to code, new items are selected by code).

By clicking on the column header, the items are sorted by be heading, the selected sort column is indicated with the
symbol. The column can also be selected by the Alt shortcut key (indicated underscored character of the column name), e.g. to order by Description, select keys Alt and D (while Alt is selected).

Add or **Enter** or click again, transfers item selection to the current order.
**Return** Removes an item of the current order. Select the item and click on Return.

ORDER/SALE

Items being purchased or ordered are displayed with a total for the items. The name and employee number of the purchaser is displayed.

Cancel Order Cancels order and clear the order window. The client details are also cleared.

Sale !!! or **F10** converts the order to a sale and results in the printing of a slip (if set in printer option).

Print Sale Prints the sale to the set slip printer (see **slip printer** for print details).

Exit Closes the POS menu.
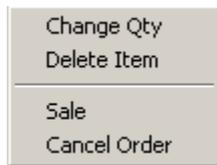
```
Change Qty
Delete Item

Sale
Cancel Order
```
Right clicking on an ordered item, displays an option box to change the quantity or delete the item. Sale or cancel options can also be selected.

6 PARKING POINT OF SALE (PPOS)

The PPOS is a special POS for parking applications and uses cards and cash. At the entrance to a car park, visitors pay a set rate for parking. The rate can vary according to the time of day or day of the week. Visitors could have special guest cards that allow free parking. The card data can be kept in external database files that are accessed via TCP or serial interfaces, or the data could be contained in the Softcon card database.

Operating PPOS is simple and logical, requiring the minimum number of keystrokes, without a mouse.

The **sequence** of actions is:
    If card available, swipe card at reader (connected to the serial port of the PPOS PC). The card holders name is displayed on the PPOS screen and on the optional 1 line*16 character PPOS pole display (connected to a COM port). Cash or free is displayed (as received from the database).

    If speed mode is not enabled (set per PPOS), the following selections are made on the special function keyboard:
        Province registration.
        Registration digits.
        Vehicle colour.
        Number of passengers.
    Sale is selected. The fare is displayed on the PPOS PC and on the optional 1 line*16 character PPOS pole display and the till drawer is opened.
    The amount tendered can optionally be entered, with the change being displayed.
    When the drawer is closed, a slip is printed automatically (if set per PPOS) and the barrier opens.

The **slip** contains the following:
    Company name (as set in the database).
    Time and date.
    PPOS number.
    Visitor name (if card was used).
    Province and registration number.
    Vehicle colour.
    Number of passengers.
    Fare, amount tendered and change.
    Additional messages as set in the database (e.g. PLEASE RETAIN FOR EXIT, Sunday special buffet).

An optional 4 line*16 LED display (connected to a COM port) displays messages set in the database.

All **transactions** are **logged** with date and time, data entered, fare (of free), PPOS number and operator reference. All **settings** are **password** protected.

A variety of **reports** are available, indicating the transactions in detail or as summary for each (or all) PPOS and for a selected operator (or all).

Operators must log-on before any transactions can take place, and must log-off when leaving the PPOS. Passwords can be set to auto expire.

7 **SCS_Cash, ADD CASH**

When editing a cardholder's cash value, it should be done via the program SCS_Vend_Cash.exe, and not by editing the cardholder's data in SCS_Client, card data (this should be disabled by password). SCS_Vend_Cash logs the change as an event, storing the PC at which the change was made, the logged on operator and the value added or deleted and card holder's new cash value. The program is a client application, linking to the program SCS_Server and can be SCS_Vend_Cash can be installed and run on PCs linked to SCS_Server

When SCS_Cash is started, a valid password must be entered. Passwords not enable to edit data cannot add or reduce values.

Cardholders or funds cash value is added to or reduced (by adding a negative value). The **Funds Source** is selected as **Card** or **Cost group** and the subsequent card number or name is selected from the card or funds data.

The card is selected by entering the **Card Number** (reference) and selecting [Find Card] or Enter; or by selecting the card holders name via the **Card** list box. These options can only be selected if the PC running the SCS_Cash program is enabled to edit card numbers (see SCS_Client, Set-up PC – Card). If not enabled, the data is displayed

faded. The card can also be selected via badging the card a reader connected to the PC (see **PC Reader** for installation instructions).
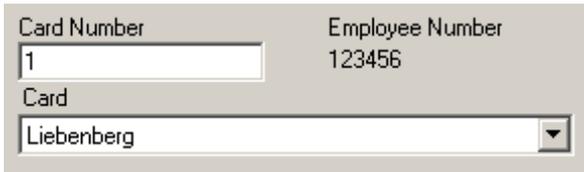
The **Employee Number** is displayed.

When the funds source is set as **Cost group**, selection is via the cost group list box.
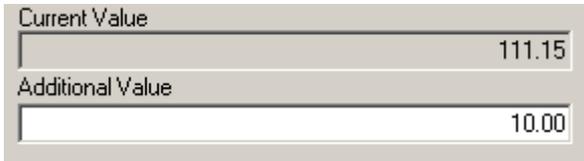
Cash value is added to the displayed cardholder or Fund by entering **Additional Value**. Selecting the minus key after the additional value is edited, results in the Additional value being subtracted when the Add key is entered. Current Value displays the value available and is updated

The selected cardholder's photo is displayed if the photo file name is set in the card data file (see card data edit in SCS_Client).

Selecting the [Add] key adds the additional value to the cards current value. If the additional value is negative, the amount is deducted. The current value displayed is the updated new value. The data is logged in the SoftWin daily log file.

The [Cancel] cancel key closes the SCS_Cash program

8 SYSTEM LINKS

The Softcon program SCS_Client can link to external systems via TCP links, transferring and receiving data in "real time" as events occur.

The **TCP/IP** address of the PC where the linked system SW is running is set and could be on the same PC. The **Port** used by the linked SW is set, identifying the link and must be greater than 7000. Softcon programs use port addresses 2555 to 2560. If **Auto Start** is set, SCS_Client automatically connects to the linked system on start-up, start and stop selections can be made in the Set-up menu that established or terminates the link.

See the document SCS_System_links.doc for details.

9 CONTROLLER DATA

To CONTROLLER

1	2	3	4	5	6	7	8	9	10	11	12	13	Description	Event
0Ch	60h	0,1	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	Reader name 1,2 half	t4 n? s4 x100
0Ch	62h	0,1	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	LCD line 1, 1,2 half	
0Ch	64h	0,1	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	LCD line 2 1,2 half	
12h	29h	xls	xms	b10	b32	b54	b76	b98	bBA	Key	Pls	Pms	Do vend	t1 n? s303
01h	F0h												Version request	t4 n? s6 x0
03h	F1h	0Ah	dbMode										dB Mode	t4 n? s4 x100
03h	F1h	0Bh	CC										Client code	t4 n? s4 x100
03h	F1h	0Ch	SC										Site code	t4 n? s4 x100
03h	F1h	0Fh	Ctype										Card type	t4 n? s4 x100
03h	F1h	11h	LRC										LRC	t4 n? s4 x100
04h	F1h	12h	Off ls	Off ms									Offset	t4 n? s4 x100
06h	F1h	13h	Sfac	Efac	Snum	Enum							Bits position	t4 n? s4 x100
09h	F4h	sec	min	Hr	DOW	Day	Mon	Yls	Yms				Time/Date	t4 n? s4 x1

From CONTROLLER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Description	Event
0Dh	01h	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA					Funds request	t1 p1 s300 xref
0Eh	01h	D	H	M	s	Rd	Xls	xms	b10	b32	b54	b76	b98	bBA				Funds request	t1 p1 s300 xref
0Fh	0Ah	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA	Cls	Cms			Add cash	t1 p1 s351 xref vcg **z1cash z2total**
0Fh	0Bh	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA	Cls	Cms			Clear cash	t1 p1 s362 xref vcg **z1cash**
0Dh	0Ch	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA					Maintained	t14 n? s353 xref v0
0Dh	0Dh	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA					Filled	t14 n? s352 xref v0
0Dh	0Eh	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA					Cleaned	t14 n? s354 xref v0
0Dh	14h	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA					Door closed	t2 p1 s1050 xref v1
0Dh	15h	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA					Door open	t2 p1 s1050 xref v2
10h	28h	D	H	M	s	Xls	xms	0	0	0	0	0	0	Key	Pls	Pms		Price request	t1 p1 s301 x0 v0 **z1K z2P z3lref**
10h	28h	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA	Key	Pls	Pms		Vend request	t1 p1 s303 xref vcg **z1K z2P z3lref z..**
11h	28h	D	H	M	s	Rd	xls	xms	0	0	0	0	0	0	Key	Pls	Pms	Price request	t1 p1 s301 x0 v0 **z1K z2P z3lref**
11h	28h	D	H	M	s	Rd	xls	xms	b10	b32	b54	b76	b98	bBA	Key	Pls	Pms	Vend request	t1 p1 s303 xref vcg **z1K z2P z3lref z..**
10h	29h	D	H	M	s	Xls	xms	b10	b32	b54	b76	b98	bBA	Key	Pls	Pms		Vended	t12 nlref s355 xref vcg **z1c z2s z3d z..**
0Fh	2Ah	0	D	H	M	S	xls	xms	0	0	0	0	0	0	Key			Price request	t1 p1 s301 x0 v0 **z1K z2P z3lref**
0Fh	2Ah	0	D	H	M	s	xls	xms	b10	b32	b54	b76	b98	bBA	Key			Vended	t12 nlref s355 xref vcg **z1cost z2sub z3dis z4char z5qty z6km z7unit**
0Dh	2Ah	1	Pls	Pms	Q0	Q1	Q2	C0	C1	C2	km0	km1	km2					Version	
0Dh	F0h	v1	v2	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12				Version	
01h	F7h																	Power-up	t4 n1 s3 x0 v0
01h	F8h																	Off-line	t4 n1 s2 x0 v0
01h	F9h																	On-line	t4 n1 s1 x0 v0