

# WAY4 Client and Contract Classifiers

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"OBSOLETE Contract Parameters handbook" Form
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## Introduction

This section document is intended for bank or processing centre employees responsible for configuring WAY4 and contains information about configuring and using client and contract classifiers.

When working with this document, it is recommended to use the following resources from the WAY4 documentation series:

- Events
- Products and Contract Subtypes
- WAY4™ Service Packages
- Usage Limiters
- Standing Payment Orders
- Configuration of Client Messages
- Advanced Applications Module R2
- Daily Procedures
- Preferred Counterparties
- Balance Types

The following notation is used in the document:

- Screen form names are shown in *italics*.
- Screen form button names are enclosed in square brackets, as in [Approve].
- Sequences for selecting user menu items are given with arrows, for example: "Configuration Setup → Contract Types".
- Warnings about potentially hazardous situations or actions are marked with the  sign.
- Messages marked with the  sign contain information about important features, additional options, or the best use of certain system functions.

# Chapter 1. Client and Contract Classifiers

## General Concept

### Purpose of Classifiers

Client and contract classifiers allow flexible configuration of business processes in WAY4:

- Classifiers make it possible to segment clients and contracts (separate clients and contracts into groups) depending on the current status of a client and/or contract.
- Classifiers make it possible to set conditions for executing various actions in the system, depending on the current status of a client and/or contract.
- Joint use of classifiers and Events make it possible to configure a chain of linked actions, where a change in the classifier value (change in the status of a client or contract) on the one hand, can be initiated by an Event, and on the other hand, can cause an Event to open.

Classifiers can be used, for example, to address the following tasks:

- Indicators of client importance (VIP) can be stored using classifiers:
  - The possibility to store indicators of client importance on the client, and not the Product level makes it possible to simplify Product configuration. When segmenting clients on the Product level, a large number of Products must be created with minimal differences for different client groups. Classifiers make it possible to decrease the set of Products used.
  - This possibility allows optimization of customer support.
- Classifiers can be used to store indicators that a cardholder belongs to a group of insiders for further use of this data in reports.
- Classifiers can be used to set client agreement to disclosure of personal data to third parties (for example, to a credit history bureau). In this case, classifiers can be used to generate reports and when exporting data to third party systems.
- Classifiers can be used for marketing tasks (for example, for mass mailing of advertisements).
- Classifiers can regulate the assignment of tariffs, etc., to a contract.

### Classifier Types

Classifiers are divided into the following types:

- Standard – system classifiers. Classifiers predefined in WAY4 (usually system classifiers are included in the delivery package and do not need to be preset by users). Distinguishing characteristics of system classifiers:

- A number of client and contract parameters play the role of system classifiers, for example, balance type and client type.
- The list of a system classifier's values is determined by the possible values of the corresponding client or contract parameter.
- A change in the value of a system classifier for a client or contract is defined by a change in the value of the corresponding client or contract parameter. Client and/or contract parameters can change when processes configured in the system regulating the contract lifecycle are executed (for example, the transfer of a contract from one behavior type to another due to loan delinquency).
- Primary – user classifiers requiring presetting. Distinguishing characteristics of this type of user classifier:
  - User classifiers and their values are configured by WAY4 users.
  - This type of classifier can be used to change user classifier values manually (through a form, with applications) and automatically (with Events).
  - Generally, user classifiers have arbitrary codes. In a number of cases, predefined codes are set for user classifiers. These classifiers require additional settings.
- Secondary – user classifiers requiring presetting. Distinguishing characteristics of this type of user classifier:
  - User classifiers and their values are configured by WAY4 users.
  - It is recommended to use this type of classifier to configure automatic change of classifier values (when an Event is opened). It is not recommended to assign (change) values for this type of classifier manually through forms.

Depending on the means for storing data on the current classifier value assigned to a client or contract, classifiers can be separated into stored and dynamic classifiers:

- Stored classifiers – changes in the values of such classifiers are registered in a special table (classifier log). When it is necessary to determine the current value of a stored classifier, information is taken from this table. Several system classifiers, such as balance types and behavior types, and all user classifiers are stored classifiers.
- Dynamic classifiers – changes in the values of such classifiers are not recorded in the classifier log. Each time the current value of a calculated classifier must be determined, the corresponding client or contract parameter is referred to. A number of system classifiers are dynamic classifiers; for example, client type and client country.

## Main Principles of Use

The general scheme of client and contract classifier use:

### 1. Configuring classifiers and their values:

- For user classifiers – the list of classifiers and their values must be configured in advance (see the section "Configuring User Classifiers").

- For system classifiers – the list of classifiers must be configured in advance (the list of codes for system classifiers see in the section "Configuring System Classifiers"). The list of values of a parameter playing the role of a system classifier is set when configuring the corresponding business processes (for example, behavior type is set when configuring loan loss reserves). If necessary, custom representations of system classifier values can be created (the names of classifier values changed), see the section "Configuring System Classifiers".



"Configuration Groups" classifiers can be used as Product system classifiers.

- ◆ When configuring "Configuration Groups" classifiers with a link to the "APPL\_PRODUCT" table, these "Configuration Groups" classifiers are shown in the list of client and contract system classifiers.
- ◆ WAY4 Products are flagged with these classifiers.
- ◆ These are dynamic classifiers. That is, if it is necessary to specify the current value of a classifier (specify a contract's Product), contract parameters are referred to directly (to the value of the "Configuration Groups" classifier).

For more information about configuring "Configuration Groups" classifiers, see the section ""Configuration Groups" Classifiers" of the document "Products and Contract Subtypes".

## 2. Configuring rules for classifier use:

- Changing the value of a user classifier when an Event opens – an Event can be configured that will change the value of a client or contract classifier, see Fig. 1. Moreover, conditions can be set for changing the classifier value. For more information, see the section "Changing Classifier Values with an Event".

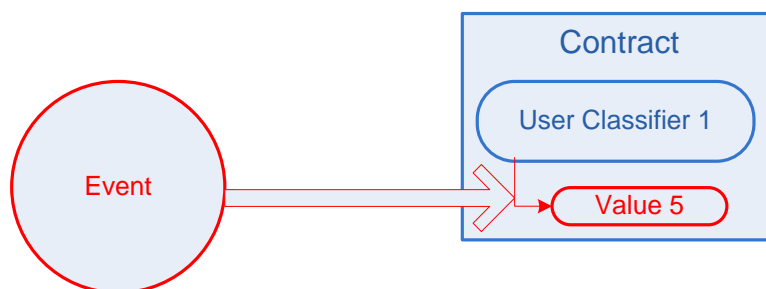


Fig. 1. Assigning a specific value to a classifier when an Event opens

- Opening an Event when a client or contract user classifier value changes, see Fig. 2 (For more information, see the section "Changing Classifier Values with an Event").

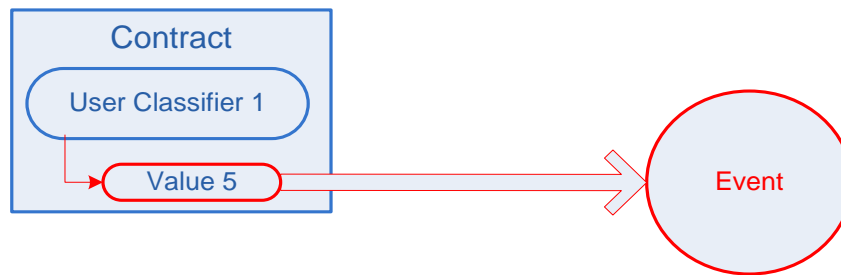


Fig. 2. An Event opens when a classifier is assigned a specific value

- Executing an action in the system depending on the current status of the client or contract (depending on the current values of client and contract user and system classifiers), see Fig. 3. For example, activating a usage limiter or payment order, sending a message, assigning tariffs to a contract. For more information, see the section "Executing Actions Depending on Classifier Values".

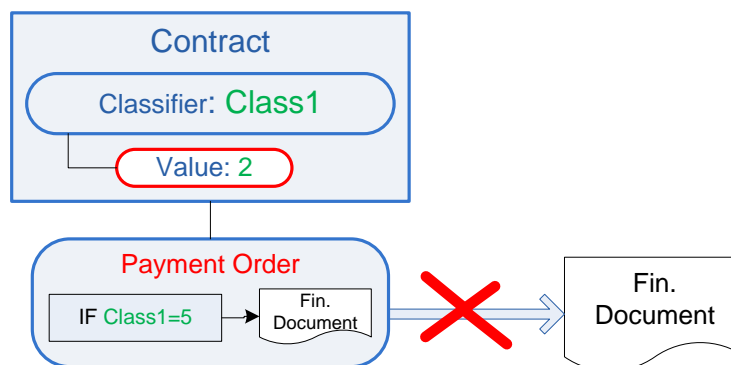



Fig. 3. Generation of a payment order document when a classifier has a specific value

- Configuring rules for generating lists of Products that can be offered to a client (depending on the values of classifiers assigned to the client). For more information, see the section "Generating a Product List for a Client".

### 3. Changing a client or contract classifier value.

- For user classifiers, this can be executed in the following modes:
  - ◆ When an Event opens (see Step 2).
  - ◆  When a classifier value changes according to an Event, the current value of the classifier may need to be analysed if a condition is set for changing the value. In this case, step 5 is executed in advance.
  - ◆ Manually (for more information, see the section "Manually Changing Classifier Values").
  - ◆ With an application from the Advanced Applications Module. See the section "Changing Classifier Values using the Advanced Applications Module".
- For system classifiers – values of parameters playing the role of system classifiers can be changed when processes configured in the system are executed, when Events arise in the contract lifecycle process, and when changes are made to client data records. For example, the transfer of a contract from one behavior type to another as a result of loan delinquency



or a change in the bank office at which the client will receive account statements.

4. Changes in stored classifier values are automatically registered in the classifier log.
  - Changes in the values of all stored classifiers (all user classifiers and stored system classifiers, see the section "Classifier Types") are recorded in the classifier log. That means that when a client or contract is assigned a specific value of such a classifier, a corresponding record is generated in the classifier log.
  - Changes in dynamic system classifiers are not recorded in the classifier log (see the section "Classifier Types").

For more information about the classifier log, see the section "Viewing Client and Contract Classifier Data".

5. The current classifier value assigned to a client and/or contract is determined when it is necessary to execute an action requiring advance analysis of the classifier value (for example, generation of a standing payment order document only when the classifier has a specific value).



The procedure for determining classifier values can vary depending on whether the classifier is stored or dynamic (see the section "Classifier Types").

Resulting from analysis of classifier values, corresponding actions are (or are not) executed in the system. For example, a usage limiter or payment order is activated, etc.

## Configuring Classifiers


### Configuring User Classifiers with Arbitrary Codes

The list of classifiers (user and system) is found in the "User Classifiers" form (Full → Configuration Setup → Common Handbooks → User Classifiers), see Fig. 4.

Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info	On Off Mode	Domain Code
Option_01_0272	OPTION_01_0272		Classifier	OK value	Any Contract				Primary	BLOCK_CODE=BLOCK_CODE_01;	Yes	FI_0272
Option_blocked_by_DLQ	OPTION_BY_DLQ	PROD_OPTION	Classifier	Off	Any Contract				Primary	BLOCK_CODE=BLOCK_CODE_DLQ;	Yes	FI_0272
PBOX-29742	PBOX-29742		Classifier		Any Contract	Private	Account	Issuing	Standard			
Product	PRODUCT		Classifier		Any Contract				Standard			
Product Group	PRODUCT_GROUP		Classifier		Any Contract				Standard			
REGION_CS	REGION_CS		Classifier	Default Region	Any Contract				Secondary			
RESULT_ACTION1	RESULT_ACTION1		Classifier		Any Contract				Primary	RESULT_ACTION=CA;		

Fig. 4. List of user classifiers

This form contains the following fields:

- *Name* – classifier name.
- *Code* – classifier code. The classifier code must be unique in the system.
  -  If when configuring a user classifier its code is the same as the code of a system classifier or that of another user classifier, a corresponding error message will be displayed on the screen.
- *Group Code* – classifier group code. This code is used for additional grouping of classifiers. The value can be entered in the field from the keyboard, or selected from a list generated with custom handbooks (see the section "Custom Handbooks" of the document "Form Builder").
- *Category* – classifier category ("Classifier" or "Status"). This value is used for additional grouping of classifiers. This field may be left empty.
- *Default Value* – default value of the classifier (for more information, see the description of the *Classifier Value* field in the section "Changing Classifier Values with an Event"). The field value is selected from a drop-down list of values configured for this classifier in the "Values..." form (see Fig. 5).
- *Applies To* – this field specifies objects for which this classifier will be available (objects to which this classifier value may be assigned; objects for which the classifier value is specified when the corresponding requests to a contract in the hierarchy are made).
  - If the *Applies To* field is not filled in, when a client or classifier value is set, this classifier will be set in the client's contract (contracts) (accordingly, the classifier will be searched for on the contract level). In this case, when searching for a classifier, only classifiers in contracts are analysed.

If the *Applies To* field is filled in, a classifier is set/searched for depending on the value of the field, regardless of where the classifier is set – in the client or in the contract. See the description of *Applies To* field values below.


- "Any Contract" – a classifier can be set in any contract in a contract hierarchy. When a contract gets a request about a classifier value, a search for the value is made only on the level of the contract for which the request was made. For the search to be continued higher up in the hierarchy, the `SKIP_MODE=IF_EMPTY`; tag must be set in the *Add Info* field of the "User Classifiers" form;.
- "Main Contract" – when a contract receives a request about the classifier value, a search for the classifier value is made, beginning with the top contract in the "Main/Sub" hierarchy (on the settlement contract level).
- "Client" – the classifier is available for client records. When a contract receives a request about the classifier value, a search for the value is made on the client level.
- "CP Client" – this value is reserved for use in the Customer Profile module. The Customer Profile module is not included in the standard configuration of WAY4 and is supplied according to a separate agreement with the WAY4 vendor.
- "Top Contract" – a classifier is set for the top contract in the hierarchy. When a contract receives a request about the classifier value, a search for the classifier value is made on the level of the top contract in the hierarchy. If there are no "Liability" relation types in the contract hierarchy, this value will be used in the same way as the "Main Contract" value.
- "Product" – a classifier is set/searched for in a Product (in the *Default Value* field of the "Classifiers for <Product name>" form (Full → Configuration Setup → Products → Product Definition → Products → [Classifiers])). When this value is specified, a classifier cannot be set for a contract or client. See the section "Contract Classifiers" of the document "Products and Contract Subtypes".
- "Institution" – a classifier is set/searched for in a financial institution (in the *Default Value* field of the "Classifiers for <name of FI>" form (Full → Configuration Setup → Main Tables → Financial Institutions → [Classifiers])). When this value is specified, a classifier cannot be set for a contract or client. See the section "Default Contract Classifiers for Financial Institutions" of the document "Financial Institutions".




The *Applies To* field is used to generate a list of available classifiers for clients and contracts.

- *Client Cat* – client type ("Private" – individual, "Commercial" – legal entity, "Accountant" – bank branch).
- *Contract Cat* – contract category ("Card" – card contract, "Account" – account contract, "Device" – device contract).
- *Product Cat* – Product category:
  - "Issuing" – issuing contract Products.
  - "Acquiring" – acquiring contract Products.
  - "Accounting" – Products for bank system contracts. This value remains for compatibility with previous WAY4 versions.

- "Bank Accounting" – bank contract Products.

 The value selected in the *Applies To* field determines whether the *Client Cat*, *Contract Cat*, and *Product Cat* fields are available. For example, when the "Client" value is selected in the *Applies To* field, only the *Client Cat* field of this group will be available.

 The fields *Client*, *Client Cat*, *Contract Cat*, and *Product Cat* are used in addition to the *Applies To* field to generate a list of available classifiers for a client and contract (to filter the classifier list). This list is used in the following cases:

- ◆ When manually assigning classifier values to clients and contracts (see the section "Manually Changing Classifier Values").
  - ◆ When configuring changes in a classifier value according to an Event (see the section "Changing Classifier Values with an Event").
- *Log Changes* – the field determines how changes in a classifier value will be logged in the classifier log (see the section "Viewing Client and/or Contract Classifier Data"). Possible values:

- "Value" – changes in classifier values are registered in the classifier log. When a classifier value is set, the new and old (previous) value are compared and if they differ, the new value is logged.

If at the time of setting a classifier value, the contract has a default value set in the Product, contract subtype, financial institution, or in the settings of the classifier itself (i.e. the classifier is not set directly in the contract), the new value is compared with the default value and if they differ, the new value is logged.

- "Value or Reason" – changes in a classifier value or changes in the reason for assigning a classifier value (see the *Reason* field in the section "Manually Changing Classifier Values") are logged. I.e. logging is not performed only when the values of both the *Value* and *Reason* fields of the new and previous classifier value match.

If at the time of setting a classifier value, the contract has a default value set in the Product, contract subtype, financial institution, or in the settings of the classifier itself (i.e. the classifier is not set directly in the contract), the new value is compared with the default value according to the rules described above. If the new value matches the default value, but the values in the *Reason* field differ, the value is logged.

- "Own Value" – changes in a classifier value that are made directly in a contract are logged. When setting a classifier value, the classifier's new and old (previous) value are compared, and if they differ, the new value is logged.

If at the time of setting a classifier value, the contract has a default value set in the Product, contract subtype, financial institution, or in the settings of the classifier itself (i.e. the classifier is not set directly in the contract), the default value **is not analysed** as the classifier's previous value. I.e., when a classifier value which corresponds with the default value is set, the value is logged.

- "Own Value or Reason" – changes in a classifier value or changes in the reason for assigning a classifier value (see the *Reason* field in the section "Manually Changing Classifier Values") that are made directly in a contract are logged. I.e. logging is not performed only when the values of both the *Value* and *Reason* fields of the new and previous classifier value match.

If at the time of setting a classifier value, the contract has a default value set in the Product, contract subtype, financial institution, or in the settings of the classifier itself (i.e. the classifier is not set directly in the contract), the default value **is not analysed** as the classifier's previous value. I.e., when a classifier value which corresponds with the default value is set, the value is logged.

- *Role* – classifier type:
  - Primary – user classifier that can be set (changed) from forms.
  - Standard – system classifier.
  - Secondary – user classifier that is automatically assigned and cannot be changed from forms.
- *Add Info* – used to enter additional parameters in tag form. See the section "Tags used when working with classifiers" of the "Setup Tags" document.
- *On Off Mode* – this field is used when setting up Product options. "Yes" is set for classifiers that only have two values – "positive" and "negative" (see the section "Blocking Product Options").
- *Domain Code* – this field is used for calculated classifiers (see the section "Calculated Classifiers (Decisions)").

The [Validate] button is used to validate classifier fields. For example, the uniqueness of the values in the *Name* and *Code* fields is validated, the *Applies To* field (if the field is empty, the message "Classifier "applies to" is empty" is shown). For system classifiers, when this button is clicked, a check is made that the *Is Primary* field contains the "Standard" value and classifier values are automatically filled in (see the section "Configuring System Classifiers").

The [Mapping] button is used to individually mark a client or contract classifier using a "Configuration Groups" classifier (batch marking is available in the standard form "Configuration Groups", for more information about "Configuration Groups" classifiers, see the section "Configuring "Configuration Groups" Classifiers" in the document "Products and Contract Subtypes").

User classifier values are set in the "Values for <name of classifier>" form (see Fig. 5), opened from the "User Classifiers" form (see Fig. 4) by clicking the [Values] button.

Values for Test client classifier									
						1 of 3		b x	
Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To	
3	Test value 1	CL_TEST_VALUE_1		Yes		Yes	00/00/0000	00/00/0000	
1	Test value 3	CL_TEST_VALUE_3		No		Yes	00/00/0000	00/00/0000	
2	Test value 2	CL_TEST_VALUE_2		Yes		Yes	00/00/0000	00/00/0000	
Ins Del Query									

Fig. 5. User classifier values

This form contains the following fields:

- *Weight Factor* – classifier value priority. This parameter makes it possible to rank classifier values. The field value is set in numeric form (0, 1, etc.) and a larger value indicates a higher priority. This parameter is used to set conditions for transferring from one classifier value to another. For more information, see the section "Changing Classifier Values with an Event".
- *Name* – name of classifier value.
- *Code* – code of classifier value. The classifier value code must be unique within this classifier.
- *Result Event Code* – name of the Event type registered in the system (see the section "Event Types" of the document "Events"). This Event will automatically open when a client or contract is assigned this classifier value (and close when a classifier value is changed).

Note that an Event will be triggered once for each (corresponding) classifier value, with the exception of situations when the same Event must be triggered for two sequential classifier values. For example:

- Event "A" is linked to classifier value "Value 1" and classifier value "Value 2".
- A contract is assigned classifier value "Value 1" for which Event "A" is triggered (previously the classifier value, for example, wasn't assigned).
- If the contract is assigned classifier value "Value 2" (i.e. if the classifier value changes from "Value 1" to "Value 2", Event "A" will not be triggered again.



If when changing a classifier value, a contract already has an active Event with the code specified in the classifier's *Result Event Code* field, the Event will not be opened again. This means that if the Event specified in the classifier's *Result Event Code* field is opened manually, the Event will not be opened when the classifier value changes. Therefore, it is necessary to be especially careful when manually opening Events specified in the *Result Event Code* field of classifiers.



If a classifier value is assigned to a client, the Event from the *Result Event Code* field will be opened for all this client's contracts on the condition that this Event is registered in the Service Package of the contract.

- *Is OK Value* – a marker allowing the classifier value to be evaluated as positive ("good") if the value is "Yes" or negative ("bad") if the value is "No". This marker is of a conditional character and is used to set rules for transferring between classifier values according to an Event (see the section "Changing Classifier Values with an Event"). For example, it is possible to set a transfer from a positive value to a negative one; and prohibit the opposite.

General rules for changing a classifier's values when an Event opens:

- A "bad" value is not replaced with a "bad" value that has a lower priority.
- A "bad" value is replaced with a "bad" value that has a higher priority.

- A "good" value is not replaced with a "good" value that has a lower priority.
- A "good" value is replaced with a "good" value that has a higher priority.
- A "good" value is always replaced with a "bad" value, regardless of priority.
- A "bad" value is not replaced with a "good" value, regardless of priority.
- For more information about setting up conditions for changing from one value to another, see the section "Changing Classifier Values with an Event").
- *Add Info* – additional information. This field can be used to enter additional parameters in the form of tags.
- *Is Active* – classifier activation marker:
  - "Yes" – the value is active. An active classifier value can be assigned to a client or contract.
  - "No" – the value is inactive. An inactive value cannot be assigned to a client or contract. Inactive values are not shown in the list of classifier values when configuring changes to classifier values according to an Event (see the section "Changing Classifier Values with an Event"), as well when manually changing client and contract classifier values (see the section "Manually Changing Classifier Values").
- *Date From, Date To* – fields for entering dates to specify the time interval during which this classifier is active (these fields are filled in when the "Yes" value is specified in the *Is Active* field).

## Configuring Hardcoded User Classifiers

Hardcoded user classifiers make it possible to perform additional actions or check. Contact the WAY4 vendor for setup of these classifiers.

Examples of using hardcoded classifiers:

- Classifier used for MasterCard ALM (Account Level Management) programs.
- Classifier used when working with VAU (Visa Account Updater) and MABU (MasterCard Automatic Billing Updater) functionality.

## Configuring System Classifiers

System classifiers are created by WAY4 users; however, the codes of these classifiers are predefined in WAY4. The list of codes for system classifiers that can be created is provided below.

- "DEVICE\_TYPE" – code of the classifier corresponding to device type (POS terminal model, ATM type, imprinter type).
- "TERM\_CAT" – code of the classifier corresponding to device category ("ATM"/"POS"/"Imprinter"/ "Infokiosk").
- "F\_I" – code of the classifier corresponding to financial institution.

- "F\_I\_BRANCH" – code of the classifier corresponding to the *Branch Code* identifier of the financial institution. There may be several financial institutions in WAY4 with the same value in the *Bank Code* field and different values in the *Branch Code* field.
- "BRANCH" – code of the classifier corresponding to financial institution branch.
- "COUNTRY" – code of the classifier corresponding to country.
- "PRODUCT\_GROUP" – code of the classifier corresponding to Product group.
- "CONTR\_SUBTYPE" – code of the classifier corresponding to contract subtype.
- "CLIENT\_TYPE" – code of the classifier corresponding to client type (Full → Configuration Setup → Client Classifiers → Client Types).
- "BEH\_TYPE" – code of the classifier corresponding to contract risk group (behaviour type).
- "CONTR\_STATUS" – code of the classifier corresponding to contract status.
- STOP\_LIST\_STATUS – code of the classifier used to put a client in a stop list.
- "DLQ\_LEVEL" – code of the classifier used to define the level (depth, status) of a contract's delinquency. The classifier is based on balance types used for delinquent debt. See the section "Configuring the "DLQ\_LEVEL" System Classifier".
- A classifier with a code that corresponds to a balance type code is a system classifier, if in this balance type "Classifier" is specified in the *Is State* field of the "Balance Types" form. See the section "Registering Balance Types" of the document "Balance Types".
- A classifier with a code that corresponds to the code of a contract parameter is a system classifier, if "Classifier" is specified in the *Mirror To* field of the "Contract Parameters Setup" form for this parameter. See the section "Contract and Client Custom Parameters".

If it is necessary to create a system classifier based on a contract or client parameter, create this classifier manually in the "User Classifiers" form. The system classifier should be assigned the "Standard" value in the *Role* field


In general, the list of system classifier values is created (refreshed) automatically:

- When the "User Classifiers" form is opened (when the menu item "Full → Configuration Setup → Common Handbooks → User Classifiers" is executed).
- By Clicking on the [Validate] button in the "User Classifiers" form.
- When the menu item "Full → Configuration Setup → Common Handbooks → Standard classifiers markup" is executed.




When creating a new value for a parameter that corresponds to a system classifier, the list of parameter values and the list of classifier values must be synchronised using the menu item "Full → Configuration Setup → Common Handbooks → Standard classifiers markup" for correct work with classifiers.


The "DLQ\_LEVEL" classifier, classifiers corresponding to balance types, and custom classifiers are exceptions. Values are entered manually for these system classifiers. Values for a classifier that corresponds to a balance type are linked with "Threshold" tariffs.

 **STOP\_LIST\_STATUS** is a standard classifier, but its values are configured manually.

If WAY4Web is used (Customer Service Workbench), give STOP\_LIST\_STATUS the "Primary" role and configure the classifier value manually. See the section "Events, States & Classifiers" of the document "Configuring Customer Service Workbench" ("Customer\_Service\_Configuration.pdf" from the WAY4Web distribution).

 When automatically generating a list of values for the CONTR\_STATUS classifier, records are searched for in the "Contract Statuses" form (Full → Configuration Setup → Contract Types → Contract Statuses). Sorting is performed by contract category. I.e. if several records are found with the same code (*External Code* field) and different contract categories (the value of the *External Code* field is unique in the contract category), a record with the "Account" category (first record according to alphabetic order) will be added to the list of classifier values. A classifier value's name can be changed. For example, if the list contains a value with the code "14" and the name "Account Closed", the name can be changed to "Card Closed" (see below).

If necessary, system classifiers and their values can be given user-defined names that differ from predefined ones to create a custom representation of classifier data in the system interface (for example, in the form for viewing contract classifiers "Customer Service → Customer Service → [Classifiers]"). System classifiers are changed in the form "User Classifiers" (Full → Configuration Setup → Common Handbooks → User Classifiers), see Fig. 4 in the section "Configuring User Classifiers", in the same way as user classifiers.

 Note that system classifiers corresponding to parameters in a Product (CONTR\_SUBTYPE, PRODUCT\_GROUP) are recalculated in contracts in the "Apply Product Changes" procedure.

## Configuring the "DLQ\_LEVEL" System Classifier

The system classifier with the code "DLQ\_LEVEL" is used to define the current maximum delinquency period for a contract. Classifier values must correspond to balance types used for delinquency accounts.

For this classifier to work:

- The corresponding balance types must be predefined (see Fig. 6 and Fig. 7) for a delinquency account (OVD account) with balance types set for them (a balance type is specified in an account template's *BalanceType* field).

- The "DLQ\_LEVEL" system classifier must be created in the list of classifiers in the "User Classifiers" form (like other system classifiers), see Fig. 6 and Fig. 7.
- This classifier's values are registered manually. The set of classifier values must correspond to the set of balance types configured for delinquent debt (Past Due). The classifier value code must correspond to the value of the *Dlq Level* field for the respective balance type, see Fig. 6 and Fig. 7. For more information about setting up balance types, see the document "Balance Types".

**User Classifiers**

Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info
Delinquency Level	DLQ_LEVEL		Status	0 No Debts (OK)	Main Contract			Issuing	Standard	

**Values for Delinquency Level**

Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To
0	No Debts	0		Yes		Yes	00/00/0000	00/00/0000
1	Due	1		Yes		Yes	00/00/0000	00/00/0000
2	Past Due 01	2		Yes		Yes	00/00/0000	00/00/0000
3	Past Due 02	3		Yes		Yes	00/00/0000	00/00/0000
4	Past Due 03	4		Yes		Yes	00/00/0000	00/00/0000
5	Past Due 04	5		Yes		Yes	00/00/0000	00/00/0000

**Balance Types**

Name	Code	Main Only	By Billing	Is State	Dlq Code	Dlq Level	Skip Liab	Direction	Group Code	Posting Details
Due	DUE	Main Only			+	1	None			
Past Due 01	OVD_01	Main Only			1	2	None			
Past Due 02	OVD_02	Main Only			2	3	None			
Past Due 03	OVD_03	Main Only			3	4	None			
Past Due 04	OVD_04	Main Only			4	5	None			

Fig. 6. Configuring the "DLQ\_LEVEL" system classifier

**User Classifiers**

Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info
Delinquency Level	DLQ_LEVEL		Status	0 No Debts (OK)	Main Contract			Issuing	Standard	

**Values for Delinquency Level**

Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To
0	No Debts	0		Yes		Yes	00/00/0000	00/00/0000
1	Due	1		Yes		Yes	00/00/0000	00/00/0000
2	Past Due 01	2		Yes		Yes	00/00/0000	00/00/0000
3	Past Due 02	3		Yes		Yes	00/00/0000	00/00/0000
4	Past Due 03	4		Yes		Yes	00/00/0000	00/00/0000
5	Past Due 04	5		Yes		Yes	00/00/0000	00/00/0000

**Balance Types**

Name	Code	Main Only	History Mode	Is State	Dlq Code	Dlq Level	Skip Liab	Direction	Group Code	Posting Details
Due	DUE	Main Only	None		1	1	None			USAGE=UNUSED;
Past Due 01	OVD_01	Main Only	None		2	2	None			USAGE=UNUSED;
Past Due 02	OVD_02	Main Only	None		3	3	None			USAGE=UNUSED;
Past Due 03	OVD_03	Main Only	None		4	4	None			USAGE=UNUSED;
Past Due 04	OVD_04	Main Only	None		5	5	None			USAGE=UNUSED;

Fig. 7. Configuring the "DLQ\_LEVEL" system classifier (synchronised balance type codes, starting from version 03.48.30)

Starting from version 03.48.30, the value of the "Balance Type" form's *Dlq Code* and *Dlq Balance* fields (see Fig. 7) for balance types linked with the values of a DLQ\_LEVEL classifier, in particular:

- For a balance type that corresponds to the "Due" value of the DLQ\_LEVEL classifier, the code in the *Dlq Code* field has been changed from "+" to "1".
- For a balance type that corresponds to the "Past Due 01" value of the DLQ\_LEVEL classifier, the code in the *Dlq Code* field has been changed from "1" to "2" etc.

Starting from version 03.48.30, the *Dlq* code for the "No Debts" value of the DLQ\_LEVEL classifier is determined using the global parameter NO\_DUE\_DLQ\_CODE (see the section "NO\_DUE\_DLQ\_CODE" of the document "WAY4 Global Parameters"). By default, the global parameter's value is "0". The value can be redefined.

These changes do not affect existing configurations and will only be reflected in new installations of WAY4 (when WAY4 is first installed, starting from version 03.48.30).

If delinquency arises (a non-null balance is established in an OVD account), the contract is automatically assigned the value of the classifier corresponding to the account balance type. The classifier value automatically changes when the debt is transferred to another OVD account (when the delinquency period increases), or when the debt is repaid. For debt with a different delinquency period, the classifier value will correspond to the account balance type with the maximum delinquency period.

In addition to the standard classifier with the "DLQ\_LEVEL" code, similar classifiers can be configured to classify various lines of delinquency accounts for one contract. For example, instalment loan delinquency accounts can be kept separately from standard delinquency accounts. To configure a classifier for instalment loan delinquency accounts, configure an additional system classifier with the code DLQ\_LEVEL\_<arbitrary unique postfix> (for example, with the code DLQ\_GROUP\_INST). For the classifier, configure the required accounts and balance types (in the same way as for the classifier with the "DLQ\_LEVEL" code). Configured balance types must be marked with the tag DLQ\_GROU=<classifier code postfix>; (in our example DLQ\_GROUP=INST;). The DLQ\_GROUP tag is set in the *Posting Details* field of the "Balance Types" form.

## Configuring default classifiers

A default classifier configured for a Product, contract subtype, or financial institution is used if this classifier is not set for the contract.

For a Product, it is also possible to configure default classifiers that are set for a contract when the contract is created (the first time the contract is approved).

User classifiers that have been registered in the "User Classifiers" form (see the section "Configuring User Classifiers with Arbitrary Codes") are used as default classifiers.

A classifier can be used as a default classifier if it has the following settings in the "User Classifiers" form ("Full → Configuration Setup → Common Handbooks → User Classifiers", see the section "Configuring User Classifiers with Arbitrary Codes"):

- The classifier has the value "Any Contract", "Top Contract", or "Main Contract" in the *Applies To* field and the DEFAULT\_FROM tag is set for the classifier (see the tag's description in the section "Tags used when working with classifiers" of the "Setup Tags" document).

Or

- The classifier has the value "Product" or "Institution" in the *Applies To* field (see the section "Configuring User Classifiers with Arbitrary Codes").

When a classifier is used with the tag DEFAULT\_FROM=PRODUCT,CONTR\_SUBTYPE,F\_I,; if a classifier is not set for a contract, a classifier value will be searched for in the following order (regardless of the sequence in which values are specified in the DEFAULT\_FROM tag):

- Product
- Contract subtype
- Financial institution

If no classifier is found at these levels, the default value from the parameters of the classifier itself is used (the value of the *Default Value* field in the "User Classifiers" form).

For classifiers with the "Product" or "Institution" value in the *Apply To* field, if a classifier is not set for a contract, the classifier value is taken from Product or financial institution parameters, respectively. If no classifier is found at the specified level, the default value from the parameters of the classifier itself is used (the value of the *Default Value* field in the "User Classifiers" form).

## Configuring a Classifier for a Product

### "Classifiers for <Product name>" form

The list of default classifiers for a Product is kept in the "Classifiers for <Product name>" form ("Full → Configuration Setup → Products → Product Definition → Products → [Classifiers]"), see Fig. 8.

Classifiers for ID811176334							
Classifier	Default Value	Editable	Set To Contract	Active Date From	Active Date To	Is Ready	
Product Based 1	value_1	No	No	00/00/0000	00/00/0000	Ready	

Ins Del Query Classifier

Fig. 8. Configuring contract classifiers in a Product

There are two ways of adding a classifier to a list (for setting a classifier), depending on the value of the *Set To Contract* field.


- To add a classifier with the "N" value of the *Set To Contract* field, the "Set Default Classifier Value" command from the context menu of the [Approve]

button in the "Products" form is used. See the section "Setting default classifiers with "N" in the Set To Contract field".


- To add a classifier with the "Y" value of the *Set To Contract* field, a new record is added in the standard way, by clicking the [Ins] button in the "Classifiers for..." form, and filling in the fields of the new record. This form's fields are described below.

The "Classifiers for..." form contains the following fields:


- *Classifier* – name of the contract's user classifier.

 This field shows the entire list of classifiers (client and contract system classifiers, user classifiers). Only contract user classifiers should be selected from this list. If a client or contract system classifier is selected, or a client user classifier, this setting will not work).

- *Default Value* – classifier value that is assigned to the contract/client when a contract is created.

 The *Default Value* field is mandatory. If the *Default Value* field is left empty, the classifier that is set in the *Classifier* field will not be used.

- *Editable* – reserved for forward compatibility.
- *Active Date From* – start date of the period (the period end date is set in the *Active Date To* field). Contracts created during this period for the Product will be assigned the classifier in the *Classifier* field with the value from the *Default* field.
- *Active Date To* – end date of the period (the period start date is set in the *Active Date From* field). Contracts created during this period for the Product will be assigned the classifier in the *Classifier* field with the value from the *Default* field.

 When checking the active period of a classifier set in a Product, the *Active Date From* and *Active Date To* fields are compared with the financial institution's banking date. The active period for the classifier value is determined by the system date (*Date From*, *Date To* fields in the "Values for <classifier name>" field; "Full → Configuration Setup → Common Handbooks → User Classifiers → [Values]").

- *Set To Contract* – the field defines rules for working with the default classifier value that is set in the *Default Value* field:
  - "Y" – if the field is not filled in or "Y" is specified, the value of the *Default Value* field is set in the contract when approving the contract for the first time. This is the default behaviour.
  - "N" (recommended value) – the value of the *Default Value* field is NOT set in the contract when approving the contract. This value will be regarded as the default value for this Product and can be used as follows:
    - ◆ For a classifier with the "Product" value in the *Apply To* field (Full → Configuration Setup → Common Handbooks → User Classifiers), the default value in the Product (*Default Value*) is used as

the value of the contract classifier. In this setup, the classifier cannot be set for a contract; the value is always taken from the Product.

- ◆ For a classifier with the tag `DEFAULT_FROM=PRODUCT`; in the *Add Info* field (Full → Configuration Setup → Common Handbooks → User Classifiers), the default value in the Product (*Default Value*) is used as the classifier's default value if the classifier is not defined (not found) for the contract.
- ◆ For a contract parameter with the "Product" value in the *Value Location* field and the "Classifier" value in the *Check Product* field (Full → Configuration Setup → Common Handbooks → Contract Parameters Setup), the default value in the Product (*Default Value*) is used as the value of the contract parameter. In this setup, the parameter cannot be set for a contract; the value is always taken from the Product.
- ◆ The default value in the Product (*Default Value*) is used as the default value of the contract parameter (i.e. if the parameter is not set for the contract) for the parameter's following settings in the "Contract Parameters Setup" form (Full → Configuration Setup → Common Handbooks → Contract Parameters Setup): in the parameter's *Check Product* field, specify the "Classifier" value, in the *Value Location* field – the "Contract" value (the parameter is stored as a tag in the contract), in the *Mirror To* field – the "Classifier" value. For the corresponding classifier, the tag `DEFAULT_FROM=PRODUCT`; must be set. In this setup, if a classifier is not set in the contract, the value from the Product will be shown in the interface, as both the classifier value and parameter value.

For more information, see the section "Contract and Client Custom Parameters".

In the form, two records can be registered for the same classifier, with overlapping dates, but with different values in the *Set To Contract* field. For example, one record may contain the default value for classifier N1, and the second record defines classifier N1's value that will be assigned to new contracts.

For one classifier with one value in the *Set To Contract* field, several records can be set with dates that don't overlap. For example, a new value must become active after the old (current) value expires.

- *Is Ready* – the field shows whether changes made to this record were approved (when approving the Product).

After adding a new record to the "Classifiers for..." form, approve the Product.

Clicking the [Classifiers] button in the "Classifiers for <Product name>" form (see Fig. 8) opens a form with a classifier's parameters. To see the list of the classifier's values, click the [Value] button. For classifiers with "N" in the *Set To Contract* field, this form can show the list of Products ([Prod defaults] button) and financial institutions ([FI defaults] button) for which this classifier was added as the default classifier.

**i** For a Product, "classic" contract classifiers used for contract segmentation can be set, as well as contract classifiers used to enable Product options. Product options are indicators of certain events or stages in a contract's life cycle. For example, allowing/prohibiting authorisation for a contract, etc. A Product option can be "blocked". For example, authorisation for a contract can be blocked when the contract has large delinquency. For more information, see the section "Product Option Blocking".

**⚠** Note that classifiers with "N" in the *Set To Contract* field are added in the "Products" form "Products" (Full → Configuration Setup → Products → Product Definition → Products) using the "Set Default Classifier Value" command from the [Approve] button's context menu. The [Ins] button should not be used to add these classifiers.

### Setting default classifiers with "N" in the *Set To Contract* field

When setting up contract classifiers, it is recommended to use a default classifier with "N" in the *Set To Contract* field for the Product. This makes it possible to optimise the process of installing classifiers since a classifier record is set up for the Product only and there is no need to create classifier records for separate contracts.

A default classifier with "N" in the *Set To Contract* field is set/changed for a Product in one of the following ways:

- For a separate Product – using the command "Set Default Classifier Value" from the context menu of the [Approve] button in the "Products" form (Full → Configuration Setup → Products → Product Definition → Products). This command opens the "Set Classifier Value" form, see Fig. 9.

Fig. 9. Configuring a default value for a Product

In the "Set Classifier Value" form, fill in the following fields:

- *Classifier* – from the list, select a contract classifier whose parameters include the tag `DEFAULT_FROM=PRODUCT;`, or a contract classifier with "Product" in the *Applies To* field.



- *Value* – classifier value that will be used as the default value for the Product.
- *Add Info* – reserved for forward compatibility.
- *Date From* and *Date To* – start/end dates of the active period for this default value.

When the [Proceed] button is clicked in the "Classifiers for <Product name>" form (see Fig. 8 in the section "Classifiers for <Product name>" form") a new record is automatically created with the *Default Value* field filled in and "N" in the *Set To Contract* field.

If a default value for a certain classifier has already been set for the Product, when the new default value is added, a check is made of whether the effective periods overlap for the old and new values. I.e., the start date of the new value must be greater than the end date of the old value.

If the *Date To* field for the old default value was not filled in, when a new record is added, the *Date To* field will filled in automatically (with the start date for the new value).

If the *Date To* field for the default value is not filled in, the [Deactivate] button will be available. Clicking this button opens a form to enter the classifier value's end date.

- For Product groups – to do so, filter Products in the "Products (No Hierarchy)" form (Full → Configuration Setup → Products → Product Definition → Products (No Hierarchy)). To assign a default classifier to all Products that are shown in the form, run the command "Set Default Classifier Value (For All)". After clicking the [OK] button in the warning message "Do you want to execute 'Set Default Classifier Value (For All)' action for all records?", a form like the one shown in Fig. 9 will open for entering the default classifier's parameters. Fields are filled in like when adding a default classifier for a separate Product.

When a default value/classifier is added or changed using the "Set Default Classifier Value"/"Set Default Classifier Value (For All)" command, the status of the Product/Products remains unchanged (Is Ready), meaning the Product doesn't have to be reapproved after this action.

Adding/changing a default classifier for a Product doesn't lead to changes for specific contracts. These classifiers are not set physically for a contract. Information about a default value is provided when a request is received for a classifier value (in the appropriate configuration).

A record that was added for a default classifier can be viewed in the form "Classifiers for <Product name>" (see Fig. 8 in the section "Classifiers for <Product name>" form").

## Configuring a default classifier for a financial institution

To set/change a default classifier for a financial institution, open the "Financial Institutions" form with the menu item "Full → Configuration Setup → Main Tables → Financial Institutions" or "Full → DB Administrator Utilities → Special OpenWay Utilities → Apply Default Classifier Value Changes → Financial Institutions", select the required financial institution, click the [Do]



button and run the context menu command "Set Default Classifier Value". When this command is run, the "Set Classifier Value" form opens. This form is the same as the one used to set a default classifier value for a Product (see Fig. 9 in the section "Setting default classifiers with "N" in the Set To Contract field").

From the list in the *Classifier* field of the "Set Classifier Value" form, select a contract classifier whose parameters have the tag `DEFAULT_FROM` with the "F\_I" value or a contract classifier with the "Institution" value in the *Applies To* field.

Fill in the remaining fields in the same way as when adding a classifier for a Product (see the section "Setting default classifiers with "N" in the Set To Contract field").

When the "Set Default Classifier Value" command is used to set/change a default classifier value, no additional actions are required to activate this setting.

Setting/changing a default classifier for a financial institution doesn't lead to changes for specific contracts. A default classifier is used when a classifier value is requested, if a classifier is not set for the contract.

A special procedure must be used if actions with the contract must be performed due to the change in the default classifier value (see the section "Actions when a default classifier value is changed for a Product, financial institution or contract subtype").

A default classifier record that was added can be seen in the "Classifiers for <financial institution name>" form (see Fig. 10) that is opened by clicking the [Classifiers] button in the "Financial Institutions" form (Full → Configuration Setup → Main Tables → Financial Institutions).

Financial Institution	Classifier	Default Classifier Value	Date From	Date To	Is Ready
Principal	Test1	203	23/03/2016	12/06/2017	Ready
Principal	Test1	203	15/06/2017	00/00/0000	Ready

Fig. 10. Configuring a default value for a financial institution

## Configuring a default classifier for a contract subtype

To set/change a default classifier for a contract subtype, open the "Contract Type" form using the menu item "Full → Configuration Setup → Contract Types → <Client Category> Contract Types" and click the [Sub Type] form to go to the contract subtype form. In the "Sub Types" form select the required subtype and specify a classifier and classifier value as a tag in the *Add Parns* field in the format `<classifier code>=<classifier value>;`.

No additional actions are required to active the default classifier value.

Setting/changing a default classifier for a contract subtype doesn't lead to changes for separate contracts. A default classifier is used when a classifier value is requested, if a classifier is not set for the contract.

A special procedure must be used if actions with the contract must be performed due to the change in the default classifier value (see the section "Actions when a default classifier value is changed for a Product, financial institution or contract subtype").

## Actions when a default classifier value is changed for a Product, financial institution or contract subtype

When a contract classifier is implicitly changed (when a default classifier marked with the `DEFAULT_FROM` tag and set for a Product, contract subtype, or financial institution is changed), it may be necessary to perform certain actions in the system directly when the classifier value is changed. For example, to open an Event. These actions are not performed automatically when a default classifier value changes, since the value is not physically changed for the contract, but for the Product/contract subtype/financial institution.

For example, if for a classifier value, an Event is specified in the *Result Event Code* field of the "Values for" form (Full → Configuration Setup → Common Handbooks → User Classifiers → [Values]), this Event will not open for a contract when this default classifier value is set.

For actions related to a change in a default classifier value to be performed in WAY4:

- Use the menu item "Apply Default Classifier Changes" that is run separately for Products, contract subtypes and financial institutions:
  - For Products – open the "Products (No Hierarchy)" form using the menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → Apply Default Classifier Value Changes → Products (No Hierarchy)". In the "Products (No Hierarchy)" form, select the required Product, click the [Do] button and run the context menu command "Apply Default Classifier Changes".
  - For contract subtypes – open the "Contract Type" form using the menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → Apply Default Classifier Value Changes → Contract Type" and click the [Sub Type] button to go to the contract subtypes form. In the Sub Types form, select the required subtype, click the [Actions] button and run the context menu command "Apply Default Classifier Changes".
  - For financial institutions – open the "Financial Institutions" form using the menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → Apply Default Classifier Value Changes → Financial Institutions", select the required financial institution, click the [Do] button and run the context menu command "Apply Default Classifier Changes".
- Running the "Apply Default Classifier Changes" command opens the "Apply Default Classifier Changes" form, see Fig. 11.

Fig. 11. "Apply Default Classifier Changes" form

- In the "Apply Default Classifier Changes" form, fill in the following fields:
  - *Classifier* – select the classifier for which the default value changed.
  - *New Value* – enter the new value in this field.
  - *Previous Value* – enter the old (previous) value in this field.
  - *The New Value and Previous Value fields are filled in as follows:*

Variant 1. A new classifier value has already been set for a Product/Subtype/financial institution. In this case, in the *New Value* field, specify the new value that has already been set. The *Previous Value* field can be left empty, for example, if the classifier is being set for the first time.


Variant 2. Sometimes it may be necessary to perform actions that are related to setting a default classifier value before it is set. In this case, in the *New Value* field, specify the classifier value that will be set. In the *Previous Value* field, specify the classifier's current value.


**i** If the *New Value* or *Previous Value* field is not filled in, a search is made for the current value of the default classifier according to the classifier's settings in the "User Classifiers" form, in particular according to DEFAULT\_FROM tag values. When searching according to DEFAULT\_FROM tag values, the level for which the command "Apply Default Classifier Changes" was run is skipped. (for example, when DEFAULT\_FROM=PRODUCT,CONTR\_SUBTYPE,F\_I;, if the command "Apply Default Classifier Changes" was run in the Product form, a search is made at the subtype and financial institution level and the Product level is skipped). The value that is found is used as the value of the empty field for checking: a check is made that the values in the *New Value* and *Previous Value* fields differ. If values in the *New Value* and *Previous Value* fields match, an error message is generated.

- After filling in the fields in the "Apply Default Classifier Changes" form, click the [Proceed] button. This results in the following:

- ◆ A check will be made of the classifier value for contracts (if the *New Value* or *Previous Value* field is not filled in) and contracts will be selected for actions. Contracts are selected for which this default classifier at this level (Product/subtype/financial institution) is actually used as the classifier's current value. For example, for a default classifier at the Product level, a check is made that this classifier is not set in the contract itself (if the classifier is set at the contract level, actions are not performed for the contract). For a default classifier at the contract subtype level, a check is made for the classifier in the contract itself and at the Product level (if the classifier is set in the contract or at the Product level, actions are not performed for the contract), etc.
- ◆ For a number of hardcoded contract classifiers (in particular with the codes ABU and DATA\_ERASURE), actions are performed that are preset in WAY4. If certain additional actions must be performed for selected contracts, specify these actions in a custom procedure CUST\_OBJECT\_ACTION.
- ◆ Actions that must be performed for contract classifiers with arbitrary codes must be specified in a custom procedure CUST\_OBJECT\_ACTION.

In the CUST\_OBJECT\_ACTION procedure, in addition to actions that must be performed for selected contracts, the classifier's old and new value must be specified. For more information, contact OpenWay.

 The menu item "Apply Default Classifier Changes" can be used for classifiers that are marked with the DEFAULT\_FROM tag with the values "Main Contract", "Top Contract", "Any Contract" in the *Applies To* field. I.e. for classifiers that can be set at the level of the contract itself or in a Product. For classifiers with the "Institution" and "Product" values in the *Applies To* field, this menu item is not used.

 The menu item "Apply Default Classifier Changes" does not set the classifier value that is specified in the *New Value* field for a Product/subtype/financial institution or for a contract. This menu item only makes it possible to initiate actions related to a classifier value.

## Setting Rules for Classifier Use

### Changing Client or Contract User Classifier Values

In WAY4 user classifiers can be assigned to clients and contracts.

When an attempt is made to assign a system classifier value to a client or contract, for example, using custom procedures, the message "Classifier <> is standard and cannot be set directly" is shown.

### Changing Classifier Values with an Event

Rules are set for assigning (changing) a user classifier value when an Event opens in the "Classifier Actions" form (Full → Configuration Setup → Common Handbooks → Classifier Actions) and its child form, "Rules for <Event name>", see Fig. 12.

The screenshot shows two overlapping windows from a software application. The top window is titled 'Classifier Actions' and contains a table with columns: Group Code, Code, Name, Event Code, Action Code (Custom), Is Active, Date From, and Date To. It lists two records: one for 'Set contract classifier to value 2' (Card Event A) and another for 'Set contract classifier to value 1' (Card Event B). Below the table are buttons for 'Ins', 'Del', 'Query', and 'Rules'. The bottom window is titled 'Rules for Set contract classifier to value 1' and contains a table with columns: Action Rule, Classifier, and Classifier Value. It shows one rule: 'From OK' leading to 'Test contract classifier' with a value of 'Test value 1'. It also has 'Ins', 'Del', and 'Query' buttons.

Group Code	Code	Name	Event Code	Action Code (Custom)	Is Active	Date From	Date To
MST	TAC2	Set contract classifier to value 2	Card Event A		Yes	00/00/0000	00/00/00
MST	TAC1	Set contract classifier to value 1	Card Event B		Yes	00/00/0000	00/00/00

Action Rule	Classifier	Classifier Value
From OK	Test contract classifier	Test value 1

Fig. 12. Setting rules for assigning classifier values according to an Event

In the "Action" form, the Event is specified that when opened causes a change in a classifier value.

The "Action" form contains the following fields:

- *Category* – record category. Used for additional grouping of the list. This field is filled in from the keyboard.
- *Code* – record code (an arbitrary value, unique to this form's list). Used for additional grouping of the list. This field is filled in from the keyboard.
- *Name* – Event name.
- *Event* – name of the Event type that when opened causes classifiers set in the "Rules..." form to be assigned the values specified in that form.



When such an Event is closed, the respective classifier will be returned to the state at which it was before the Event was processed. That means, the classifier will be assigned the value preceding the current value.


- *Action Code (Custom)* – the code of the custom procedure that when executed causes classifiers set in the "Rules..." form to be assigned the values specified in that form.
- *Is Active* – marker of record activation:
  - "Yes" – the record is active. Opening of an Event will cause settings specified in the "Rules..." form to be activated.

- "No" – the record is inactive. Opening of an Event will not cause settings specified in the "Rules..." form to be activated.
- *Date From, Date To* – fields for entering dates to specify the time interval during which this record is active (these fields are filled in when the "Yes" value is set in the *Is Active* field).


In the child form "Rules for <Event name>", that opens when the [Rules] button in the "Actions" form is clicked (see Fig. 12), the new classifier value is specified; moreover, a condition can be set that if executed successfully will change the classifier value.

The "Rules for..." form contains the following fields:

- *Action Rule* – condition for changing the classifier value:
  - "From Ok" – the classifier value is only changed if the current classifier value's *Is OK Value* parameter (specified in the *Classifier* field) is set to "Yes".
  - "Nor Higher Severity" – the value of the classifier (specified in the *Classifier* field) is only changed if the priority of the current classifier value does not exceed the priority of the value specified in the *Classifier Value* field.

 If the *Action Rule* field is not filled in, when an Event opens, the classifier will be assigned the value specified in the *Classifier Value* field.

- *Classifier* – classifier name. The value is selected from a list of user classifiers registered in the system.
- *Classifier Value* – new classifier value. The value is selected from a list of values set for this classifier.

 If the *Classifier Value* field is not filled in, when an Event opens, the classifier will be assigned the default value specified in the *Default Value* field of the "User Classifiers" form, see the section "Configuring Classifiers". The default value is usually used for the initial assignment of a classifier value to a client or contract.

### **Manually Changing Classifier Values**

User classifier values are manually assigned (changed) in the following forms:

- In the client form (for example, "Issuing → Contract Input & Update → Issuing Contracts (Private) → [Client]").

To assign a classifier value, click the [Action] button in the client form, and execute the context menu command "Set Classifier". The "Set Client Classifier" form will open (see Fig. 13).

Fig. 13. Manually assigning classifier values to a client

This form contains the following fields:

- *Classifier* – classifier name.
- *Value* – classifier value to be assigned to the client.
- *Reason* – comments (reason for assigning the classifier value).
- The *Date From* and *Date To* fields make it possible to set the classifier value's effective period:
  - ◆ *Date From* – start date of the period when this classifier value is active.
  - ◆ *Date To* – end date of the period when this classifier value is active.

After filling in the fields, click [Proceed]. The client will be assigned the set classifier value.

When classifier values have a date in the future (the *Date From* field is filled in), a hardcoded Event that sets this value for the contract/client will open on this date:

- If the classifier value has a certain effective period (the *Date To* field is filled in), an Event with the CLS code opens. The Event will close automatically on the date specified in the *Date To* field.
- If *Date To* is not set for the classifier value, an Event with the CLS\_UNIQUE code will open. The Event will close immediately after the value of the corresponding classifier has been set.

When setting a classifier with a future date is repeated, a check is made of whether dates overlap. If the start and/or end date of the effective period for the classifier value falls in the effective period of an existing record, the error message "Waiting CLS-event found for the classifier "<Classifier Code>" for the intersecting period (<Date From> - <Date To>)" is generated. A check for overlapping dates will be made for Events with the CLS code and with the CLS\_UNIQUE code.

- In the contract form (for example, "Issuing → Contract Input & Update → Issuing Contracts (Private)").

To assign a classifier value, in the contract form, click the [Action] button and execute the context menu command "Set Contract Classifier" or "Set Client Classifier".



To assign classifier values, click the [Action] button in the contract form and execute the "Set Contract Classifier" or "Set Client Classifier" context menu command. The "Set Contract Classifier" or "Set Client Classifier" form will open, identical to the form in Fig. 13.

- In the "Customer Service" form (Customer Service → Customer Service).

To assign a classifier value, in the "Customer Service" form, select the required contract, click the [Set] button and execute the context menu command "Contract Classifier" or "Client Classifier". The "Set Contract Classifier" form or "Set Client Classifier" form will open. These forms are the same as the "Set Client Classifier" form (see Fig. 13).

After filling in the fields, click the [Apply] button. The contract will be assigned the set classifier value.

### Changing Classifier Values using the Advanced Applications Module

The values of client or contract user classifiers can be changed using the Advanced Applications Module.

For more information, see the document "Advanced Applications Module R2".

### Opening an Event when Assigning a Classifier Value

An Event that will automatically open when a user classifier value is assigned to a client or contract is configured directly in the classifier value parameters in the "Values for <classifier name>" form (Full → Configuration Setup → Common Handbooks → User Classifiers → [Value]), see Fig. 14.

The Event type name is selected from a drop-down list in the *Result Event* field.



This Event must be registered in the contract's Service Package.

Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To
3	Test value 1	CL_TEST_VALUE_1		Yes		Yes	00/00/0000	00/00/0000
1	Test value 3	CL_TEST_VALUE_3		No		Yes	00/00/0000	00/00/0000
1	Test value 2	CL_TEST_VALUE_2		Yes		Yes	00/00/0000	00/00/0000

Fig. 14. Configuration of an Event that opens when a particular value is assigned to a classifier

When changing a classifier value, the Event that opened when the previous classifier value was set will be closed.

### Executing Actions Depending on Classifier Values

Execution of actions in the system depending on classifier values assigned to a client and/or contract is configured using tags from the IF\_CS group, in particular:

- IF\_CS\_TYPE=<classifier code>; – this tag sets the classifier type. The tag value is the classifier code from the *Code* field of the "User Classifiers" form (Full → Configuration Setup → Common Handbooks → User Classifiers).
- IF\_CS\_VALUE=<classifier value code>; – this tag sets the classifier value for which an action will be executed. If the value specified in the tag corresponds to the classifier value of the contract/client, the action is



executed. The tag value is the classifier value code from the *Code* field of the "Values for <classifier name>" form (Full → Configuration Setup → Common Handbooks → User Classifiers → [Values]). Several comma-delimited classifier value codes can be specified as the value of this tag.

- IF\_NOT\_CS\_VALUE=<classifier value code>; – this tag sets the classifier value for which an action will not be executed. If the value specified in the tag corresponds to the classifier value of the contract/client, the action is not executed. The tag value is the classifier value code from the *Code* field of the "Values for <classifier name>" form (Full → Configuration Setup → Common Handbooks → User Classifiers → [Values]). Several comma-delimited classifier value codes can be specified as the value of this tag.
- IF\_CS\_TYPE\_FOR – this tag is used together with IF\_CS tags to redefine the contract for which these checks are made:
  - "BILLING" – for the account contract from which settlement is made.
  - "LIABILITY" – for a higher ranking contract in a "Liability" hierarchy.
  - "TOP" – for the top contract in a hierarchy.
  - "BASE" – for a "Main/Sub" hierarchy's main contract with which this contract is linked.
- The IF\_CS\_NUMB, IF\_CS\_TYPE<N>, IF\_CS\_VALUE<N>, IF\_NOT\_CS\_VALUE<N>, and IF\_CS\_TYPE\_FOR<N> tags can be used to check of several classifiers for a contract.

These tags can be used to configure execution of the following actions:

- Configuring selection of a Service for processing transactions (see the section "Selecting a Service").
- Attaching an additional Service Package (see the section "Attaching an Additional Service Package").
- Configuring activation of a usage limiter (see the section "Activating a Usage Limiter").
- Configuring opening of an Event (see the section "Opening an Event").
- Configuring opening an Event created in a Product (see the section "Opening an Event Configured in a Product").
- Configuring activation of a standing payment order (see the section "Generating a Payment Order").
- Configuring sending client messages (see the section "Generating Client Messages").
- Assigning tariff domains (see the section "Assigning a Tariff Domain").
- Selecting tariffs (see the section "Selecting a Tariff").
- Configuring selection of a routing contract (see the section "Configuring Routing").
- Configuring selection of a preferred counterparty (see the section "Selecting a Preferred Counterparty").

### Selecting a Service


Additional conditions for selecting a Service to process transactions are set using tags from the IF\_CS group in the form with full information about the Service (for example, "Full → Configuration Setup → Products → Service → [Source] → [Full Info]) in the *Service Details* field.


A Service that is appropriate according to all other parameters for processing a transaction will be used only when the conditions set with the tags from the IF\_CS group are met.

For more information about services, see the document "WAY4 Service Packages".

### Attaching an Additional Service Package

Conditions for attaching an additional Service Package using IF\_CS group tags are configured in the form with full information about the additional Service Package (for example, "Full → Configuration Setup → Products → Service Packs → [Additional]") in the *Apply Rules* field.

 Conditions for attaching an additional Service Package are only analyzed if "Yes" is specified in the *Active by Default* field of the additional Service Package.

 IF\_CS conditions can be set in certain Services of an Additional Service Package (see the section "Selecting a Service"), and not in the entire Package.

For more information about additional Service Packages, see the document "WAY4 Service Packages".

### Activating a Usage Limiter

For a usage limiter, tags from the IF\_CS group are configured in the form with detailed information about the limiter (Full → Configuration Setup → Products → Service Packs" → [Usage] → [Details]) in the *Spc Params* field.

A usage limiter is activated only if the conditions set by the IF\_CS tags are met.

For more information about usage limiters, see the document "Usage Limiters".

### Opening an Event

For Events, tags from the IF\_CS group are configured in the form with detailed information about the Event type (for example, "Full → Configuration Setup → Products → Issuing Private Products → Issuing Event Types → [Full Info]") in the *Special Params* field.

An Event opens and is processed (actions specified in configuration of the corresponding Event type are executed) only when the conditions set by the IF\_CS tags are met.

For more information about Events, see the document "Events".

### Opening an Event Configured in a Product

For an Event configured in a Product, tags from the IF\_CS group are set in the "Start Events for <name of Product>" form (Full → Configuration Setup → Products → Product Definition → Products → [Full Info] → [Start Events]) in the *Custom Rules* field.

An Event opens and is processed only when conditions set by the IF\_CS tags are met.

For more information, see the section "Event Setup" of the document "Products and Contract Subtypes".

### **Generating a Payment Order Document**

In the standing payment order form, tags from the IF\_CS group are configured in the *Posting Details* field (Full → Configuration Setup → Products → Account Schemes → [Definition] → [SO Full]).

A payment order document is only generated if the conditions set by the IF\_CS tags are met.

For more information about payment orders, see the document "Standing Payment Orders".

### **Generating Client Messages**

Conditions for sending messages to clients are set by tags from the IF\_CS group in the form for configuring message templates (Full → Configuration Setup → Products → Issuing Private Products (Issuing Corporate Products) → Issuing Event Types → [Messages]). Tags are specified in the *Message Details* field.


Messages generated when an Event is opened and processed (Event Messages) are only sent if the conditions set by the IF\_CS tags are met.

For more information, see the document "Configuring Client Messages".

### **Assigning a Tariff Domain**

In tariff domain parameters, IF\_CS group tags are configured in the *Apply Rules* field.


A tariff domain is assigned to a contract only when the conditions set with IF\_CS group tags are met.

 The Advanced Tariff Management module is not included in the standard WAY4 configuration and is supplied under an additional agreement with the WAY4 vendor.

### **Selecting a Tariff**

In tariff parameters, tags of the IF\_CS group are configured in the *Apply Rules* field.

When a transaction is made on a contract, a tariff will only be selected if the conditions set by the IF\_CS group tags are met.


 The Advanced Tariff Management module is not included in the standard WAY4 configuration and is supplied according to a separate agreement with the WAY4 vendor.

### **Configuring Routing**

Additional conditions for selecting a routing contract are set by tags from the IF\_CS group in the "Routing for <name of group>" form, used to configure Interchange routing contract tables belonging to a BIN group (Full →

Configuration Setup → Routing → BIN Groups → [Routing]). Tags are specified in the *Custom Rules* field.

A routing contract that meets all other parameters for processing a transaction will only be used if the condition set by the IF\_CS tags is met.

 These configurations are only used in acquiring; that is, to specify a routing contract for a card that is not registered in WAY4.


### Selecting a Preferred Counterparty

Additional conditions for selecting (checking) a preferred counterparty using IF\_CS group tags are configured in the "Preferred Details" form (Full → Configuration Setup → Products → Service Packs → [Preferred] → [Full Info]). Tags are specified in the *Custom Parm*s field.

For more information, see the document "Preferred Counterparties".


### Setting Classifier Values

Conditions for setting classifier values depending on the value of another client or contract classifier are set using tags of the IF\_CS group. Tags are set in the *Add Info* field of a classifier's value.

 If a classifier set as a condition with IF\_CS group tags is not specified in the corresponding client/contract, configured conditions will not be taken into account when setting a dependent classifier.

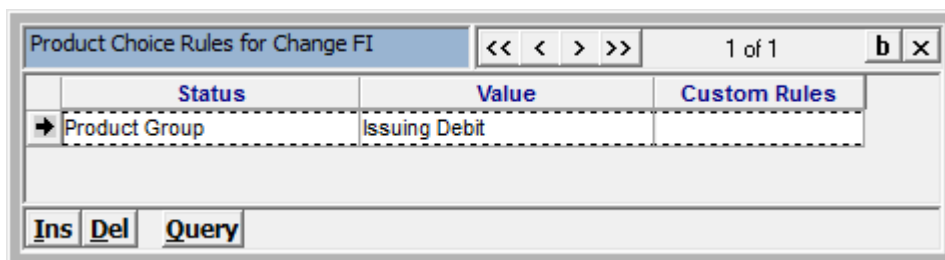
In WAY4 it is possible to configure conditions for setting a client or classifier value depending on a classifier without a fixed list of values (using the IF\_PARM and IF\_PARM\_VALUE tags, see the section "Classifiers without a Fixed List of Values").

## Generating a Product List for a Client

 This functionality is provided according to a separate agreement with the WAY4 vendor.

A list of Products that can be offered to a client is generated for display in the "Offers for <client name>" form that is opened from the customer service form (Customer Service → Customer Service → [Client] → [Offers]).

The list is generated as follows: in the properties of the corresponding Products, set the client classifier values for which a given Product will be available. These values are set in the "Product Choice Rules for <Product name>" form (Full → Configuration Setup → Products → Product Definition → Products → [Full Info] → [Choice Rules]), see Fig. 15.



Status	Value	Custom Rules
→	Product Group	Issuing Debit

Ins Del Query

Fig. 15. Configuring rules to assign classifier values according to an Event

This form contains the following fields:

- *Status* – classifier name. The value is selected from a list of client user and system classifiers registered in the system for this client type (the value of the *Client Cat* field of the "User Classifiers" form).



Client user and system classifiers are classifiers for which the "Client" value is set in the *Applies To* field of the "User Classifiers" (Full → Configuration Setup → Client and Contract Classifiers → User Classifiers).

- *Value* – classifier value. The value is selected from a list of values for the classifier specified in the *Status* field.
- *Custom Rules* – field for specifying custom rules.



When several value of one classifier are added to the form, these conditions will be joined using the "OR" operator. When several values of different classifiers are added to the form, these conditions will be joined with the "AND" operator.

Example.

Two client classifiers are registered in the system: "Social status" and "Country of residence". The following classifier values are set for the Product:

1. Social status = "Retired"
2. Social status = "Student"
3. Country of residence = "France"

This means that this Product will be available to retirees and students from France.



Without these settings, the entire list of Products registered in the system for this financial institution and client type will be shown in the "Offers for <client name>" form (Customer Service → Customer Service → [Client] → [Offers]) for the client.

## Viewing Classifier Data

### System Classifiers and their Values

The list of system classifiers configured in the system is viewed in the "User Classifiers" form (Full → Configuration Setup → Common Handbooks → User Classifiers), see Fig. 4 in the section "Configuring User Classifiers".

### User Classifiers and their Values

The list of user classifiers configured in the system and their values can be viewed and edited in the "User Classifiers" (Full → Configuration Setup → Common Handbooks → User Classifiers) and "Values for <classifier name>" (Full → Configuration Setup → Common Handbooks → User Classifiers → [Values]) forms, respectively.

For a description of form fields, see the section "Configuring User Classifiers".

## Viewing Client and Contract Classifier Data

### **General Information**

Actions with classifiers (assigning and/or changing the values of system and user classifiers) are recorded in a special log.

The classifier log is used to perform the following tasks:

- To determine a stored classifier's current value assigned to a client and/or contract – done automatically when it is necessary to execute an action requiring advance analysis of classifier values.

Current values of stored client and contract classifiers can be viewed in the user interface. For more information, see the section "Viewing Client and/or Contract Classifier Data".

- For recording the history of changes to classifier values – the history is used, for example, to restore the state of a classifier to the time preceding processing of an Event that caused a change in the classifier value. Classifier state is restored when the corresponding Event closes.

The history of changes to stored client and contract classifier values can be viewed in the user interface. For more information, see the sections "Viewing Client and/or Contract Classifier Data".

### **Viewing Client and/or Contract Classifier Data**

Information about current values of user classifiers assigned to a client and/or contract can be viewed in the following ways:

- In the form "Classifiers for <contract name>":
  - Opened in the issuing or acquiring module. For example, "Issuing → Contract Input & Update → Issuing Contracts (Private) → [Classifiers]", see Fig. 16.
  - Opened from the customer service form Customer Service → Customer Service → [Classifiers]). This form is the same as the form shown in figure below (see Fig. 16).

The form "Classifiers for <contract name>" contains a list of all the contract's and corresponding client's classifiers.

Classifiers for Test Client 3564					<< < > >>		1 of 18		b x		
Set For	Classifier	Classifier Value	Previous Value	Value Date	Value Description	Officer					
001-P-994499	Product Group	Issuing Debit		00/00/00 00:00:00							
001-P-994499	Contract Sub Type	555-Private Client Account		00/00/00 00:00:00							
001-P-994499	Service Pack			00/00/00 00:00:00							
001-P-994499	Account Scheme			00/00/00 00:00:00							
001-P-994499	Behavior Type			00/00/00 00:00:00							
001-P-994499	Contract Status			00/00/00 00:00:00							
Client	Country			00/00/00 00:00:00							
001-P-994499	Client Type	Private Resident		00/00/00 00:00:00							
001-P-994499	Test contract classifier			00/00/00 00:00:00							
Client	Test client classifier	3 Test value 1 (OK)		28/04/12 09:56:57 t		SUPERUSER					
Query											

Fig. 16. "Classifiers for ..." form opened from the contract form

This form contains the following fields:

- *Set For* – the object to which this classifier value is assigned. The contract name or the "Client" value is automatically shown as the classifier value.
- *Classifier* – classifier name.
- *Classifier Value* – the current value of the classifier.
- *Previous Value* – the previous value of the classifier.
- *Value Date* – the date and time the current classifier value was assigned.
- *Value Description* – comments specified when assigning a current classifier value. Comments can be specified when manually assigning a classifier value (see the section "Manually Changing Classifier Values").
- *Officer* – the user who assigned the classifier value.



In the "Classifiers for..." form, classifiers assigned to a contract and/or client are shown, as well as all classifiers (user and system) available to this contract or client, but not yet assigned. The *Value* field is not filled in for such classifiers.

- In the form "Classifiers for <client name>", opened in the issuing or acquiring module. For example, "Issuing → Contract Input & Update → Issuing Contracts (Private) → [Client] → [Classifiers]". This form contains only client classifiers (only records with the "Client" value are shown in the *Set For* field), see Fig. 17.

Status Type	Value	Previous Value	Value Date
Institution Bank Code	5555		00/00/00 00:00:00
Branch			00/00/00 00:00:00
Country			00/00/00 00:00:00
test			00/00/00 00:00:00
CLL_DECEASE	1 No (OK)		00/00/00 00:00:00
CLL_COUNTRY_CHANGED	1 No (OK)		00/00/00 00:00:00
Institution Branch Code	Крайний север		00/00/00 00:00:00

Query

Fig. 17. The "Classifiers for ..." form opened from the client form

The [Details] and [History] buttons become available when records of classifiers are selected in the "Classifiers for..." form (changes in the values of these classifiers are registered in the classifier log, see the section "Classifier Types").

Clicking the [History] button in the "Classifiers for..." form opens the "History..." form that contains the history of changes to this classifier's values (see Fig. 18).

The [Details] button is used for convenient viewing of "Classifiers for..." form records.

Client	Contract	Classifier	Classifier Value	Previous Value	Date From	Date To	Status Date	Officer	History Type	Description
001-P-000070	Contract Sub Type	555-Private Client Acco			27/10/2009	01/01/2010	27/10/09 00:00:00	SUPERUSER	Active	

Query

Fig. 18. History of changes in classifier values

The *History Type* field shows the classifier's status. Possible values:

- "Active" – active value of the classifier.
- "InActive" – historical value of the classifier.
- "Reversed" – classifier value that was reversed when correcting transactions with the Reversal Management module.
- "Waiting" – value for a future date (value that has not been set yet).

If the classifier value was assigned according to an Event, the *Event Action* field shows the Event action under which this classifier value was assigned. Possible values are:

- "On Open" – when the Event opened.
- "On Close", "On Reject" – when the Event closed in various ways. For more information, see the section "Events Log" of the document "Events".

Detailed information about an Event is available by clicking the [Event] button in the "History..." form.

- Contract classifiers ([For Contract] button) and client classifiers ([For Client] button) can be viewed in the "Client and Contract Classifiers" form ("Issuing → Customer Support → Client and Contract Classifiers", or "Acquiring → Customer Support → Client and Contract Classifiers").





## Chapter 2. Calculated Classifiers (Decisions)

A calculated classifier is a set of conditions based on client and/or contract classifiers (Full → Configuration Setup → Common Handbooks → User Classifiers) and a set of possible values, one of which is assigned to such a classifier according to the results of checking that the conditions specified have been met.

The execution of actions (for example, opening Events, activation of a limiter) depending on calculated classifiers is set up using IF\_CS group tags for the corresponding objects (Events, usage limiters, etc., see the section "Configuring Execution of Actions Depending on a Calculated Classifier Value") as for client and contract classifiers.

### Configuring Calculated Classifiers

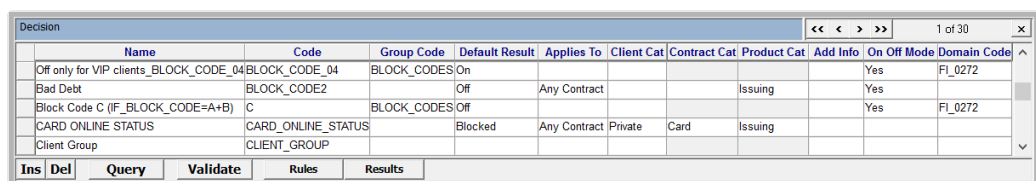
#### "Decision" Form

Calculated classifiers (Decisions) are set up in the "Decision" form (Full → Configuration Setup → Common Handbooks → Decision), see Fig. 19.

Each record in the "Decision" form is a separate calculated classifier. Each calculated classifier contains conditional expressions (see the description of the "Rules" and "Conditions" forms in the section ""Rules" Form") that are used to determine whether client or contract parameters (client and contract classifier values) meet set conditions. According to the results of meeting the conditions, a calculated classifier value is defined (values are configured in the "Results" form, see the section ""Results" Form"). The procedure for defining the value of a calculated classifier is as follows:

Conditional expressions configured for a calculated classifier are executed one at a time.

- If the check of the conditional expression has a positive result (returns the "true" value), the value defined in the conditional expression is returned for the calculated classifier (see the section ""Results" Form"). This value is assigned to the calculated classifier of the corresponding contract or client.
- If no conditional expression has a positive result when checked ("false" value), the default value is returned for the calculated classifier (see the description of the *Default Result* field of the "Decisions" form). This value is assigned to the calculated classifier of the corresponding contract or client.



Name	Code	Group Code	Default Result	Applies To	Client Cat	Contract Cat	Product Cat	Add Info	On Off Mode	Domain Code
Off only for VIP clients_BLOCK_CODE_04	BLOCK_CODE_04	BLOCK_CODES	On						Yes	FI_0272
Bad Debt	BLOCK_CODE2		Off	Any Contract			Issuing		Yes	
Block Code C (IF_BLOCK_CODE=A+B)	C	BLOCK_CODES	Off						Yes	FI_0272
CARD ONLINE STATUS	CARD_ONLINE_STATUS		Blocked	Any Contract	Private	Card	Issuing			
Client Group	CLIENT_GROUP									

Fig. 19. "Decision" form

The form contains the following fields:

- *Name* – calculated classifier code.
- *Code* – calculated classifier code.
- *Group Code* – calculated classifier group code.
- *Default Result* – calculated classifier default value returned if not one of the conditional expressions when checked has a positive result (the values is selected from a list configured in the "Results" tab).
- *Applies To* – defines objects for which a calculated classifier value is calculated when making the corresponding requests to a contract in the hierarchy: i.e. objects for which conditional expressions are calculated and for which the values of classifiers set in these expressions are determined (if the *Applies To* field is not filled in settings for these classifiers).



A conditional expression is only calculated for one contract, depending on settings for the calculated classifier's *Applies To* field. Moreover:

- If the *Applies To* field of a contract or client classifier set in a conditional expression is filled in, the value of this classifier will be determined according to its own *Applies To* field setting.
- If the *Applies To* field is not filled in for both the calculated classifier and the contract or client classifier set in the conditional expression, all calculations are made for the current contract.

Possible values for the *Applies To* field:

- "Any Contract" – an expression for a calculated classifier is calculated for the contract for which the request was made.
- "Main Contract" – an expression for a calculated classifier is calculated for the main contract in a "Main/Sub" hierarchy.
- "Client" – when a contract gets a request about the value of a calculated classifier, the value is calculated for the client.
- "Top Contract" – a classifier is calculated for the top contract in the hierarchy.
- "CP Client" – this value is reserved for use in the Customer Profile module. The Customer Profile module is not included in the standard configuration of WAY4 and requires a separate license from the WAY4 vendor.

Availability of the *Client Cat*, *Contract Cat*, and *Product Cat* fields is determined by the value selected in the *Applies To* field. For example, When the value of the *Applies To* field is "Client", only the *Client Cat* field from this group will be available.

- "Document" – this decision is only calculated when processing a document; it is not shown in the interface and is not recorded in the CS\_DECISION\_LOG table (no history of changes to the classifier is recorded; see the section "History of Changes to Calculated Classifier Values"). This value is used together with the "By Apply Rules" value of the *Rule Category* field (see the section ""Rules" Form") to configure redefinition of contracts/accounts for recording fees and contracts for

accruing interest (see the section "Redefining Contracts and Contract Accounts" of the document "Products and Contract Subtypes").

- *Add Info* – used to enter additional parameters as tags.
- *On Off Mode* – this field is used when setting up Product options. "Yes" is set for classifiers that only have two values – "positive" and "negative" (see the section "Blocking Product Options").
- *Domain Code* – classifier domain code. This code allows classifiers to be grouped so that certain classifier groups can be shown for specific institutions and contracts. If the field is not filled in, this classifier will be available for all institutions and contracts.



Several classifiers can be set with the same code (*Code* field) and different *Domain Code* values.

The [Results] button is used for access to the "Results for <calculated classifier name>" form in which possible values for a calculated classifier are defined (see the section ""Results" Form").

The [Rules] button is used for access to the "Rules for <calculated classifier name>" form which together with its child form "Conditions for..." is used to define conditional expressions for checking the correspondence of client and contract classifier values with the conditions specified (see the section ""Rules" Form").

## "Results" Form

The "Results for <calculated classifier name>" form is used to configure possible values for a calculated classifier, see Fig. 20.

Name	Response Code
Inside Client	C_CLIENT
Outside Client	C_GUEST
Unknown Client	C_UNKNOWN

Fig. 20. "Results" form. Configuring possible values for a calculated classifier

The form contains the following fields:

- *Name* – value name.
- *Response Code* – value code.

## "Rules" Form

The "Rules" form is used to define conditional expressions for checking the correspondence of client and contract classifier values with set conditions, see Fig. 21.

Priority	Rule Category	Condition Type	Result	Comment Text	Classifier	Is Active	Date From	Date To
0	By Condition	OR				Yes	00/00/0000	00/00/0000

Ins Del Query Conditions

Fig. 21. Configuring conditional expressions in the "Rules" form

The form contains the following fields:

- *Priority* – priority for executing the expression (the expression is executed in ascending order of the values in this field).
- *Rule Category* – type of check:
  - "By Condition" – a check is made of conditions specified in the "Condition" child tab with consideration of the logical operator for joining them that is specified in the *Condition Type* field; the first time the expression is executed successfully, for the calculated classifier the value specified in the *Result* field is returned and the check of the remaining expressions is ignored.
  - "By NOK Status" – a check is made of the value in the *Valid* field for the current value of the client or contract classifier specified in the *Classifier* field of this form. If the current value of the *Valid* field is "No", for the calculated classifier, the value specified in the *Result* field will be returned; otherwise the default value will be returned (Default Result).
  - "By Apply Rules" – the conditions specified as tags in the *Apply Rules* field of this rule are checked. This value is used together with the "Document" value of the *Applies To* field in the "Decisions" form (see the section "'Rules' Form") to redefine contracts/accounts for recording fees and contracts for accruing interest. See the section "Redefining Contracts and Contract Accounts" of the document "Products and Contract Subtypes").
  - "Custom" – the check is made specified in the custom procedure "CUST\_CS\_CHECK\_RULE".
- *Condition Type* – logical operation for joining checked conditions:
  - "OR" – logical "OR".
  - "AND" – logical "AND".
- *Result* – calculated classifier value returned if the conditional expression is executed successfully. Selected from the list configured in the "Results for..." form (see Fig. 20 in the section "'Results' Form").
- *Comment Text* – comment text.
- *Classifier* – checked client or contract classifier (used when the value of the *Rule Category* field is "By NOK Status").
- *Apply Rules* – used to specify tagged parameters. Used when the value of the *Rule Category* field is "By Apply Rules". See the section "Redefining Contracts and Contract Accounts" of the document "Products and Contract Subtypes").

- *Is Active* – indicates whether expression is active. If the "Yes" value is specified, this conditional expression will be checked, if the value is no, it will not be checked.
- *Date From* – start date of expression's activation. The field can be edited if the "Yes" value is specified in the *Is Active* field.
- *Date To* – end date of expression's activation. The field can be edited if the "Yes" value is specified in the *Is Active* field.

If the value "By Condition" is selected in the *Rule Category* field, when a record is selected in the "Rules for..." form, the "Conditions for..." form will be displayed, see Fig. 22.

Classifier	Condition Rule	Classifier Value	Apply Rules
Financial Institute	Same or Higher Severity As	Principal	

Ins Del Query

Fig. 22. Configuring parameters in the "Conditions" form

The form contains the following fields:

- *Classifier* – client or contract classifier whose value is used for comparison.
- *Condition Rule* – operation for checking the condition.
  - "IS" – the condition is met if the current value of the client or contract classifier matches the value in the *Classifier Value* field.
  - "NOT" – the condition is met if the current value of the client or contract classifier does not match the value in the *Classifier Value* field.
  - "NOT OK" – the condition is met if "No" is specified in the *Is OK Value* field for the current client or contract classifier value (see Fig. 5 in the section "Configuring User Classifiers").
  - "IS OK" – the condition is met if "No" is specified in the *Is OK Value* field for the current client or contract classifier value (see Fig. 5 in the section "Configuring User Classifiers").
  - "Same or Higher Severity As" – the condition is met if for the current client or contract classifier, a value higher than or equal to the priority of the *Classifier Value* field value is specified in the *Weight Factor* (priority) field of the "Values for <classifier name>" form (see Fig. 5 in the section "Configuring User Classifiers").
  - "Same or Lower Severity As" – the condition is met if for the current client or contract classifier, a value higher than or equal to the priority of the *Classifier Value* field value is specified in the *Weight Factor* (priority) field of the "Values for <classifier name>" form (see Fig. 5 in the section "Configuring User Classifiers").
- *Classifier Value* – the client or contract classifier value with which comparison is being made.

- *Apply Rules* – used to enter additional parameters as tags. In this field, in particular, the `CONTRACT_FOR` tag with the "BILLING" or "TOP" value can be set, making it possible to define the contract hierarchy level on which the classifier will be checked.

## Viewing Calculated Classifier Current Values

A calculated classifier is shown in the "Classifiers" form of the client or contract together with system and user client and contract classifiers; see the section "Viewing Client and Contract Classifier Data". The current value of a calculated classifier can be viewed. The classifier value is calculated directly when the "Classifiers" form is opened.

## Configuring Execution of Actions Depending on a Calculated Classifier Value

Execution of actions in WAY4 depending on calculated classifier values assigned to a client and/or contract are configured using `IF_CS` group tags (as for client and contract classifiers), see the section "Executing Actions Depending on Classifier Values".

## Sample Configuration

In a contract, a standing payment order is set up that is activated with a certain frequency when loan debt arise (it is used to repay debt).

The following settings must be made:

- When the first unsuccessful attempt is made to pay debt (i.e. generate and process a document according to the order), a message about this is not generated for the client.
- When the second and third unsuccessful attempts are made to pay debt, a message to the client is generated and a fee is charged.
- Beginning from the fourth unsuccessful attempt to repay debt, a message to the client is generated, a fee is not charged.
- In a number of cases (for example if the client is bankrupt), a message is not sent.

Settings with regard to client and contract classifiers and calculated classifiers (Decisions) are made as follows:

- Create client and contract classifiers (Full → Configuration Setup → Common Handbooks → User Classifiers):
  - "Account state" classifier – client (contract) status (state) classifier with "Delinquency", "Bankruptcy", and "Account OK" values, see Fig. 23.
  - "Warning Letter" classifier with three statuses: "No" (don't send a message), "Fee Charged (2-3)" (a message is sent, a fee is charged), "No Fee Charge (4)" (a message is sent, no fee is charged), see Fig. 23.

User Classifiers										
Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Category	
Account State	ACC_STATE	SEPA_DD	Classifier	Account OK	Main Contract				Primary	
Warning Letter	WARNING_LETTER	SEPA_DD	Classifier	NO	Main Contract				Primary	

Values for Account State										
Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To		
0	Delinquency	DELIQ				Yes	00/00/0000	00/00/0000		
1	Bankruptcy	BNKR				Yes	00/00/0000	00/00/0000		
2	Account OK	ACC_OK				Yes	00/00/0000	00/00/0000		

Values for Warning Letter										
Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To		
0	Fee Charged (2-3)	FEE				Yes	00/00/0000	00/00/0000		
1	NO	NO				Yes	00/00/0000	00/00/0000		
2	No Fee Charged (4)	NO_FEE				Yes	00/00/0000	00/00/0000		

Fig. 23. Configuring client and contract classifiers

- Create a calculated classifier (Full → Configuration Setup → Common Handbooks → Decision) "Warning Letter" based on "Account state" and "Warning Letter" client and contract classifiers created in the previous step, see Fig. 25.
  - The "Send letter fee" value of the "Warning Letter" classifier is assigned if the contract has the "Account OK" value of the "Account State" classifier and the "Fee Charged (2-3)" value of the "Warning Letter" classifier.
  - The "Send letter w/o fee" value of the the "Warning Letter" classifier is assigned if the contract has the "Account OK" value of the "Account State" classifier and the "No Fee Charged (4)" value of the "Warning Letter" classifier.



Decision

Name	Code	Decision Category	Default Result
Warning Letter	WRN_LETTER	Transaction	

Ins Del Query Rules Results

Results for Warning Letter

Name	Response Code
Send letter w/o fee	NO_FEE
Send letter fee	FEE

Ins Del Query

Rules for Warning Letter

Priority	Rule Category	Condition Type	Result	Comment Text	Classifier	Is Active
0	By Condition	AND	Send letter w/o fee			Yes
1	By Condition	AND	Send letter fee			Yes

Ins Del Query Conditions

Conditions for Rules for Warning Letter (1)

Classifier	Condition Rule	Classifier Value
Warning Letter	IS	No Fee Charged (4)
Account State	IS	Account OK

Ins Del Query

Conditions for Rules for Warning Letter (1)

Classifier	Condition Rule	Classifier Value
Warning Letter	IS	Fee Charged (2-3)
Account State	IS	Account OK

Ins Del Query


Fig. 24. Configuring calculated classifiers (Decisions)

- Configure two Event types (see Fig. 25).
  - An "e-mail w/o fee" Event opens if the contract has the "Send letter w/o fee" value of the "Warning Letter" calculated classifier (see IF\_CS tags in the *Special Parm*s field).
  - An "e-mail fee" Event opens if the contract has the "Send letter fee" value of the "Warning Letter" calculated classifier (see IF\_CS tags in the *Special Parm*s field).


Event Types												<< < > >>	
	Product	Contract	Institution	Name	Code	Sup	Cor	ation	Typ	Duration	Ext	Custom Co	Special Parm
	Issuing	Account	NWB1	e-mail fee	LETTER_FEE				Single	0			IF_CS_TYPE=WRN_LETTER;IF_CS_VALUE=FEE;
➔	Issuing	Account	NWB1	e-mail w/o fee	LETTER_NO_FEE				Single	0			IF_CS_TYPE=WRN_LETTER;IF_CS_VALUE=NO_FEE;
Ins	Del	Query	Check	Messages	Full Info	Event Chain	Used By	Classifiers					

Fig. 25. Configuring Event types

## History of Changes to Calculated Classifier Values


 The global parameter `DECISION_LOG_MODE` determines the mode for logging the history of changes to calculated classifiers (Decisions) (see the section "DECISION\_LOG\_MODE" of the document "WAY4™ Global Parameters").

The history of changes to calculated classifier values is logged, for example, to optimise the export of data to external systems, for example to the Datamart module. The module is not included in the basic configuration of WAY4 and is supplied according to a separate agreement with the WAY4 vendor.

 Before version 03.46.30, history was logged in deferred mode after running the menu item "Full → DB Administrator Utilities → Object Tasks → Start Object Tasks Scheduler" once. Starting from version 03.46.30, decisions are not logged by default.

The global parameter `DECISION_LOG_MODE` determines the mode for logging the history of changes to calculated classifiers (Decisions) in the `CS_DECISION_LOG` table. The logging mode can be set globally or for specific decisions. Possible values for the global parameter:

- "SKIP" – changes are not logged.
- "IMMEDIATE" – a change is logged immediately when a linked classifier changes.
- "DEFERRED" – changes are logged in deferred mode after running the menu item "Full → DB Administrator Utilities → Object Tasks → Start Object Tasks Scheduler" once. In deferred logging mode, a classifier value is calculated in the background over the course of the day, not at the time of the corresponding request.


 For the "SKIP", "IMMEDIATE", and "DEFERRED" values, the logging mode is not checked for specific classifiers, meaning these values only work globally. These values do not affect the mode for logging decisions exported to Datamart.

- "CHECK\_SKIP" – used if the logging mode is determined individually for specific decisions. When this value is specified, a check is made for the `LOG_MODE` tag in the classifier. If the tag is not set, the default mode is used (in this case, "SKIP").
- "CHECK\_IMMEDIATE" – used if the logging mode is determined individually for separate decisions. When this value is specified, a check is made for the `LOG_MODE` tag in the classifier. If the tag is not set, the default mode is used (in this case, "IMMEDIATE").
- "CHECK\_DEFERRED" – used if the logging mode is determined individually for separate decisions. When this value is specified, a check is made for the `LOG_MODE` tag in the classifier. If the tag is not set, the default mode is used (in this case, "DEFERRED").

The `LOG_MODE=<value>` tag is set in a decision's *Add Info* field. The tag can have one of the three following values:

- "SKIP" – changes are not logged (see the description of the same value for the global parameter "DECISION\_LOG\_MODE").
- "IMMEDIATE" – a change is logged immediately when a linked classifier changes (see the description of the same value for the global parameter "DECISION\_LOG\_MODE").

- "DEFERRED" – changes are logged in deferred mode (see the description of the same value for the global parameter "DECISION\_LOG\_MODE").

 Decisions that are exported to Datamart are always logged, and logging cannot be disabled for them or incorrect data will be imported to Datamart. It is recommended to set up logging mode for these classifiers individually (only for those that are included in export to Datamart). Only the CHECK\_IMMEDIATE (default) or CHECK\_DEFERRED mode can be selected for them (see the descriptions above).

The history of changes to calculated classifiers cannot be viewed in WAY4Cards.

## Chapter 3. Blocking Product Options

### Overview

Classifiers can act as Product options. Product options are indicators of additional functions (actions) performed by a specific Product's contract (or with regard to a contract) during its lifecycle. This may be allowing/prohibiting authorisation for a contract, charging a fee, etc.

Contract user classifiers with the *On Off Mode* attribute are used to set up Product options. These classifiers can only have two values – "Off" and "on", one of which is positive and the other negative (see the description of the *Is OK Value* field).

Product options (i.e. the corresponding classifiers) are set in a Product and inherited by all contracts created on its basis (see the section "Contract Classifiers" of the document "Products and Contract Subtypes"). For example, when a contract is created, authorisation for it is permitted by default – the contract inherits the Product's "Authorization" classifier with the default "positive" value – "On".

A Product option's positive value can be "blocked". For example, authorisation for a contract may be blocked when the contract has serious delinquency, or when a collection case is open for the contract.

Blocking conditions are set up using calculated classifiers (Decisions) and are based on a combination of contract and client user and/or system classifiers values used for contract and client segmentation.

Depending on a Product option's blocking status (blocking is switched on/off), various actions can be set up in WAY4. For example, an additional fee may be charged or a client notification generated.

### Blocking Setup

#### Segmentation Classifiers

Client and contract user and system classifiers can be used to segment contracts and clients.

The following classifiers are used in our example:

- "Client Category" user classifier ("Normal", "VIP", "SUPERVIP" values).
- "DLQ\_LEVEL" system classifier (see the section "Configuring the "DLQ\_LEVEL" System Classifier"). Values:
  - "No debts" – no delinquency.
  - "Due" – delinquency of 1 to 30 days.
  - "Past Due 01" – delinquency of 31 to 60 days.
  - "Past Due 03" – delinquency of 61 to 90 days.

- ...
- "Past Due 04" – delinquency of 121 to 150 days.
- "Collection Indicator" user classifier determining the contract's collection status. For values, see Fig. 26.

User Classifiers											<< < > >>			2 of 3		x
	Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info	On Off Mode	Domain Code			
	Delinquency Level	DLQ_LEVEL		Classifier	No Debts	Main Contract				Standard						
➔	Collection Indicator	COLLECTION		Status	10 Normal	Main Contract			Issuing	Primary			FI_0272			
	Client Category	CL_CATEGORY		Classifier	Normal	Client				Primary			FI_0272			
Ins Del Query Validate Values ConfGroup																

Values for Collection Indicator_0272											<< < > >>			1 of 5		b	x
	Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To								
➔	50	Voluntary Debt Settlement	VOL_DEBT				Yes	00/00/0000	00/00/0000								
	40	Freeze due to debt negotiation	BAD_DEBT				Yes	00/00/0000	00/00/0000								
	30	Repayment plan inst	REPAIMENT_INST				Yes	00/00/0000	00/00/0000								
	20	Repayment plan core	REPAIMENT_CORE				Yes	00/00/0000	00/00/0000								
	10	Normal	NORMAL				Yes	00/00/0000	00/00/0000								
Ins Del Query																	

Fig. 26. Configuring segmentation classifiers

## Blocking Conditions (Decisions)

Conditions for blocking Product options are a combination (combinations) of segmentation classifier values (see the section "Segmentation Classifiers"). These combinations are configured using calculated classifiers (Decisions) with the *On Off Mode* attribute. I.e. these calculated classifiers have only two values – "Off" and "On". Blocking is switched on if the calculated classifier's value is "On". When the value is "Off", blocking is not active (switched off).

The following "blocking " calculated classifiers are configured in our example:

- In the example in Fig. 27, blocking conditions are as follows: a collection case is open for the contract (see the Collections module) and the value of the corresponding "Collection Indicator" classifier is "Voluntary Debt Settlement" or "DCA Collection". In this case, blocking is switched on according to the "Contract in Collection" classifier.

**Decision**

Name	Code	Group Code	Default Result	Applies To	Client Category	Add Info	On Off Mode	Domain Code
Contract in Collection	BLOCK_CODE01	BLOCK_CODES	Off				Yes	

**Rules for Contract in Collection**

Priority	Rule Category	Condition Type	Result	Comment Text	Classifier	Is Active	Date From	Date To
0	By Condition	OR	On	Collection Indicator		Yes	00/00/0000	00/00/0000

**Conditions for Rules for Contract in Collection**


Classifier	Condition Rule	Classifier Value	Apply Rules
Collection Indicator	IS	50 Voluntary Debt Settlement (OK)	
Collection Indicator	IS	60 DCA Collection (OK)	

**Results for Contract in Collection**

Name	Response Code
On	ON
Off	OFF

Fig. 27. Configuring the "Contract in Collection" calculated classifier

- In the example in Fig. 28, blocking is performed when a critical level of delinquency is recorded for the contract: if a VIP client's contract has delinquency of more than four months (the value of the DLQ\_LEVEL classifier is "Past Due 4"), and a regular client's contract has delinquency of more than one month (the value of the DLQ\_LEVEL classifier is "Past Due 1"). In this case, blocking is switched on according to the "Bad Debt" classifier.

 Dependence on the "Delinquency Level" classifier is configured in the standard way using the "Rules" and "Conditions" forms (see Fig. 28), Dependence on the "Client Category" classifier is configured using IF\_CS tags (see the *Apply Rules* field in the "Rules" form in Fig. 28). For more information, see the section "Executing Actions Depending on Classifier Values".

Decision

Name	Code	Group Code	Default Result	Applies To	Client Cat	Contract Cat	Product Cat	Add Info	On Off Mode	Domain Code
Bad Debt	BLOCK_CODE2		Off	Any Contract			Issuing		Yes	

Ins Del Query Validate Rules Results

Rules for Bad Debts

Priority	Rule	Category	Condition Type	Result	Comment Text	Classifier	Is Active	Date From	Date To	Apply Rules
10	By Condition	AND	On	Bad Debts for VIP Clients		Yes	00/00/0000	00/00/0000	IF_CS_TYPE=CL_CATEGORY:IF_CS_VALUE=VIP	
20	By Condition	AND	On	Bad Debts for non VIP Clients		Yes	00/00/0000	00/00/0000	IF_CS_TYPE=CL_CATEGORY:IF_NOT_CS_VALUE=VIP	

Ins Del Query Conditions

Conditions for Rules for Bad Debts

Classifier	Condition Rule	Classifier Value	Apply Rules
Delinquency Level	IS	Past Due (1 - 29)	

Ins Del Query

Results for Bad Debts

Name	Response Code
On	ON
Off	OFF

Ins Del Query

Fig. 28. Configuring the "Bad Debt" calculated classifier

**i** In our example, two blocking calculated classifiers are set up: the "Collection Indicator" classifier (with the code BLOCK\_CODE1) and the "Bad Debt" classifier (with the code BLOCK\_CODE2). If these calculated classifiers are used to block one Product option, for the blocking reason to be shown correctly in the interface, set up an aggregating calculated classifier with the *On Off Mode* attribute, see Fig. 29.

Decision

Name	Code	Group Code	Default Result	Applies To	Client Cat	Contract Cat	Product Cat	Add Info	On Off Mode	Domain Code
Authorization Prohibited	BLOCK_CODE3		Off	Any Contract			Issuing		Yes	

Ins Del Query Validate Rules Results

Rules for Authorisation Prohibited

Priority	Rule	Category	Condition Type	Result	Comment Text	Classifier	Is Active	Date From	Date To	Apply Rules
10			On	Contract in Collection or Bad Debt are On		Yes	00/00/0000	00/00/0000	IF_CS_TYPE=BLOCK_CODE1: IF_CS_VALUE=ON	
20			On	Contract in Collection or Bad Debt are Off		Yes	00/00/0000	00/00/0000	IF_CS_TYPE=BLOCK_CODE2: IF_CS_VALUE=ON	

Ins Del Query

Results for Authorisation Prohibited

Name	Response Code
On	ON
Off	OFF

Ins Del Query

Fig. 29. Configuring the "Authorization Prohibited" aggregating calculated classifier

Dependence of the "Authorization Prohibited" aggregating classifier on the "Collection Indicator" (with the code BLOCK\_CODE1) and "Bad Debt" (with the code BLOCK\_CODE2) classifiers is configured using IF\_CS tags (see the *Apply Rules* field in the "Rules" field in Fig. 29. For more information, see the section *Executing Actions Depending on Classifier Values*).

## Product Option Blocking

A Product option (i.e. the corresponding user classifier for the contract) is set in the Product (see the section "Contract Classifiers" of the document "Products and Contract Subtypes").

This classifier is configured with the *On Off Mode* attribute. I.e., it has only two values: "Off" and "On" and one of these values is "positive" and the other "negative" (see the description of the *Is OK Value* field).

In our example, two options are set up for the Product:

- "Authorization" classifier – defines whether authorisation for the contract is allowed/prohibited. By default, the classifier has the positive value "On" (i.e. authorization is allowed).
- "Collection Fee" classifier – charge a fee at a certain stage in a contract collection case. By default, the classifier has the positive value "Off" (i.e. no fee is charged).


Blocking conditions (i.e. a "blocking" calculated classifier) are specified in the Product option's *Add Info* field (of the contract's user classifier) using the `<BLOCK_CODE=<code of the blocking calculated classifier (Decision)>; tag` (see Fig. 30, Fig. 31). Blocking is switched on if this calculated classifier's value is "On".

Several calculated classifier (Decisions) codes with internal symbols can be used as the tag value:

- "+" (or) – blocking is enabled if one of the specified classifiers (or both classifiers) has the "On" value. For example, `BLOCK_CODE=<code 1>+<code 2>`.
- "-" – blocking is enabled if the value of this classifier is "Off". For example, the tag `BLOCK_CODE=-<code1>`.

The `BLOCK_CODE=<code 1>+<code 2>-<code 3>`; tag means that blocking is enabled if the value of the classifier with code 1 or code 2 is "On" and the value of the classifier with code 3 is "Off".

When blocking is enabled and a "positive" value is set for the Product option ("Yes" is specified in the *Is OK Value* field), this "positive" value is blocked.

 Note that only a "positive" value for a Product option is blocked. If the option has a "negative" value, blocking is not enabled.

User Classifiers											<< < > >>			2 of 2		x	
Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info	On Off Mode Domain Code						
Authorization	AUTH	PRODUCT_OPTION	Classifier	On	Main Contract			Issuing	Primary	BLOCK_CODE=BLOCK_CODE3;Yes							
Ins Del		Query		Validate		Values		ConfGroup									
Values for Authorization											<< < > >>			2 of 2		b	x
Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To									
10	On	ON		Yes		Yes	00/00/0000	00/00/0000									
20	Off	OFF		No		Yes	00/00/0000	00/00/0000									
Ins Del		Query															

Fig. 30. Configuring the "Authorization" Product option



Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info	On Off Mode	Domain Code
Collection Fee	COLLECTION_FEE	PRODUCT_OPTION	Classifier	Off	Main Contract			Issuing	Primary	BLOCK_CODE=BLOCK_CODE1	Yes	

Weight Factor	Name	Code	Result Event Code	Is OK Value	Add Info	Is Active	Date From	Date To
10	On	ON		No		Yes	00/00/0000	00/00/0000
20	Off	OFF		Yes		Yes	00/00/0000	00/00/0000

Fig. 31. Configuring the "Collection Fee" option

## Showing Blocking Reasons in the Interface

The reason for blocking a Product option is shown in customer service workbench (Customer Service → Customer Service), see Fig. 32.

Contract # 272-P-117007

Product 272-Block Code

Main Product 272-Block Code 1

Product Details

Subtype 272-Private Client Account

Reporting

Institution Block Codes FI

Branch

Service Group

Short Name Test Client 100000004868330

First Name Test

Last Name Test

Security Name

Company Name

Birth Date 00/00/0000

Reg Number Test Client 100000004868330

Date Open 30/05/2016

Card Expire

Status Account OK

Status Details

Currency RUR

Available 49 800.00

Credit Limit 50 000.00

Last Paym. Amt 0.00

Last Paym. Date 00/00/0000

Last Activity 30/05/2016

Current Billing

Start Date 01/05/2016

End Date 31/05/2016

Total Due 0.00

Past Due 0.00

Due Date 00/00/0000

Query Set Financials Memo Client Related Billing Auth Limiters Collection Services Active Addr Own Addr Classifiers

Classifiers for Test Client 100000004868330, Top Level [272-P-117007]

Set For	Classifier	Classifier Value	Previous Value	Value Date	Value Description	Officer
272-P-117007	Behavior Type			00/00/00 00:00:00		
272-P-117007	Bal Type Limits Yearly FOD			00/00/00 00:00:00		
272-P-117007	Bal Type Limits Yearly			00/00/00 00:00:00		
272-P-117007	Bad Debt	On		00/00/00 00:00:00		
272-P-117007	Authorization	On (Blocked by BLOCK_CODE3)		00/00/00 00:00:00		

Fig. 32. Showing the reason for blocking the "Authorization" Product option

When blocking of a Product option is enabled, the code of the blocking calculated classifier is shown (in brackets) next to the Product option's value in the *Classifier Value* field of the "Classifiers" form.

If a combination of codes using the BLOCK\_CODE tag was specified when setting up blocking, the *Classifier Value* field will show the first code of the calculated classifier that blocked the option. For example, when the tag **BLOCK\_CODE=BLOCK\_CODE1+BLOCK\_CODE2;** is set, if the calculated classifier with code 1 has the "On" value, no further check is made, the option is blocked and "On (Blocked by BLOCK\_CODE1)" will be shown in the *Classifier Value* field in the interface. If the value of the second calculated classifier **BLOCK\_CODE2** is also "On", incomplete information about blocking will be shown in the interface. In this case, it is recommended to configure an additional aggregating classifier and use it as the value of the BLOCK\_CODE tag (in the example in the section "Blocking Conditions (Decisions)", this is the classifier with the code BLOCK\_CODE3).

## Execution of Actions Depending on Blocking Status

Execution of an action in WAY4 depending on the blocking status (i.e. on the values of the corresponding calculated classifiers) can be configured as follows:

- Using IF\_CS tags (like for client and contract classifiers, see the section "Executing Actions Depending on Classifier Values"). For example, IF\_CS\_TYPE=BLOCK\_CODE1;IF\_CS\_VALUE=ON; tags set in a payment order determine that the order will activate if blocking is enabled (if the value of the BLOCK\_CODE1 blocking calculated classifier is "On").
- Using the IF\_BLOCK\_CODE=<code of the blocking calculated classifier (Decision)>; tag. An action will be performed if blocking is enabled (if the value of this calculated classifier is "On").

Several calculated classifier (Decisions) codes in various combinations with internal symbols can be used as the tag value:

- "+" (or) – an action is performed if one of the specified calculated classifiers (Decisions) has the "On" value. For example, BLOCK\_CODE=<code 1>+<code 2>.
- "-" – an action is performed if the value of this calculated classifier (Decision) is "Off". For example, the tag BLOCK\_CODE=-<code1>.

The BLOCK\_CODE=<code 1>+<code 2>-<code 3>; tag means that an action is performed if the value of the calculated classifier with code 1 or code 2 is "On" and the value of the calculated classifier with code 3 is "Off".

The IF\_BLOCK\_CODE tag can be set for objects for which IF\_CS tags can be set; i.e. to select a Service, open an Event, activate a standing payment order, etc. For more information, see the section "Executing Actions Depending on Classifier Values".

## Chapter 4. Classifiers without a Fixed List of Values

Classifiers without a fixed list of values expand the area of activity of client and contract classifiers (Full → Configuration Setup → Common Handbooks → User Classifiers) described earlier in this document. The main difference in classifiers without a fixed list of value from regular client and contract classifiers is the possibility to set arbitrary parameters for contracts.

When working with contract and clients, it is often necessary to classify them according to various parameters that are not defined in WAY4, that don't have a fixed list of values known in advance (for example, the limit on the amount of cash that can be withdrawn in a 24-hour period; the region in which the cardholder is currently located; the client's registration number in an external system), or according to parameters with a large list of values (for example, client age). Regular client and contract classifiers can't be used for this since they assume preconfiguration of a fixed list of classifiers and their values. To resolve this task, classifiers without a fixed list of values are used. These classifiers are used to classify contracts as follows:

Classification is made using arbitrary tags (for example, AGE=32;).

- These tags are set in the following contract fields: ext\_data, add\_info\_01, add\_info\_02, add\_info\_03, add\_info\_04.
- These tags can be set, for example, using applications.

Conditions for executing actions in WAY4 depending on classifiers without a fixed list of values are configured using the IF\_PARM, IF\_PARM\_VALUE, and IF\_PARM\_FOR tags. The IF\_PARM\_NUMB, IF\_PARM<N>, IF\_PARM\_VALUE<N>, IF\_PARM\_FOR<N> tags can be used to check several parameters for a contract. See the description of the IF\_PARM\_NUMB tag.


The existence of the parameter can be checked without checking its value. To do so, the tag IF\_PARM\_VALUE=NOT\_EMPTY; is used.

Execution of actions in WAY depending on classifiers without a fixed list of values is configured as with "IF\_CS" tags, see the section "Executing Actions Depending on Classifier Values".

## Chapter 5. Contract and Client Custom Parameters

### "Contract Parameters Setup" Form

Contract and client custom parameters are kept in the "Contract Parameters Setup" special handbook (Full → Configuration Setup → Common Handbooks → Contract Parameters Setup).

 Starting from version 03.46.30, the "Contract Parameters Setup" form is based on the CONTR\_PARM table. In previous versions of WAY4, the form was based on data from the SY\_HANDBOOK table with the CONTRACT\_PARM\_LIST handbook code. The CONTRACT\_PARM\_LIST handbook is no longer supported.

The "Contract Parameters Setup" handbook is a custom list of various important parameters and properties for contracts and clients, specifying their type, location and how the history of changes will be logged.

For all parameters registered in the "Contract Parameters Setup" handbook, single interfaces are used to get the current value. What exactly must be done and where in the contract hierarchy is determined automatically in WAY4, based on settings in the "Contract Parameters Setup" handbook.

There are three types of contract custom parameters – tags (tags can be stored in the contract's ext\_data, add\_info\_01, add\_info\_02, add\_info\_03, and add\_info\_04 fields at any level of the contract hierarchy), classifiers (user classifiers, see the section "Configuring User Classifiers"), threshold tariffs and tariffs with the "Technical" role (see the document "WAY4™ Advanced Tariff Management").

It is not usually necessary to register tags, classifiers and threshold tariffs in the handbook; their use is standard. Registration is recommended in the following cases:


- If it is necessary to log the history of changes to a tag and/or view certain tags separately from the general list of a contract's tags. Moreover, the tag is already used in WAY4 and for one reason or another it's not possible to go from using the tag to using a classifier and/or tariff. For example, if there is a fixed interface for working with tags used by external systems (tags are loaded/updated from an external system). To resolve these tasks, register the tag in the "Contract Parameters Setup" handbook and link it with a classifier or tariff. The link is made with consideration of the following conditions:
  - A string tagged parameter, i.e. a tag whose value is a sequence of characters and/or digits (for example, CONTRACT\_ROLE=<role code>) should be linked with a client/contract/Product classifier (see the description of the "Classifier" value in the *Mirror To* field). In this case, changes to the tag will be logged as changes to the classifier.

A tag with a fixed list of values should be linked to a classifier. I.e. it's necessary that all possible values have been registered in the list of values

for the corresponding classifier in order to log. For tags without a fixed list of values, the history of changes will not be logged within a classifier.

- A numeric tag (containing a counter) is linked with a tariff (see the description of the "Tariff" value in the *Mirror To* field). In this case, changes to the tag will be logged as changes to a tariff with the special "Technical" role.

It's possible that a tag is not linked either to a classifier or tariff. In this case, registering the tag in the handbook may optimize searching for the tag – i.e. defining fields and level of the hierarchy where a search will be made for the tag. Therefore, it is possible to register a tag without a fixed list of values.

 If the tag was not used earlier in WAY4 (the tag is not present in the configuration), register a classifier with the necessary code in the "User Classifier" handbook (or configure a tariff). Tags should not be used in this situation.

- Classifiers can be registered in the "Contract Parameters Setup" handbook if it's necessary to search for a classifier value all the way up the contract hierarchy, a single interface is required for working with contract custom parameters.

It is not usually necessary to register classifiers in the "Contract Parameters Setup" handbook, since changes to classifiers are logged, they have their own management interfaces (view, set, etc.).

- It is not usually necessary to register Threshold tariffs in the "Contract Parameters Setup" handbook. Changes to these tariffs are logged in the standard mode for logging tariffs. Moreover, by default all Threshold tariffs are contract inexplicit custom parameters. I.e. when working with Threshold tariffs by default an interface is used that is applied to parameters from the "Contract Parameters Setup" handbook. For example, when getting a contract parameter in the GET\_CONTRACT\_PARMS procedure, a search is automatically made for a tariff with the "Threshold" role that has the required code.

A threshold tariff can be created in explicit form in the handbook to be able to redefine where a search will be made for the current tariff value (for example, in the Top Level contract instead of the current contract).

- Registration of parameters in the "Contract Parameters Setup" handbook is mandatory when assigning parameters with applications and when assigning parameters in the "Product Inspector module. If the parameter is not in the handbook, the application will not be processed and the parameter will not be assigned.

The "Contract Parameters Setup" form (see Fig. 33) used to register contract and client custom parameters is opened with the user menu item (Full → Configuration Setup → Common Handbooks → Contract Parameters Setup).

Name	Code	Value Type	Role	Value Location	Location Field	Hierarchy Level	Mirror To	Check Product	Check F1	Sub Main	Inheritance Rule	Tariff Code	Ext	Correction Action	Add Info	Is Ready
AUTO_ER_KEEP	AUTO_ER_KEEP	String	Contract			Top Level		Yes						Reapply		Ready
BILLING_DAY	BILLING_DAY	Counter	Contract			Billing Level Only								Reapply		Ready
CONTRACT_ROLE	CONTRACT_ROLE	String	Contract			Current Level Only								Reapply		Ready

Fig. 33. "Contract Parameters Setup" form

The form contains the following fields:

- *Code* – parameter code. This may be:
  - The name of the tag in the contract, client or Product.
    - ♦ The name of the tag from the contract's *Add Info01,02,03,04* or *ext\_data* field.
    - ♦ The name of the tag from the client's *Add Info01,02,03,04* field.
    - ♦ The name of the tag from the Product's *Custom Data* field.
  - Classifier code.
  - Tariff type code.
- *Value Type* – parameter type. Possible values:
  - "Amount" – amount.
  - "Counter" – numeric value.
  - "Percentage" – percentage.
  - "String" – string.
  - "Date" – date.

When a parameter with the "Date" type is set, the date must be in YYYY-MM-DD format.

A default value can be set for a "Date" type parameter. To do so, a hardcoded date must be specified as the value of the `DEFAULT_FROM=<>`; tag in the *Add Info* field of the "Contract Parameters Setup" form. Contract/client dates, for example, can be set as the tag's value (in the format <table name>.<table field name>):

- ♦ `CONTRACT.DATE_OPEN`
- ♦ `CONTRACT.FIRST_ACTIVITY_DATE`
- ♦ `CLIENT.DATE_OPEN`
- ♦ `CLIENT.BIRTH_DATE`
- ♦ `CLIENT.ADD_DATE_01`
- ♦ `CLIENT.ADD_DATE_02`

The code of another parameter with the "Date" type can be specified as the value of the `DEFAULT_FROM` tag.

Restrictions on registration of contract parameters with the "Date" type:

- The *Mirror To* field is not filled in for this parameter.
- This parameter's *Value Location* field must not have the "Classifier" or "Tariff" value.

- This parameter's *Check Product* and *Check FI* fields are not filled in (the "Yes" or "Classifier" value must not be set in these fields).
- The parameter must not have the same code as that of a standard functional date (DUE\_DATE, LP\_DATE, and others).
- The parameter must not have the same code as the following hardcoded codes:
  - ◆ DATE\_OPEN
  - ◆ BIRTH\_DATE
  - ◆ DATE\_EXPIRE
  - ◆ CARD\_EXPIRE
  - ◆ ACTIVE\_CARD\_EXPIRE
  - ◆ FIRST\_ACTIVITY\_DATE
  - ◆ ACTIVITY\_DATE
  - ◆ LAST\_BILLING
  - ◆ NEXT\_BILLING
  - ◆ ADD\_DATE\_01
  - ◆ ADD\_DATE\_02

A contract parameter with the "Date" type can be used to define the time from which a recurring weekly, monthly, quarterly, or yearly fee is charged (see the description of the BASE\_DATE tag for transaction subtypes).

- *Role* – parameter role. Possible values:
  - "Tariff Plan" – used to set up contract parameters for attaching tariff plans (see the section "Tariff Plans" of the document "WAY4™ Advanced Tariff Management"). The tariff management module is not included in the basic configuration of WAY4 and requires a separate license from the WAY4™ vendor. Specify the "String" value in the *Value Type* field for this value.

Only the "Top Level Only", "Billing Level Only" and "Current Level Only" values in the *Hierarchy Level* field can be used for a parameter with the "Tariff Plan" role. If a "Top Level Only"/"Billing Level Only" hierarchy type is specified for a parameter with the "Tariff Plan" role, when assigning a Tariff Plan to a top contract, all subcontracts will be checked (in a Main/Sub hierarchy, or for both hierarchies, respectively) for this Tariff Plan's suitability in the subtype.
  - "Calculation" – used to set up calculated contract parameters. Calculated parameters make it possible to use a contract balance type value to calculate a fee or to determine threshold values for tariffs with the "Service Limit" role. See the document "Calculated Contract Parameters". This feature is provided according to an additional agreement with OpenWay.
  - "Contract Number" – used to configure the parameter that sets the contract number. This parameter is used to redefine the contract number using FOR tags (for example, the CONTRACT\_FOR tag) or the FEE\_CONTRACT tag. Specifics for configuring the parameter:

- ◆ For the parameter, specify "String" in the *Value Type* field and "Contract" in the *Value Location* field.
- ◆ The parameter is set in a contract's EXT\_DATA field. Select "Ext Data" in the *Location Field* field.
- ◆ Don't fill in the *Mirror To*, *Check Product*, *Check FI* fields for the parameter or specify the DEFAULT\_FROM tag.
- ◆ When the parameter's value is set for a contract, specify the number of the account contract.
- ◆ If the parameter is not set for a contract or is not found for the number specified, the procedure for actions in this situation can be set up using the DEFAULT\_CONTRACT tag in the *Add Info* field of the "Contract Parameters Setup" form. Possible values for the DEFAULT\_CONTRACT tag: "DEFAULT" – the default contract is used, for example the one that is set in the Service; "SELF" – the current contract is used, for which redefinition was attempted; "MAIN" – the main contract in the "Main/Sub" hierarchy of the current contract for which redefinition was attempted is used; "TOP" – the top contract in the hierarchy of the current contract for which redefinition was attempted is used.
- ◆ A value for the corresponding FOR tag or FEE\_CONTRACT tag should be set in the following format (using the CONTRACT\_FOR tag as an example): CONTRACT\_FOR=CONTRACT\_PARM:<user parameter code>;.
- In other cases, the field should not be filled in.
- *Value Location* – the object in which the parameter value is stored. The location in which a search will be made for the parameter :
  - "Client" – the parameter (tag) will be searched for in the table with client data (CLIENT).

For this value, the *Check FI* field can be additionally filled in to check the parameter's value in the financial institution, if the parameter is not set for the client.

- "Contract" – the parameter (tag) will be searched for in the table with contract data (ACNT\_CONTRACT).

For this value, the *Check Product* and/or *Check FI* field can be additionally filled in to check the parameter's value in the Product and/or financial institution, if the parameter is not set in the contract.

For a custom parameter with the "Contract" value in the *Value Location* field, the "Classifier" value in the *Check Product* field and the "Classifier" value in the *Mirror To* field, the parameter value is taken from the *Default Value* field of the "Classifiers for Product name>" form (from the PRODUCT\_OPTION table; "Full → Configuration Setup → Products → Product Definition → Products → [Classifiers]") if a classifier is not set for the contract. The DEFAULT\_FROM=PRODUCT; tag must be set for the corresponding classifier. See the section "Contract Classifiers" of the document "Products and Contract Subtypes".



- "Product" – the parameter (tag) will be searched for in the Product table (APPL\_PRODUCT).

For a custom parameter with the "Product" value in the *Value Location* field and the "Classifier" value in the *Check Product* field, the parameter value is taken from the *Default Value* field of the "Classifiers for Product name>" form (from the PRODUCT\_OPTION table; "Full → Configuration Setup → Products → Product Definition → Products → [Classifiers]"). In this setup, the parameter cannot be set for a contract, the value is always taken from a Product. See the section "Contract Classifiers" of the document "Products and Contract Subtypes".

- "Classifier" – the parameter's current value is stored as the value of a custom classifier. When getting the parameter, its value is determined on the basis of the classifier.
- "Decision" – the parameter's current value is saved as the value of a calculated classifier. When getting the parameter, its value is determined on the basis of a calculated classifier.
- "Tariff" – the current value of the parameter is stored as a tariff value. When getting the parameter, its value is determined on the basis of the tariff with the corresponding code.

According to the specified code, the tariff type and tariff role are defined in the "Tariff Types" form (Tariffs → Tariff Types & Tariff Domains → Tariff Types). If there are several tariff types with this code and different roles registered in the form, an arbitrary role will be selected and further search for the tariff will be made according to the combination of the code and selected role.

This value, in particular, is used when setting up tariffs with the "Threshold" role in the "Contract Parameters Setup" form.

When a contract parameter with "Tariff" in the *Mirror To* or *Value Location* field is set or changed, a personal tariff related to the parameter is created/changed automatically.

If "Tariff" is set in the *Value Location* field, personal tariffs are only created on the basis of template tariffs (the parameter ALLOW\_TRF\_PERS=T is set globally or as a tag in the corresponding Product) and for the tariff and for the record in the "Contract Parameters Setup" form, the *Tariff Code Ext* field must be filled in so that changes in the values of the custom parameter cause the values of the personal tariff to be changed, to save the history of changes to the parameter.

When the value of a custom parameter with "Tariff" in the *Value Location* or *Mirror To* field (for example, when an empty value for the parameter is set in the Customer Service form) is cleared, the corresponding personal tariff is deactivated. The "Skip" value is set in the "Tariff Data" form for the corresponding record. After a personal tariff has been deactivated, default tariff settings can be applied to the contract – tariff settings defined by a contract parameter, from a template or standard domain.

When the value of a custom parameter with the "Contract" or "Client" value is cleared (for example, when an empty value for the parameter is set in

the Customer Service form), the corresponding tag is deleted from contract/ client parameters.

- *Location Field* – the field where the tag value is stored. Used for more exact definition of the tag value's location, to optimize searching. Used only for "Client" and "Contract" objects (only for records with the "Client", "Contract" values in the *Value Location* field).
- *Hierarchy Level* – the field is filled in for the "Contract" value of the *Value Location* field and defines which contracts in the hierarchy will be checked when searching for the value of this parameter (when making the corresponding requests to a contract in the hierarchy). First a search is made on the contract level, and then on the level of the corresponding Product:

- "Top Level Only" – a parameter value is searched for in the hierarchy's top contract.

When a custom parameter value is set for a subordinate contract, the parameter is set for the top contract in the hierarchy. For example, for the top contract, the value Value1 is set. When Value2 is set for the subordinate contract, this value is set for the top contract. A classifier is not set for the subordinate contract.


- "Billing Level Only" – a parameter value is searched for in the billing contract (contract used for settlements). This is the main account contract in a Main/Sub contract.
- "Current Level Only" – a parameter value is searched for in the contract to which the request is being made.
- "Till Top Level" – a parameter value is searched for starting from the contract for which the request was made and upward in the hierarchy to the top contract in the hierarchy.
- "Till Billing Level" – a parameter value is searched for starting from the contract for which the request was made and upward in the hierarchy to the billing contract.
- "Effective Level" – when this value is specified, the contract that is being checked is defined using the EFF\_CONTRACT tag in the *Add Info* field of the "Contract Parameters Setup" form.


- *Mirror To* – the field is used when registering tags in the form that are related to a specific tariff or classifier. Determines the object used to store the log of changes to a tag. The log is used when correcting transactions with Reversal Management module tools. It is only recommended to enable tag log storage if the Reversal Management module is used. Possible values:

- "Tariff" – this value should be specified if the tag value is an amount, interest rate, or counter (see the *Value Type* field). This value can only be used for the "Contract" value of the *Value Location* field.

When a contract parameter with "Tariff" in the *Mirror To* or *Value Location* field is set or changed, a personal tariff related to the parameter is created/changed automatically.

Note that the tag's value is specified as the value of the corresponding tariff when approving a contract.

 Creation (manual/by pipes) of personal tariffs that are based on the "Tariff" value of the *Mirror To* field is prohibited. Personal tariffs related to these parameters are created/changed automatically when the corresponding parameter is set/changed.

 If the mode for creating personal tariffs only on the basis of template tariffs (ALLOW\_TRF\_PERS=T is set globally or as a tag in the corresponding Product) is used when "Tariff" is set in the *Mirror To* field, for both the tariff and for the record in the "Contract Parameters Setup" form, the *Tariff Code Ext* field must be filled in for the tariff so that a change in the value of a contract parameter leads to a change in the personal tariff's value, to save the history of changes to the parameter.

When the value of a custom parameter with "Tariff" in the *Value Location* or *Mirror To* field (for example, when an empty value for the parameter is set in the Customer Service form) is cleared, the corresponding personal tariff is deactivated. The "Skip" value is set in the "Tariff Data" form for the corresponding record. After a personal tariff has been deactivated, default tariff settings can be applied to the contract – tariff settings defined by a contract parameter, from a template or standard domain.

- "Classifier" – this value should be specified if the tag has a fixed list of values and can be linked with a specific classifier.
- If changes must be logged, all possible values for the tag should be registered in the list of values for the corresponding classifier. This value can only be used for the "Contract" or "Client" values of the *Value Location* field.

Note that the tag's value is specified as the value of the corresponding classifier when approving a contract. I.e. when approving a contract, a search is made for the tag in the client/contract/Product (according to settings in the "Contract Parameters Setup" form). The tag value is registered as the current value of the corresponding classifier (with the same code).

If a contract parameter has the "Classifier" value of the *Mirror to* field, for the corresponding classifier a default value is set in the Product or financial institution using the DEFAULT\_FROM tag (for example DEFAULT\_FROM=Value1;) the history of changes will be kept only when "Value1" is set using the contract parameter. When the default value from the DEFAULT\_FROM tag is used, for example, when creating a contract, this is not shown in the history of changes to the classifier.

- *Check Product* – this field makes it possible to set a check for the parameter value in the Product. Used when the *Value Location* field value is "Contract". Values:
  - "Yes" – a search for the parameter (tag) is first made in the table with contract data (ACNT\_CONTRACT) and then in the Product table (APPL\_PRODUCT).

- "No" – if "No" is specified in the field, a search for the parameter will not be made in the Product. This is the default value.
- "Classifier" – in this case, the default value specified for the Product in the "Classifiers for <Product name>" form (PRODUCT\_OPTION table) "Full → Configuration Setup → Products → Product Definition → Products → [Classifiers]" is used. See the section "Contract Classifiers" of the document "Products and Contract Subtypes".
- If the field is not filled in, and the "Classifier" value is specified in the *Mirror To* field or in the *Value Location* field, a check is made for the presence of the DEFAULT\_FROM tag in the *Add Info* field of the corresponding classifier. If the tag is found with the "PRODUCT" value (or one of the tag's values is "PRODUCT"), the *Check Product* field's value is considered to be equal to "Classifier", and a search is made for the default value according to tag settings. If the tag is not found or it is found with a different value, a search for the default value is not made.
- *Check FI* – this field makes it possible to set a check for the parameter value in the financial institution if the parameter is not set in the client or contract and/or in the Product. Used for the "Contract", "Client", and "Product" values of the *Value Location* field.



If the *Check FI* field is not filled in, and the "Classifier" value is specified in the *Mirror To* field or in the *Value Location* field, a check is made for the presence of the DEFAULT\_FROM tag in the *Add Info* field of the corresponding classifier. If the tag is found with the "FI" value (or one of the tag's values is "FI"), the *Check FI* field value is considered to be equal to "Classifier", and a search is made for the default value according to tag settings. If the tag is not found or it is found with a different value, a search for the default value is not made.

- *Sub Main Inheritance Rule* – the field is used to work with Tariff Plans (i.e. for contract parameters with the "Tariff Plan" role). The field defines rules for inheriting a tariff domain from a card contract to an account contract. When the Tariff Plan in the card changes, the priority of the new Tariff Plan is compared with that of the Tariff Plan in the account contract. There are two ways of comparing:
  - "Higher Priority" – comparison is made according to the "STRICTLY GREATER" principle. If the new Plan's priority is greater, the Tariff Plan in the account contract will be changed automatically.
  - "Equal or higher priority" – comparison is made according to the principle "GREATER OR EQUAL TO". If the new Plan's priority is greater than or equal to that of the Tariff Plan in the account contract, the account contract's Tariff Plan will be changed automatically.
- *Tariff Code Ext* – a tariff's unique identifier. The field is filled in if "Tariff" is specified in the *Mirror To* field and several tariffs with the "Technical" role are set up.
- *Correction Action* – this field determines the procedure for working with this parameter when correcting transactions with Reversal Management module tools.

- "Reapply" – the log of changes to the parameter will be reapplied without changes. This value should be selected if the parameter is set/changed with applications or manually.
- "Recalc" – the log of changes to the parameter is cleared to the date of correction and new recalculated values are not displayed. This value should be selected if the parameter is set/changed using custom procedures.
- "Skip" – adjustment of transactions with Reversal Management module tools does not affect this parameter.
- *Is Ready* – "Yes" will be shown in this field if the parameter was successfully checked using the [Check] button or automatically when migrating the handbook from the SY\_HANDBOOK table to the CONTR\_PARM table during WAY4 upgrade to version 03.46.30 (see the section "OBSOLETE Contract Parameters handbook" Form"). If errors occur, this field will contain "N". Error messages are available in the process log or in the "Contract Parameters Setup" form opened using the [Messages] button for a specific parameter.

## Current parameter values

Information about the current values of client or contract custom parameters can be viewed in the following forms:

- In the "Contract Parameters" form (see Fig. 34), opened with the following menu items:
  - "Issuing → Customer Support → Contract Parameters" – for issuing contracts.
  - "Acquiring → Customer Support → Contract Parameters" – for acquiring contracts.
  - "Full → Configuration Setup → Accounting Setup → Contract Parameters" – for bank contracts.

The "Contract Parameters" form contains a list of contracts that are registered in WAY4. This form can show contract parameters (click the [For Contract] button) and parameters for the corresponding clients (click the [For Client] button). See the form's description below.

- In the "Contract Parm's" form (the form's fields are the same as those in the "For Contract for <...>" form, see Fig. 35) containing contract parameters. The following menu items open this form:
  - "Customer Service → Customer Service → [Contract Parm]".
  - "Issuing → Contracts Input & Update → Issuing Contracts (Private) → [Contract Parm]".
  - "Issuing → Contracts Input & Update → Single Cards → [Contract Parm]".
  - "Issuing → Contracts Input & Update → Issuing Contracts – New (Private) → [Contract Parm]".

- "Issuing → Contracts Input & Update → Issuing Contracts (Corporate) → [Contract Parm]". In this case, the "Contract Parm for <contract number>" form is opened using the "Links" item from the DB Manager system menu.
- "Acquiring → Acquiring Contracts → Acquiring Contracts → [Contract Parm]".
- In the "Contract Parm's" form (the form's fields are the same as those in the "For Client for <...>" form, see Fig. 36) with client parameters. The following menu items open this form:
  - "Issuing → Contracts Input & Update → Clients (Private) → [Contract Parm]".
  - "Issuing → Contracts Input & Update → Clients (Corporate) → [Contract Parm]".

Also see the sections "Working with Contract and Client Custom Parameters" of the document "Customer Support Manual" the section "Editing Contract Parameter Values" of the document "Issuing Module", and the section "Contract Custom Parameters" of the document "Acquiring Module".

Contract #	Contract Name	Liab Category	Contract Type	Open	Status	Curr	Credit Limit	Available	Product	Product Category
6799990125151419	See main [6799990125151419]		Our Cirrus/Maestro	01/01/2015	Card OK	USD	0.00	0.00	0.00TARIFFS PLAN	Issuing
6799990135711830	See main [6799990135711830]		Our Cirrus/Maestro	01/01/2015	Card OK	USD	0.00	0.00	0.00TARIFFS PLAN	Issuing
6799990146848571	See main [6799990146848571]		Our Cirrus/Maestro	01/01/2015	Card OK	USD	0.00	0.00	0.00TARIFFS PLAN	Issuing
6799990160159228	See main [6799990160159228]		Our Cirrus/Maestro	01/01/2015	Card OK	USD	0.00	0.00	0.00TARIFFS PLAN	Issuing

Buttons: Ins Del Query Full Info **For Contract** For Client

Fig. 34. "Contract Parameters" form

The "Contract Parameters" form contains a list of contracts that are registered in WAY4. The following buttons are used to view, set or change a parameter in the "Contract Parameters" form:

- For a contract – using the [For Contract] button which opens the "For Contract for <...>" form, see Fig. 35. The "For Contract for <...>" form shows all contract parameters registered in the DB that have "Contract" in the *Location of Current Value* field.
- For a client – using the [For Client] button which opens the "For Client for <...>" form, see Fig. 36. The "For Client for <...>" form shows all contract parameters registered in the DB that have "Client" in the *Location of Current Value* field.

Code	Name	Value	Value Type	Role	Effective contract	Eff Level	Eff Location
DEC_DOM_TEST3	DEC_DOM_TEST3	res233	String		5413330155094536	Current Level	Classifier
DEF_1	DEF_1		String				
DEF_CR_LIMIT	default credit limit						
DEF_FI_CURRENT	DEF_FI_CURRENT		String				
DEF_FI_TILL_BILLING	DEF_FI_TILL_BILLING	f3	String				Fin Institution
DEF_FI_TILL_BILLING_PROD	DEF_FI_TILL_BILLING_PROD		String				

Buttons: Ins Del Query History

Fig. 35. "For Contract for <...>" form

Code	Name	Value	Value Type	Role	Effective contract	Eff Level	Eff Location
PERSONAL_MANAGER	PERSONAL_MANAGER		String				
CLIENT_CONTR_PAR	CLIENT_CONTR_PAR		String				

Buttons: Query Edit History

Fig. 36. "For Client for <...>" form

The "For Contract for <...>" and "For Client for <...>" forms contain the following fields:

- *Code, Name, Value, Value Type, Role* – parameter code, name, type, and role. These fields are filled in when creating a parameter and are described in the section ""Contract Parameters Setup" Form".
- *Effective Contract* – number of the contract for which the classifier value is set.
- *Eff Level* – hierarchy level of the contract for which the parameter value is set, relative to the current contract. Possible values:
  - "Top" – the parameter is set for the top contract in the hierarchy.
  - "Billing" – the parameter is set for the settlement contract. This is the main account contract in a "Main/Sub" contract hierarchy.
  - "Current" – the parameter is set for the current contract.
  - "Effective" – the parameter is set in the middle of the hierarchy. The parameter is set for a contract other than the top contract or billing contract.
- *Eff Location* – location in which the parameter value is stored. Possible values:
  - "Client" – the parameter value is set for a client.
  - "Contract" – the parameter value is set for a contract.
  - "Product" – the parameter value is set for a Product.
  - "FI" – the parameter value is set for a financial institution.

## Manually changing the value of a client/contract custom parameter

To edit a parameter, select it in the For Contract for <...>"/For Client for <...>" form (for ways of opening these forms, see the section "Current parameter values") and use the [Edit] button to open the "Contract Parameter – Set ..." form (see Fig. 37). In the *New Value* field set the parameter's value and click the [Proceed] button.


 If a custom parameter cannot be edited manually, the [Edit] button will not be shown in the interface. It is not possible to edit parameters with the "Calculation" role or parameters related to tariffs (these parameters might not be registered in the "Contract Parameters Setup" form but are present in the list of contract/client classifiers).

Fig. 37. "Contract Parameters – Set ..." form

**IMPORTANT!** When standard interfaces (including applications) are used to set custom parameters for a contract, the contract will not be approved automatically. Accordingly, if application of changed contract parameters requires the contract to be approved (for example, when the PARENT\_LIMIT\_PART parameter is set), this process must be run additionally for the contract.

## History of changes to a custom parameter

The history of custom parameters can be viewed in the "Contract Params" form, in "For Contract for <...>", "For Client for <...>" forms when clicking the [History] button. The "History for <>" form will open. See an example of this form in Fig. 38 showing the contract parameter history; the form with the client parameter history has the same fields.

Ways of opening the "Contract Params" form, "For Contract for <...>", "For Client for <...>" forms are listed in the section "Current parameter values".

Code	Contract	Value	Is Active	Local date from	Local date to	DB date from	DB date to	Prev Value	Officer	Ext Data
PRD_BSD CONTR_PRM_CURR100005011754470212			Active	01/10/09 00:00:00	01/01/00 00:00:00	01/10/09 00:00:00	01/01/00 00:00:00	1	SUPERUSER	PREV_DEF_VALUE_ID=147420

Fig. 38. "History for Contract Params for ..." form

The "History for..." form contains the following fields:

- *Code* – parameter code.
- *Contract* – number of the contract for which the parameter is set. The field is filled in for contract parameters. For client parameters, it is left empty.


This field shows the number of the contract that is specified in the *Effective Contract* field of the "For Contract for <...>"/"For Client for <...>" form (see the section "Manually changing the value of a client/contract custom parameter"). That is, the contract parameter's history is shown for the contract from the *Effective Contract* field.

- *Value* – parameter value.
- *Is Active* – parameter status. Possible values:
  - "Active" – the value is active for the contract. This value is used when the first historic record is created for parameters with the "Contract"/"Client"



value of the *Value Location* field and an empty *Mirror To* field (the classifier's current value is registered in this record).

- "Inactive" – the value is inactive. Set for a parameter value's historic record.
- "Reversed" – this value was reversed when correcting transactions in the Reversal Management module.
- "Waiting" – used for parameters with the "Classifier" value of the *Mirror To* field, if the value of the corresponding classifier is set for a future date.
- *Local\_date\_from* – banking date from which the parameter value is effective.
- *Local\_date\_to* – banking date on which the parameter value expires.
- *DB\_date\_from* – system date from which the parameter value is effective.
- *DB\_date\_to* – system date on which the parameter value expires
- *Prev Value* – parameter's previous value
- *Officer* – WAY 4 user who set the parameter value
- *Ext Data* – this field contains technical tags.

 For parameters with the "Calculation" value in the *Role* field, when a record is created in the "History..." form, in addition to registration of the parameter's value, additional information in the form of tags is additionally registered in the *Ext Data* field:


- AMOUNT=<amount> – corresponds to the <parameter code>\_AMOUNT tag stored in the contract
- CURR=<numeric currency code> – corresponds to the <parameter code>\_CURR tag stored in the contract
- DATE\_FROM=<date> – start date of the calculation period
- DATE\_TO=<date> – end date of the calculation period

For parameters with the "Calculation" role, a historic record is added at the end of the calculation period (i.e. at the end of the calendar month/quarter/year/billing cycle). A calculation period's start and end dates might not match *Local\_date\_from*. For more information, see the document "Calculated Contract Parameters". This functionality is provided according to an additional agreement with OpenWay.

For parameters with the "Classifier" value of the *Mirror To* or *Value Location* field, the "History for..." form shows the history of the corresponding classifier. The classifier's history can also be viewed by clicking the [History] button in the "Classifiers for..." form. See the section "Viewing Client and/or Contract Classifier Data".

For parameters with the "Tariff" value of the *Mirror To* or *Value Location* field, the "History for..." form shows the history of changes to the corresponding personal tariff. This history can also be viewed in the "Tariffs for..." form (Tariffs → Tariff for Contracts (Edit Personal)) → [Tariffs]) that contains a

contract's personal tariffs. To view the history, click the [Threshold] or [Technical] button to open the form with tariff numeric values. The button name depends on the tariff role. The form with tariff numeric values contains active and historic records. History can be traced using the Start Date field (Start Date is the date from which the tariff became effective; this field is filled in automatically when tariffs are approved). See the document "WAY4 Advanced Tariff Management".

 When a custom parameter is set or changed, personal tariffs related to this parameter are automatically created/changed.

### History of parameters with "Contract"/"Client" in the *Value Location* field and an empty *Mirror To* field

The history of custom parameters with "Contract"/"Client" in the *Value Location* field and an empty *Mirror To* field is logged in WAY4 starting from version 03.49.30.19. After installing this version, parameter change history will start to be logged after one of the following actions has been performed:

- After the contract parameter value has been changed.
- After the contract has been reapproved.
- After initialization of parameter change history. History for contracts is initialized after installation of version 03.49.30.19 if it is necessary to record the state of parameters and start logging their history from a certain date. For example, if a parameter can be used when correcting transactions with Reversal Management module tools.

After one of these actions has been performed, the first historic record is registered for the parameter (if the parameter is set for the contract/client). This is a technical record containing the parameter's current value for the contract. This record is registered with the current banking date and the current system date (regardless of the date the parameter was actually set for the contract) and with the "Active" value of the *Is Active* field. Note that for the first technical record, the *Prev Value* field is not filled in. I.e., even if a historic record is created when there is a change in a value that was already set, the parameter's previous value is not shown in the *Prev Value* field. The next time the parameter's value changes, a standard historic record will be created containing the parameter's new and previous value.

For contract parameters with the "Calculation" role, history is not initialized. For these parameters, a historic record is added at the end of the corresponding settlement period; that is, at the end of the calendar month/quarter/year/billing cycle. See the document "Calculated Contract Parameters". This feature is provided according to an additional agreement with OpenWay.

### Initializing history


The history of parameters with "Contract"/"Client" in the *Value Location* field and an empty *Mirror To* field is initialized with the following menu items:

- "Full → DB Administrator Utilities → Special Contract Utilities → Contract Parameters → Contract Parameters history initialization for Contracts" – initialize contract parameter history for contracts.

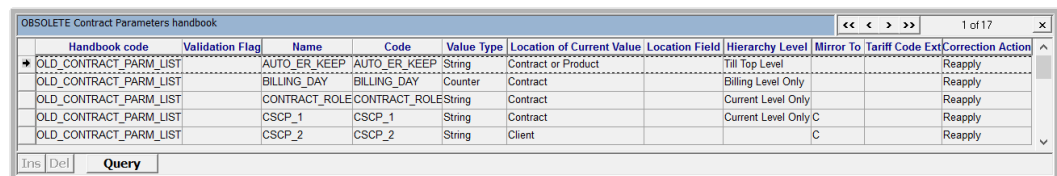
- "Full → DB Administrator Utilities → Special Contract Utilities → Contract Parameters → Contract Parameters history initialization for Clients" – initialize contract parameter history for clients.

Contract parameters for which history must be initialized should be marked with the TO\_INIT=Y; tag in the *Add Info* field of the "Contract Parameters Setup" form (Full → Configuration Setup → Common Handbooks → Contract Parameters Setup).

## "OBSOLETE Contract Parameters handbook" Form

 Starting from version 03.46.30, the "Contract Parameters Setup" form is based on the CONTR\_PARM table. In previous versions of WAY4, the form was based on data from the SY\_HANDBOOK table with the CONTRACT\_PARM\_LIST handbook code. When WAY4 is upgraded to version 03.46.30, the handbook is automatically migrated to the CONTR\_PARM table. During migration, data are moved to the CONTR\_PARM table and are also saved (duplicated) in the SY\_HANDBOOK table with the OLD\_CONTRACT\_PARM\_LIST handbook code (see Fig. 39). Data from the old handbook can be viewed in the "OBSOLETE Contract Parameters handbook" form.

The "OBSOLETE Contract Parameters handbook" form (Full → DB Administrator Utilities → Special OpenWay Utilities → Product Utilities → OBSOLETE Contract Parameters handbook) is used to view data from the old handbook and troubleshooting errors that occurred when loading data from earlier versions of WAY4 using the "Configuration Inspector" module or in other ways.



Handbook code	Validation Flag	Name	Code	Value Type	Location of Current Value	Location Field	Hierarchy Level	Mirror To	Tariff Code Ext	Correction Action
OLD_CONTRACT_PARM_LIST		AUTO_ER_KEEP	AUTO_ER_KEEP	String	Contract or Product		Till Top Level			Reapply
OLD_CONTRACT_PARM_LIST		BILLING_DAY	BILLING_DAY	Counter	Contract		Billing Level Only			Reapply
OLD_CONTRACT_PARM_LIST		CONTRACT_ROLE	CONTRACT_ROLE	String	Contract		Current Level Only			Reapply
OLD_CONTRACT_PARM_LIST		CSCP_1	CSCP_1	String	Contract		Current Level Only	C		Reapply
OLD_CONTRACT_PARM_LIST		CSCP_2	CSCP_2	String	Client			C		Reapply

Fig. 39. "OBSOLETE Contract Parameters handbook" form

If an old configuration is imported, data for contract parameters are loaded to the SY\_HANDBOOK table with the CONTRACT\_PARM\_LIST handbook code. It will not be possible to approve Products, Accounting Schemes, or Service Packages. In this case, the handbook's data should be manually moved in the "OBSOLETE Contract Parameters handbook" form.

- Filter data for the obsolete handbook with the CONTRACT\_PARM\_LIST code. Records corresponding to this handbook are highlighted in red.
- Click on the [Check] button to check.
- After checking, all handbook records that are duplicates of the new CONTR\_PARM handbook (if there are records in the CONTR\_PARM table) will be automatically moved to the OLD\_CONTRACT\_PARM\_LIST handbook.

- Records from the obsolete handbook that are not duplicates of the new handbook will be assigned the "New" value (new records that are not present in the CONTR\_PARM table) or "Different" value (records are present in the CONTR\_PARM table but there are differences in parameters of the record from the old and new handbook) in the *Validation Flag* field. For these records the [Messages] button will be available to view the latest messages on the results of the check.
- New records (with the "New" value) loaded into the old handbook can be added one-by-one to the new handbook, using the menu item "Add to new Contract Parameters Setup" from the [Actions] button. Then the check using the [Check] button must be repeated for the CONTR\_PARM handbook (i.e. in the "Contract Parameters Setup form).
- For records with the "Different" value, all necessary changes must be manually made to the new handbook. Then, to move duplicates to the historic handbook, the [Check] button should be used to repeat the check in the "OBSOLETE Contract Parameters handbook" form.

When not all parameters of a record from the old handbook must be moved to the new one, after the check, the [Messages] button can be used in error messages to see which parameters for this record differ. If data on discrepancies is expected, a record with the CONTRACT\_PARM\_LIST code must be forcibly moved to history, regardless of the discrepancies. The "Remove" context menu command of the [Actions] button is used to do so.