Ref. №П-14-0038 dated 01.05.2014

To whom it may concern



## Description of the technical possibilities of the loyal-bonus system "NEFTEGAZ CARD» ("NG-CARD") - a hardware-software complex "eNGine System" on bonus cards management

### Introduction, definition of factors

The proposed bonus system for the formation of loyalty schemes is provided with the following components, which allow taking into account a variety of factors and indicators of customer's activity:

1

| Factor | | Description |
|---|---|---|
| **Factors «Time-place»** | Время суток **Time of a day** | Is used to determine the time of day of the purchase and compare with the specified time interval to perform the factor |
| | День недели **Day of a week** | Is used to determine the day of the week of the visit |
| | Дата **Date** | Is used to determine the date of the visit |
| | Терминал **Terminal** | Is used to determine terminals / points of customer service in terms of loyal scheme |
| | Пункт продажи **Point of sales** | Is used to determine the point of sale, in which the customer is attended |

| Factors «Customer» | Код клиента **Customer's code** | Is used to identify a customer |
|---|---|---|
| | Группа клиента **Customer's group** | used to identify a customer and his membership in a particular group of customers |
| | Знаменательная дата **Momentous date** | Is used to determine visits in momentous days for the customer |
| | Пол **Sex** | Is used to determine a Customer's sex |
| Factors «System counters» | Сист.Счетчик - текущий период **System counter- current period** | It used to determine the total value of a counter of the customer who uses a bonus card |
| | Сист.Счетчик - общее значение **System counter – general value** | It used to determine the total value of a system counter of a customer in the current period. |
| | Сист.Счетчик - прошедший период **System counter- past period** | It is used to determine the value of the system counter of a customer for the past period |
| Factors «Customer's savings» | Накопления - общее значение **Savings –** | is used to determine the total amount of purchases of a customer for the whole period of use of a bonus card |

| | | |
|---|---|---|
| | total value | |
| | Накопления - прошедшиий период<br><br>Savings-past period | is used to determine the amount of customer's purchases in the past period |
| | Накопления - текущий период<br><br>Savings – current period | Is used to determine the amount of customer's purchases in the current period |
| **Factors «Customer's visits»** | Σ<br>Все посещения<br><br>All visits | Is used to determine the total number of visits, including the customers who do not have a bonus cards |
| | Σ<br>Посещения - общее значение<br><br>Visits – general value | Is used to determine the total number of visits of the customers who use a bonus card |
| | Посещения - прошедший период<br><br>Visits – past period | Is used to determine the number of visits of the customers who use a bonus card in the past period |
| | Посещения - текущий период<br><br>Visits – current period | Is used to determine the number of visits of the customers who use a bonus card in the current period |
| **Factors «Additional»** | Товар<br><br>Goods | Is used to identify the product purchased by a customer who uses a bonus card |

| | | |
|---|---|---|
| | Сумма<br>**Sum** | Is used to determine the sum of purchase made by a customer who uses a bonus card |
| | Группа товара<br>**Product group** | Is used to determine the purchased product and its product group |
| | Вид операции<br>**Operation type** | Is used to identify the operation type (sale or return of products) when a customer uses a bonus card |
| | Количество<br>**Amount** | Is used to determine the amount of products when a customer carries out operations with a bonus card |

Internal document of the scheme are provided for work with bonus cards. The scheme of distribution of bonus cards and correlation between card status and internal documents of the system can be schematically represented as follows:
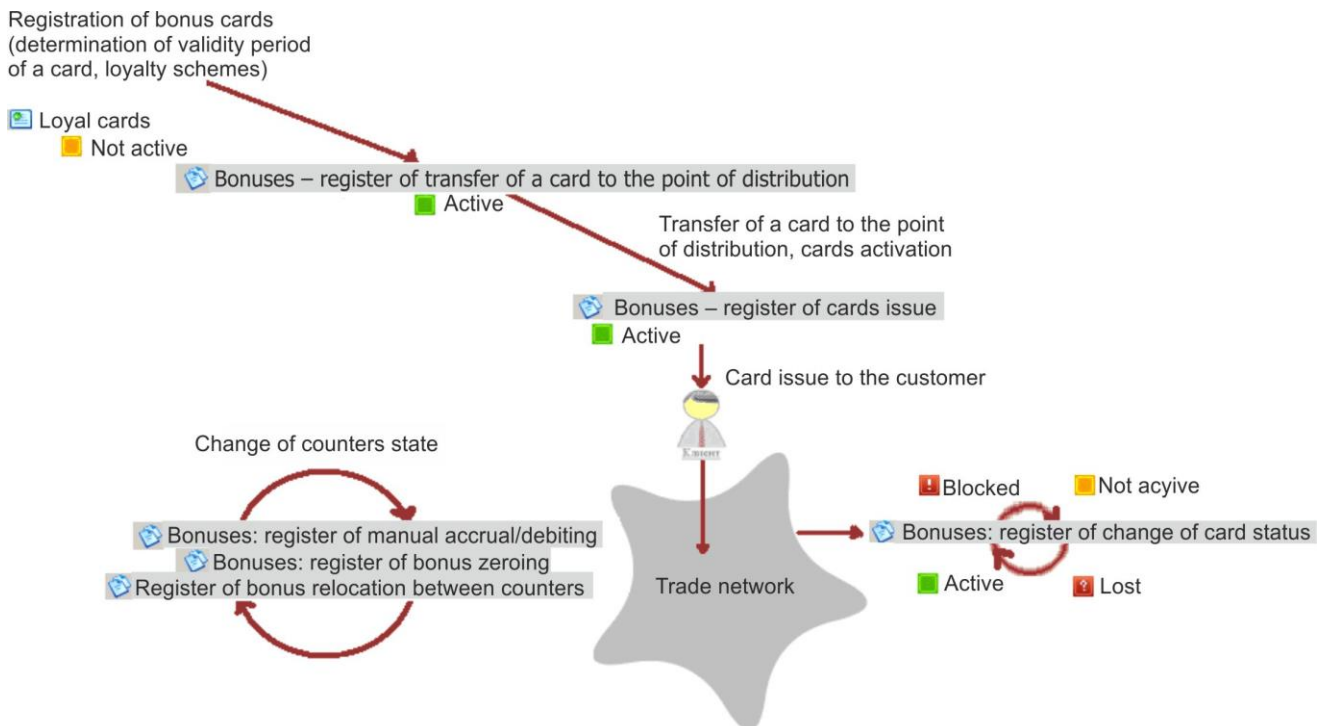
Figure 1. The scheme of circulation of bonus cards. Possible status of bonus cards and correlation between card status and internal documents of the system.

**General data on the system "eNGine System"**
**(technical name of the system is "NG-CARD")**

**"eNGine System"** is a specialized set of hardware and software designed to automate accounting, monitoring, reporting and analysis of sales of goods and services in commercial networks using:
- fuel cards;
- fuel coupons (disposable and reusable);
- discount cards.

The complex **"eNGine System"** has the following components:

- Terminal equipment GPS-767 - hardware installed at the filling stations by which means the service of cards is carried out; terminals are connected to external readers RFID-contactless plastic cards, magnetic card readers or barcode scanners - depending on the type of cards;
- Server equipment - equipment for data storage and organization of work with the database;
- Software of Operational Center - software that organizes processing and storage of accounting information, ensures the formation of various kinds of reporting and analysis;
- Plastic cards - means of identification of customers and organization of turnover to provide services in the trade network.

Working with complex "eNGine System" is simple. Everything you need to organize a full-fledged work with the complex work is:

- To place the terminal equipment in the points of distribution and receiving of cards, make its setting;
- To install and configure server hardware;
- To install the necessary software "eNGine Client"* to work with the database software "eNGine Server", handling all requests of terminal equipment.

    *"**eNGine Client**" is software that allows you to administer the system as a whole, as well as accompany the work with clients by payment, coupons and bonus systems.

**Features of bonus system, as a part of "eNGine System"**

Bonus system, in addition to accounting functions, forming various reporting and analysis , allows you to organize and maintain a flexible system of charging a variety of incentives such as discounts or bonuses accrued to some customers who are holders of bonus cards and customers of a certain a trading network. The amount of rewards for each client is determined by its own activity index of visits of a trade network and set loyalty schemes in its bonus card. Developed in the system components allow you to organize a flexible and complex loyalty scheme on accrual of bonuses and discounts.

To monitor the activity in the system there are provided 10 custom counters of customers' purchases on different grounds. This may be the number of visits of the trading network by a customer, the amount of production or the sum of money spent by a customer on some products / services, or some bonuses, depending on various factors such as the time or the place of purchase. Sales process itself is organized as follows:

- the cards identifying customers and their registration in the system are issued;
- each card is determined by loyalty scheme;
- the cards are issued to customers, i.e. card personalization;
- sales are made via terminal equipment using contactless loyalty cards.

When a customer makes a purchase, the sales data are sent to the server where they are stored and can be used later to generate various reports and to conduct analyzes. The advanced features of the system include:

- maintaining customer database;
- management of "geography" and location of cards;
- blocking / recovery of bonus cards at their loss, etc.;
- formation of trade groups;
- exchange with external accounting systems;
- maintaining a data log of user actions;

This system can be used in any commercial network, but as an example in this document it is used in the network of filling stations.

## Features of the system in terms of client database maintenance

Customers of trading network are individuals who are involved in financial transactions connected with sales of fuel by means of bonus cards. The records of such individuals in the system are kept by the client application "eNGine Client" in the client book.

Client Book is a working form of application "eNGine Client" with the records about all customers. The data in this directory are entered automatically after completing the personal data about the user bonus cards at her issue. The client contains the following information:

- First name, name and patronymic ;

- Customer's sex;

- Date of birth;

- Address;

- Telephone;

- E-mail;

- Data on a car;

- Affiliation to a certain group.

In order to fill in the information about a customer there are provided additional directories as: directory of locality, car and car price segment, directory of mobile operators. It also provides a unified approach to the submission of this kind of customer data, that allow to prepare a various statistics on sales by transects.

## Bonus cards

Bonus card is a plastic contactless RFID-(radio-frequency identification) card with built-in microprocessor and antenna. It can be used with a magnetic stripe card, which transmits a unique identification code and is used as a means of customer identification.

Contactless card is not a mean of payment, and it is intended for the holder of the goods / services in the trade network, using reader unit of PIN-PAD system **"eNGine System".**

To organize circulation and appropriate work of contactless cards in **"eNGine System",** they must be registered and handling operation in **"eNGine Client"** on setting of further work. To maintain accounting of bonus cards used in the system "eNGine Client" there is developed **"Directory of loyal cards"**. To enter the card into the system, the reader unit needs some internal code of cards.

Each bonus card is characterized by the following parameters:

- card status;
- loyalty scheme;
- validity period;
- cardholder, who is connected to ten system counters;
- archived state;
- affiliation to the terminal groups.

Card status defines the current state of a bonus card in its validity period and allows the system to perform certain actions on it. The following types of card status are possible:

- Inactive;
- Active;
- Lost;
- Blocked.

Change of the status of your bonus card occurs and is secured in the system automatically when certain events (Figure 2.), as well as the actions of the persons involved in the validity period of your bonus card occur. For example, the inactive bonus card automatically becomes an active one after the Act of transfer of the card to a distribution point by means of the internal document system is carried out.

When working with a bonus card it is necessary to conduct operations to eliminate inactive bonus cards from the system. For this is a feature of the bonus card "Archive". All cards with this feature will be displayed only on user request if needed.

Belonging of the card to some terminal group can manage the "geography" and circulation of a card, i.e. to determine on what terminal / point of sale this card can be maintained.

System counters enable you to keep records of different values of customer activity of purchases - it can be periodical counters (i.e., those that register some indicators only for a day, month, quarter, year), and not periodic ones, i.e. accounting of value is conducted during the whole period of card validity.

The scheme of circulation of bonus cards and correlation between card status and internal documents of the system can be schematically represented as follows:
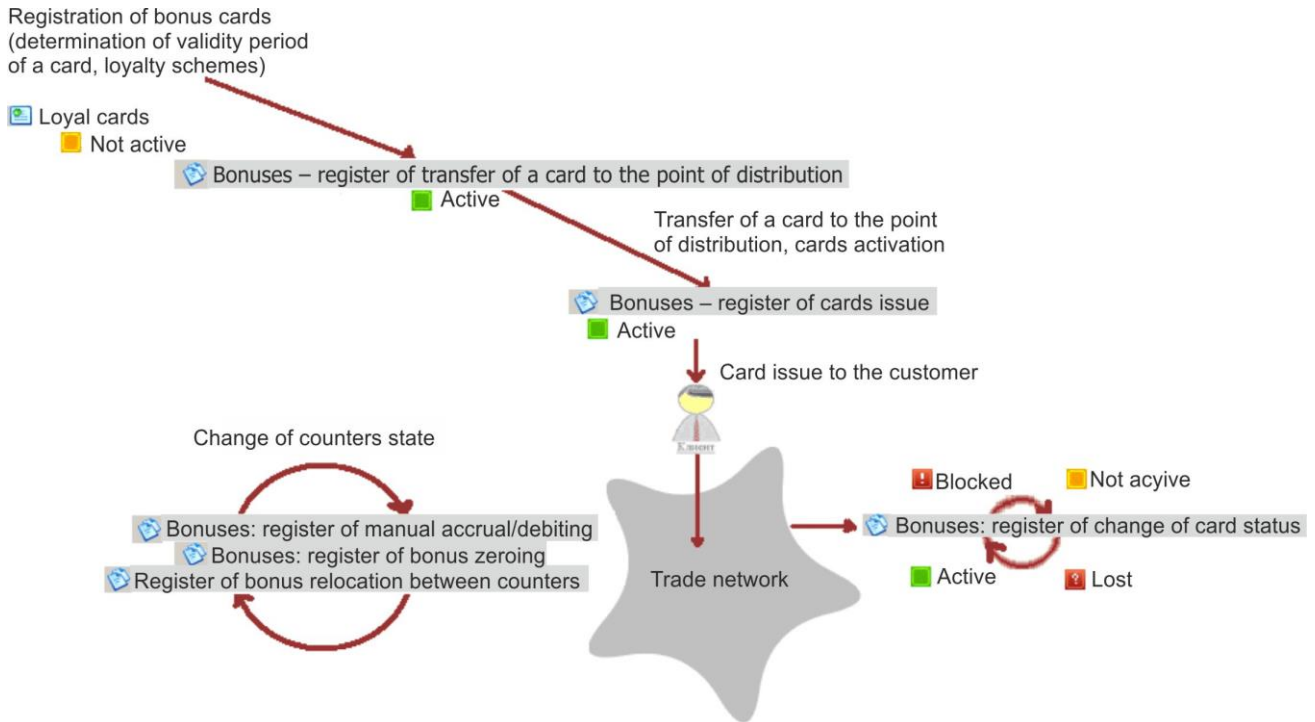
Figure 2. The scheme of circulation of bonus cards. Possible status of bonus cards and correlation with internal documents of the system.

**Formation of loyalty schemes**

The practice of application of various loyalty schemes determine the existence of short-term loyalty programs, aimed mainly at "luring" of a buyer, and long-term loyalty programs designed to "bind" the buyers by providing long-term bonus systems. Customer's reward can be of three types:

- various discounts (system of discounts);
- accrued bonus points (bonuses);
- one-time reward.

Loyalty scheme is a given rule, script or algorithm for calculating discounts or bonuses on the counters in case of certain events. All events of assessment of discounts or bonuses can be divided into two categories:

**Category 1.** Events that characterize the current sale:

- Time / date of sale. Performed if a purchase is made at a certain time of the day or day of the week. With the help of such a discount you can attract customers to visit points of sales in the "dead" hours and / or days of the week.
- Point of sale. Performed, if the sale was made at a certain point of sale or terminal.
- Sales related directly with customers. The discounts are charged to certain customers or customer groups on the day, coinciding with the momentous date of the client.
- Amount and sum of the current purchase.
- Product type or product group of the current purchase.

**Category 2.** Events characterizing customer's activity in a certain period of time or for all prior periods:

- Distribution of a value of a certain counter into a certain Попадание значения некоторого счетчика в определенный диапазон. Счетчики могут хранить общее количество посещений клиента, общее количество литров или сумму, на которые заправился клиент и т.п.

Thus, the system provides the following components for the preparation of loyalty schemes (each component allows you to set conditions for performing loyalty scheme (so called "factors") that are checked upon purchase):

- Time of a day;
- Day of a week;
- Date;
- Terminal;
- Point of sale;
- Customer's code;
- Customer's group;
- Momentous date;
- Client's sex;
- Sum;
- Product;
- Product group;

- Counters of visits for the current, past and all the periods of a separate customer and of all customers in total;
- Savings for the current, past and all periods of a customer;
- Amount;
- Operation type;
- System customer counters for the current, past and all the periods.

The process of calculation of discount begins with factor analysis, that is, conditions which allow a customer to receive this discount. The factor will be performed if the presented data will respond to the condition made by the factor. For example, performance of the factor is provoked by coincidence of date of birthday with the date of visiting shop by a customer. The connection between the event - factor performance and initiator of the event - any data of a customer should be appropriately reflected in the settings.

Factor or several factors may be subject to one discount. The discount determines the action that should be made in response to the execution of factors. The execution of factors entails execution of discounts. Result of the sale may be reducing the sum of the purchase, payment according to a different price list, other actions.

To combine discount a group of discounts is used. Except discounts it can include other groups of discounts, as well as its directly subordinate factors. Implementation of these factors will determine its performance and, consequently, the performance of subordinate discounts. Discount group allows you to set the rules of association of subordinate discounts and actions that the system can produce over customer data.

Factors, discounts and group discounts can be combined in the scheme. A scheme as a group allows you to specify merge algorithms of subordinate discounts and action when it is executed. The system provides different types of grouping of discounts / bonuses accrual:

- Choice of the minimum discount;
- Choice of the maximum discount;
- Addition of discounts;
- Multiplication of discounts;
- Choice of priority discount.

Discounts may be applied to:

- The price (a percentage discount or a discount sum);
- To the sum of fuel filling up (a percentage discount or a discount sum).

Under the conditions of accrual of discount / bonus of loyalty scheme, the given messages that indicate a calculating discounts / bonuses can be displayed on a check. The general algorithm of "eNGine System" with loyalty scheme is as follows:

| № | Actions performed | |
|---|---|---|
| 1. | Choice of the scheme | Server selects a code of loyalty scheme of a customer's bonus card. |
| 2. | Verification of factors | Within one issuer of the scheme (scheme / discount / group) the verification of factors execution is carried out. |
| 3. | Calculations of performed discounts | Using the algorithm and parameters of the discount object (quantity, price and cost). Priority of verification of elements is performed in accordance with their place in a hierarchical tree diagram. (Direction of the verification - from the top to the bottom). |
| 4. | Combination of performed discounts | One combined discount results from several discounts of the same level. |
| 5. | Limitation of the result of combination | Limitations are made at each level (for each group). |
| 6. | Getting a final discount | Server transmits the results of work to the terminal. |

**Reports and supporting documentation operating bonus cards**

**Report "Fuel filtering on loyal cards"**

Report "Fuel selection on loyal cards" is intended to receive all the statistics on fuel purchases by individual customers. Input parameters to generate report are the following (example of report is shown in Figure 3.:

• Period of report generation;

• Bonus card number on which filter is done.

Fuel filtering on loyal cards

Customer: 3066212387

Period: 01.01.2008 – 31.01.2009 23:59:59

| Date | Time | Item | Price | Quantity | Amount UAH | Operation | № Petrol station | Address of Petrol station |
|---|---|---|---|---|---|---|---|---|
| Card number: 3066214682 | | | | | | | | |
| Diesel fuel | | | | | | | | |
| 26.04.08 | 01:16:18 | Diesel fuel | 5,80 | 20,00 | 115,40 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 08.08.08 | 08:54:39 | Diesel fuel | 7,05 | 40,00 | 2810,30 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| | | Total on fuel: | 2 | | 60 | | 396,2 UAH | |
| 02.06.08 | 13:28:54 | Petrol A-92 | 6,05 | 20,00 | 120,40 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 06.05.08 | 14:37:48 | Petrol A-92 | 6,10 | 20,00 | 121,40 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 17.05.08 | 12:13:03 | Petrol A-92 | 6,15 | 10,00 | 61,20 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 20.06.08 | 19:37:37 | Petrol A-92 | 6,15 | 9,96 | 60,95 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 02.07.08 | 11:45:21 | Petrol A-92 | 6,20 | 10,00 | 61,70 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 03.07.08 | 16:44:20 | Petrol A-92 | 6,20 | 35,99 | 222,06 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 15.07.08 | 09:51:49 | Petrol A-92 | 6,30 | 20,00 | 125,00 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 22.07.08 | 16:06:49 | Petrol A-92 | 6,40 | 10,00 | 63,50 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 30.07.08 | 10:10:14 | Petrol A-92 | 6,40 | 10,00 | 63,50 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 08.08.08 | 18:04:57 | Petrol A-92 | 6,40 | 20,00 | 127,00 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 14.08.08 | 08:51:27 | Petrol A-92 | 6,30 | 20,00 | 125,00 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| 01.09.08 | 10:26:50 | Petrol A-92 | 6,10 | 10,85 | 65,71 | Debit | Gas station-1(15 Kovpaka srt.) | 15 Kovpaka str., Poltava |
| 01.10.08 | 13:30:14 | Petrol A-92 | 5,70 | 20,00 | 113,00 | Debit | Gas station-1(15 Kovpaka str.) | 15 Kovpaka str., Poltava |
| | | Total on fuel: | 13 | | 216,81 | | 1330,42 UAH | |
| Total on card: | | Total | Quantity | In the amount of | | | | |
| | | 15 | 276,81 l | | | | | 1726,62 UAH |
| Total on costomer: | | Total | Quantity | In the amount of | | | | |
| | | 15 | 276,81 l | | | | | 1726,62 UAH |

Figure 3.

## Report on customer distribution by city

This report provides information on number and percentage of bonus card users in each city. The report is generated on the current date and takes into account all bonus card holders regardless of their status.

| Report on customer distribution | | | |
|---|---|---|---|

As of 14.01.2009

| Rating | City | Number of customers | Percentage |
|---|---|---|---|
| 1 | Kyiv | 20450 | 99,80 % |
| 2 | Gorlovka | 20 | 0,10 % |
| 3 | Lutsk | 20 | 0,10 % |
| 3 | Total: | 20490 | 100 % |

Report was prepared by: Chepchyk V. M.

14.01.2009  14:50:25

Figure 4.

## Report on blocked cards

This report provides information on blocked cards during stated period.

## Report on cards issued at petrol station

This type of report provides information on issue of bonus cards in the selected point of sale for a certain period of time. The report contains information on number of bonus cards, date of transfer to distribution point, date of issue to the customer, system user who registered the operation of card issue. Report is presented in Fig. 5.:

| Report on cards issued at petrol station | | | | | |
|---|---|---|---|---|---|

Period: from 01.01.2008 to 01.12.2009  23:59:59

| Point of sale | Card number | Transfer date to petrol station | Transfer document № | Issue date | Customer |
|---|---|---|---|---|---|
| In region | | | | | |
| Petrol station "Nadezhda" 1 (85 Krasin str.) | 3066100118 | 15.01.2009 | ПК-22 | 15.01.2009 | Palchenko |
| Issue at petrol station "Nadezhda" 1 (85 Krasin str.): | | | | | 1 |
| Issue in region: | | | | | 1 |
| Issue in total: | | | | | 1 |

Report was prepared by: administrator

19.01.2009 15:34:52

Figure 5.

## Bonuses – History of customer purchases

This report is intended to display purchase history and consequent change of figures in bonus counters. Presentation of information is presented according to customer filter during the stated period. Example of report is shown in Fig. 6. Report is generated on the basis of the following input parameters:

• Period for which the report is generated;

• Name of card holder;

• Set of counters on which report is generated.

History of customer purchases

Customer: kva 2

Period: from 01.01.2008 to 31.01.2009  23:59:59

| Date | Time | Item | Price | Quantity | Amount UAH | Operation | № Petrol station | Before | After |
|---|---|---|---|---|---|---|---|---|---|

By counter: №1 – counter №1 Liquefied gas

| Card number: 7767000000002205 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Diesel fuel EURO | | | | | | | | | |
| 19.12.08 | 16:58:27 | Diesel fuel EURO | 1,00 | - 6,52 | - 6,00 | Refund | Test 2 | 0,0000 | 0,0000 |
| 19.12.08 | 16:57:09 | Diesel fuel EURO | 1,00 | - 6,00 | - 5,52 | Refund | Test 2 | 0,0000 | 0,0000 |
| 19.12.08 | 17:13:41 | Diesel fuel EURO | 1,00 | 2,00 | 1,84 | Debit | Test 2 | 0,0000 | 0,0000 |
| 19.12.08 | 16:54:48 | Diesel fuel EURO | 1,00 | 10,00 | 9,20 | Debit | Test 2 | 0,0000 | 0,0000 |
| 19.12.08 | 16:56:31 | Diesel fuel EURO | 1,00 | 10,87 | 10,00 | Debit | Test 2 | 0,0000 | 0,0000 |
| Total on item: | | | 5 | | | 9,52UAH | | | 0 |
| Total on card: | | Total | | In the amount of | | | | Bonuses accrued | |
| | | 5 | | | | 9,52 UAH | | | 0 |

| Total on counter: | Total | | In the amount of | | | Bonuses accrued | |
|---|---|---|---|---|---|---|---|
| | 5 | | | | 9,52 UAH | | 0 |

Figure 6.

## Report on popular products by customer

Information on types of goods services used by a particular customer is very useful for statistics. It is possible to receive such data through report "Report on popular products by customer."

This report is provided in filter of customer on selected counters, i.e. provides information on the number of products, quantity of purchases and number of bonuses accrued as result of these operations separately on all types of counters registered in the system. Example of Report is shown in Figure 7. The report is generated on the basis of the following input parameters:

• Period for which the report is generated;

• Name of card holder;

• Set of counters on which report is generated.

Report on popular products by customer

Customer: Palchenko V. G.

Period: from 01.01.2008 to 31.01.2009  23:59:59

| Rating | Product | Quantity | Amount UAH | Bonuses accrued | Percentage from total number of bonuses |
|---|---|---|---|---|---|
| By counter: №1 – Counter №1 Liquefied gas | | | | | |
| 1 | Gas Propane-Butane_m | 100,00 | 400,00 | 0,0000 | 0 % |
| 2 | Gas Propane-Butane | 16,00 | 56,00 | 2,0000 | 7,21 % |
| 3 | Petrol A95+ | 18,60 | 54,00 | 1,2500 | 4,50 % |
| 4 | Diesel_fuel_m | 110,00 | 55,00 | 10,0000 | 36,04 % |
| 5 | Diesel_fuel_+_m | 56,00 | 266,00 | 6,0000 | 21,62 % |
| 6 | Diesel fuel TIR | 37,00 | 170,20 | 5,5000 | 19,82 % |
| 7 | Diesel fuel | 10,00 | 50,00 | 3,0000 | 10,81 % |
| 8 | Diesel fuel EURO | 10,35 | 9,52 | 0,0000 | 0% |
| Total on counter | | | 1061,52 UAH | 27,75 | 100% |

Figure 7.


## Report on average receipt amount

The given report is intended to receive information on average amount in all receipts for separate points of sale and quantity of bonuses accrued on each point of sale. The report is represented on Fig. 8.

The report is generated on the basis of the following entered parameters:

- Period of report generated;

- Point of sale;

- Set of counters on which report is generated.

| Report on average receipt amount at petrol station |
|---|

Period: from 01.01.2008 to 31.01.2009  23:59:59

By counter №1 – "Counter №1 Liquefied gas"

| Point of sale | Average receipt amount | Number of customer service provisions | Number of customers | Customer attrition UAH | Bonuses accrued |
|---|---|---|---|---|---|
| Test 2 | 20,65 | 92 | 2 | 1899,72 | 0,00 |
| Total for period | | 92 | | 1899,72 | 0 |

Report was prepared by: Administrator

20.01.2009  17:17:28

Figure 8.


## Report on the most popular points of purchase

Reception of information on visiting points of sale by certain customer, number of visits, amount spent and number of bonuses received is possible by means of report «Bonuses – Report on the most popular points of purchase». The report is presented on Fig. 9. The report is formed on the basis of the following entered parameters:

- Period of report generated;

- Name and Surname of card holder;
- Set of counters on which report is generated.

| Report on the most popular points of purchase |
| --- |

Customer: kva 2

Period: from 01.01.2008 to 31.01.2009  23:59:59

| Average receipt amount | Point of sale | Number of visits | Spent, UAH | Bonuses accrued |
| --- | --- | --- | --- | --- |
| By counter №1 – "Counter №1 Liquefied gas" | | | | |
| 1 | Test 2 | 1 | 9,52 | 0,00 |
| | | Total on counter: | 9,52 | 0 |
| By counter №2 – "Counter №2 Petrol A-76" | | | | |
| 1 | Test 2 | 1 | 9,52 | 0,00 |
| | | Total on counter: | 9,52 | 0 |
| By counter №3 – "Counter №3 Petrol A-80" | | | | |
| 1 | Test 2 | 1 | 9,52 | 0,00 |
| | | Total on counter: | 9,52 | 0 |

Figure 9.

## Customers' Momentous Days

Report "Customers' Big Days" is used to receive the list of customer users of bonus cards whose big days fall to specified period. Report is presented on Fig. 10.

Customers' Momentous Days

| Name and Surname | Date | City | Address | Zip code | Telephone | e-mail | Additional telephone |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Shcherbak | 09.01.2009 | Kyiv | Solomona pr. | 01063 | 543 12 99 | | |
| Vasylchenko | 09.01.2009 | Mukachevo | Soborna Str. | 423004 | | | |

Figure 10.

## Report on accruing bonuses in manual mode

Report on accruing bonuses in manual mode is intended to view information about how many bonuses have been accrued/written off in manual mode during the set period. The information is given separately on each customer. The report (see Fig. 11) is generated on the basis of following report parameters:

- employees who accrued/wrote off bonuses;
- card users whose information on accruing bonuses is displayed;
- set of counters on which the information on accruing bonuses is displayed in the report.

The report contains the following information on each customer user of bonus card:

- Employee who accrued/wrote off bonuses;
- Date of bonuses accrual/write-off;
- Number of accrued/written off bonuses;

- Reason for operations;
- Total number of accrued bonuses with write-offs and accruals included.

| Employee | Date | Bonuses accrued | Reason for accrual | Bonuses written off | Reason for write-off | Total |
|---|---|---|---|---|---|---|
| Counter: Counter №1 Liquefied gas | | | | | | |
| Administrator | 18.12.2008 07:06 | 5,0000 | Operator error | 0,00 | | 5 |
| Administrator | 18.12.2008 07:03 | 0,0000 | | 1,00 | Operator error | 1 |
| Total by "Administrator" Employee | | 5 | | 1 | | 4 |
| Total by counter №1 – "Counter №1 Liquefied gas" | | 5 | | 1 | | 4 |
| Total on report | | 5 | | 1 | | 4 |

Report was prepared by: Administrator

20.01.2009   12:34:39

Figure 11.


## Analysis of system operation on bonus cards

Analysis on bonus cards operation is carried out by means of built in modules **"eNGine Client"**, so-called, analysis cubes.

Analysis cube is a working form element representing a certain constructor with modules of values or parameters which serve for organisation of data tables with possibility of viewing, printing or exporting. Data is possible to be saved in the following formats: MS Excel, HTML, XML, RTF, Metafile (WMF), PDF.

**"eNGine Client"** base configuration contains forms of sales analysis on bonus cards, sales analysis with transactions included, statistics on bonus cards holders.

Basic elements of analysis cube are the parameters modules presented in the form of rectangles containing names of characteristic values or work criteria. Sets presented in cube modules depend on the external form chosen for given analysis and its subject respectively.

Data of work criteria for analysis carry-out is organised or designed by means of chosen modules in table rows and columns.

Organisation of work with cube analysis, except display of numerical tabular values, provides visual labels of changes and colour schemes of ranging analyzed criteria to simplify work for user. Signs ▼ and ▲ near the values in the table specify decrease and increase of value for given criteria respectively, whereas short-term pressing of mouse pointer on table column causes illumination of cells which ranges values by "hot/cold" principle using spectrum of rainbow colours.

Designed configuration of analysis cube can be stored and downloaded for further use.

**"eNGine Client"** working forms with cube analysis represent the instrument for carrying out various research and analytical operations and are limited only by general values of base criteria and completeness of cube models.


## Sales analysis

Performance analysis on bonus cards is realised by means of analysis cube design. Basic criteria of using contactless bonus cards in commercial network are amounts and quantitites of received goods or services.

Elements of analysis cube can be designed on the basis of the following modules: Year, Quarter, Month, Number, Point of sale, Period, Card holder, account type, customer's place of residence, customer's phone number, customer's age, customer's address, Operation, Terminal, Card (bar-code).

## Statistics on bonus card holders

"Statistics on bonus card holders" cube uses to carry out analysis of number of bonus card holders on different customer criteria such as age, place of residence, region, district, administrative district of customer's residence.

Modules of analysis cube of given form represent the following possible criteria of values for design:

- Name and Surname;
- Age;
- Age range;
- Sex;
- Place of residence;
- Region;
- District;
- Administrative district.

Working form of statistics on bonus card holders provides current statistics for analysis without timing.

## Features of data exchange with external systems

**"eNGine Client"** base configuration contains date upload module:

- Directory of points of sales;
- Directory of types of accounts.

Data can be saved in file of DBF or CSV format. Data upload is realised on the basis of SQL-inquiries. Built in editor of SQL-inquiries allows to extract the necessary data from the base. Independent designing of data upload modules in system is not provided.

## Expansion of "eNGine Client" system functions

1. Presence of any functions not clearly described in the given document is subject to specification.

2. Development of system functions is possible and is carried out by conclusion of corresponding agreements on system completion.

## Interaction with other systems

Bonus system can operate:

- in joint under the control of «ND-797» Cash register from Group of companies "ND" and some other manufacturers;
- in joint with "ND SELF-POS" automatic payment kiosk.