Operation Manual

Calculated Contract Parameters

03.49.30

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Contents

Introduction

This section document describes how WAY4 system calculated contract parameters are configured.

This document is intended for bank or processing centre employees responsible for configuring WAY4.

While working with this document, it is recommended that users refer to the following reference material from OpenWay's documentation series:

- WAY4 Client and Contract Classifiers
- WAY4 Service Packages
- WAY4Accounting Schemes
- Products and Contract Subtypes
- Standing Payment Orders
- WAY4 Global Parameters
- Issuing Module
- Acquiring Module
- Documents
- WAY4™ Advanced Tariff Management

The following notation is used in this document:

- Field labels in screen forms are shown in *italics*.
- Button labels used in screen forms are placed in square brackets, such as [Approve].
- Menu selection sequences are shown with the use of arrows, such as 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. Overview

Calculated contract parameters are based on contract balance types and make it possible to do the following:

- Calculate a fee based on a balance (minimum, maximum, average) for a specific period.
- Use a balance value (minimum, maximum, average) to determine threshold values for tariffs with the "Service Limit" role.

Calculated parameters are based on account balance types (mapped with the USAGE=BALANCE tag) that are recorded in the main contract. A balance type must also be mapped with the BY_CURR tag. When configuring a calculated parameter based on a balance type, this balance type must also be mapped with the corresponding Account Scheme accounts.

Parameters are calculated according to specific rules with a defined frequency. Rules and frequency are set in a Product.

Chapter 2. Registering calculated parameters

Register a calculated parameter in the "Contract Parameter Setup" form (Full → Configuration Setup → Common Handbooks → Contract Parameters Setup), see Fig. 1.

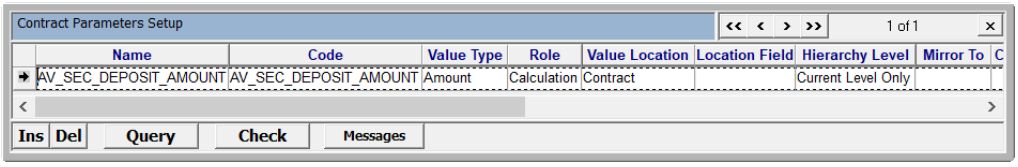

Fig. 1. "Contract Parameters Setup" form

Fill in the fields for the calculated parameter as follows:

- *Value Type* – "Amount".
- *Role* – "Calculation".
- *Value Location* – "Contract".
- *Mirror To* – this field should be left empty.
- *Hierarchy Level* – "Current Level Only" or "Top Only".

  When "Top Only" is specified, the balance type that is used to calculate the parameter must also have "Top Only" in the *Main Only* field. Rules for calculating this parameter are set for the Product that corresponds to the top contract. A request for this parameter's value can be made at any level down the hierarchy but the value will be calculated for the top contract.

Chapter 3. Configuring rules for calculating parameters

To configure rules for calculating parameters and the frequency with which parameters are calculated, do as follows:

- Calculated parameters that must be configured for a Product should be listed, separated by commas, as the value of the CONTRACT_PARMS=<>; tag in the *Custom Data* field of a Product (in the "Products" form, "Full → Configuration Setup → Products → Product Definition → Products").
- After the CONTRACT_PARMS=<>; tag has been set, the [Parm Rules] button will appear in the "Products" form, see Fig. 2.

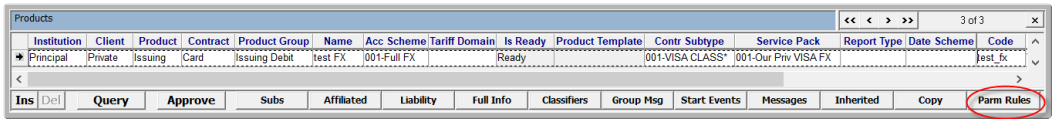

Fig. 2. "Products" form

- Click the [Parm Rules] button to open a form for configuring rules and the frequency for calculating parameters, see Fig. 3.

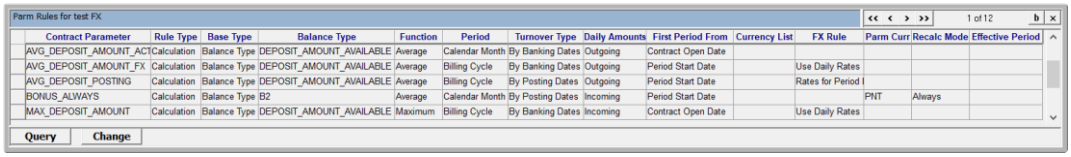

Fig. 3. "Parm Rules" form

To enter/change rules and the frequency for calculating a parameter, select the required record and click the [Change] button. The "Change Balance Type Calculation" form will open.

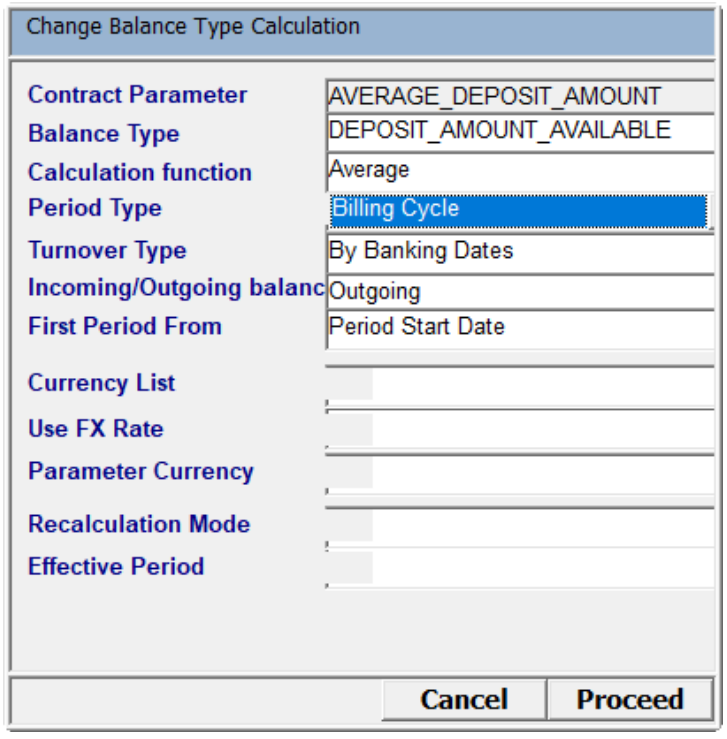

Fig. 4. "Change Balance Type Calculation" form

The form contains the following fields:

- *Contract Parameter* – calculated parameter's code. This is a unique arbitrary code. The field is read-only. The parameter code is specified in the first step of setup, in the CONTRACT_PARMS=<>; tag in the Product's *Custom Data* field.
- *Balance Type* – code of the balance type that is configured for the Account Scheme and that records account balances (these balance types have "None" in the *Direction* field). See the section "Registering Balance Types" of the document "Balance Types".
- *Calculation Function* – calculation type. Possible values:
  - "Average" – average value of the balance for a period
  - "Minimum" – minimum value of the balance for a period
  - "Maximum" – minimum value of the balance for a period
  - "Turnover" – balance type turnover for a period
- *Period Type* – calculation period:
  - "Calendar Month"
  - "Calendar Quarter"
  - "Calendar Year"
  - "Billing Cycle"
- *Turnover Type* – indicates how turnover is calculated:
  - "By Banking Dates" – balances and turnover are calculated by transaction banking date (Local Date)
  - "By Posting Dates" – balances and turnover are calculated by transaction Posting Date
- *Incoming/Outgoing Balance* – calculation for incoming/outgoing balances per day. Possible values:
  - "Incoming" – calculate for incoming balances.
  - "Outgoing" – calculate for outgoing balances.
- *First Period From* – start date of the first calculation period. Possible values:
  - "Period Start Date" – if the start of this period is earlier than the contract's opening date, the full period (month/quarter/billing cycle) will be used for calculation. Balances/turnover for previous days will be considered null. I.e. the date of the first calculation period is always the actual date on which this period started (first date of the calendar month for the "Calendar Month" value, last_billing_date for the "Billing Cycle" value), even if the contract's opening date is after the start of the first period.
  - "Contract Open Date" – if the first day of the specified period (month, quarter) or start of the billing cycle is earlier than the contract's opening date, the contract's opening date (Date Open) will be used as the period's start date.
- *Currency List* – list of currencies that can be used in calculation (digital codes of currencies separated by commas; for example, "840,978"). By default, the field is not filled in and all currencies are used. For multicurrency balances that

are split using the BY_CURR tag, a specific currency can be set, or a list of codes that are separated by commas. For example, if in an Accounting Scheme accounts in six currencies are mapped with a balance type but only balances in accounts in the local currency are required to calculate a specific parameter, specify the account of the local currency in this field.

- *Use FX Rate* – an FX rule is set in this field. I.e. the rate that should be used when calculating daily turnover if a balance is split by currency. Possible values:
  - "Rates For Period End Date" (or if the field is empty) – to convert daily turnover, the rate at the end of the calculation period is used (FX Middle).
  - "Daily Rates" – daily rates are used. They can only be used for balances that are split by currency.
- *Parameter Currency* – currency in which the parameter is calculated. The field is filled in if the parameter's currency differs from the contract's currency.
- *Recalculation Mode* – the mode for calculating the parameter:
  - If the field is not filled in, this is a stored parameter. The parameter is calculated once after the calculation period ends and is not recalculated (except when transactions are corrected with the Reversal Management module). I.e. when a request for a parameter value is made in a calculation period that has not ended, information for the previous completed period will be used. For example, a reduced fee can be set up in the current period if the account's maximum balance was over a certain amount in the past period.

    Data for this parameter can be viewed for a contract. For these parameters, recalculation is possible when transactions are corrected with the Reversal Management module.
  - When the value in this field is "Always", a parameter can be calculated and recalculated when a request to calculate it is received. The parameter value can be calculated for a period that has not ended yet (if the request to calculate it is received, for example, in the middle of the month/quarter/year) or for a period that is already closed (see the description of the *Effective Period* field). The value of this parameter changes after each transaction in the period that is being calculated. I.e. it is assumed that the parameter will be recalculated multiple times and that it depends on transactions, including for the current period being calculated.

    Calculated information about these parameters is not stored for a contract, and these parameters are used when correcting transactions using the Reversal Management module.

  ⚠ "Always" can be set in the *Recalculation Mode* field only for parameters with the values "Calendar Month", "Calendar Quarter", or "Calendar Year" in the *Period Type* field.
- *Effective Period* – this field makes it possible to redefine the period for calculating the parameter, based on a date from a document. It is used with the "Always" value of the *Recalculation Mode* field. Possible values:
  - "By Local Date" – by a document's Local Date
  - "By Posting Date" – by a document's Posting Date

- "By Trans Date" – by a document's Transaction Date

  The parameter works as follows:

  For example, a calculated parameter with "Always" is used in a custom fee's setup and the *Effective Period* is filled in. The period (month, quarter, year, depending on *Period Type* field settings) that includes this date from the document is determined. The parameter is recalculated for this period (even if the period is already closed).

If changes in the "Change Balance Type Calculation" form don't have to be saved, click the [Cancel] button. In this case, WAY4 does not save any changes in the Product and the value of the *Is Ready* field does not change (i.e. if the Product was approved before changes were made to calculated parameters, the value of the *Is Ready* field remains "Ready").

Click the [Proceed] button to check the values that were entered:

- A check is made of whether the "Contract Parameters Setup" form contains this parameter.
- A check is made of whether this balance type is present in the Product's account templates.
- When a list of currencies is specified, a check is made of whether there are account templates in currencies that are mapped with this balance type.

In the event of errors, changes will not be saved, and an error message will be displayed.

If the check is successful, the values of rules are updated in the "Calculated Contract Parameters" form, all changes are saved to the Product's *Custom Parms* field as tags, and "Not Ready" will be set in the Product's *Is Ready* field. After rules for calculating parameters have been changed, it is necessary to approve the Product.

Chapter 4. Calculating a parameter

A stored parameter (see the description of the *Recalculation Mode* field in the section "Configuring rules for calculating parameters") is calculated for each settlement period; that is, for a calendar month/quarter/year/billing cycle (see the description of the *Period Type* field in the section "Configuring rules for calculating parameters").

A request to calculate the parameter is made at the end of a period, for example, when charging a fee based on a balance (i.e. using the calculated parameter).

This value is saved for a contract and will not change for the past period. At the end of the next settlement period, the old value will be replaced with the new one (when the next request is made for the parameter's value).

After calculating the parameter, the latest value is registered in the contract's ext_data field using the following tags:

- <parameter code>_AMOUNT; – amount
- <parameter code>_CURR; – currency
- <parameter code>_DATE; – end date of the last calculation period. I.e. for months, this is the last day of the month, for quarters, the last day of the quarter, etc.

A parameter is calculated on the basis of daily balance turnover. I.e. to calculate a parameter for a contract's balance, the mode for calculating daily turnover must be enabled. This can be done in one of the following ways:

- Daily turnover is recorded automatically from the time the contract is mapped with a calculated parameter. If mapping is performed in the middle of a calculation period, turnover from the start date of the period to the mapping date is considered to be null. At the end of the calculation period, the parameter will be calculated according to turnover during the period. No additional actions are required (except application of a Product's changes to contracts in the standard way or approval of a contract for a Product after rules for calculating the Product's parameter have been configured).

  For simple contract hierarchies, mapping is sufficient for parameters to be calculated correctly, starting from the first calculation period and thereafter.

- If turnover has to be calculated for a past period or if there were changes in complex contract hierarchies (in particular, in Liability hierarchies), calculated parameters should be mapped in advanced mode:

  - When a new parameter is added to a Product to calculate turnover for a past period for all the Product's contracts, use the menu item "Full → DB Administrator Utilities → Special Contract Utilities → Recalc Balances for Contracts → [Actions] → "Balance Turnover Initialization for Product" (see the section "Calculating a balance's daily turnover in a past period for a Product").

  - When a new parameter is added to a Product to calculate turnover for a past period for a specific contract, use the menu item – see the section

"Calculating/recalculating a contract's daily balance turnover for a past period"

- If the contract hierarchy has changed, used the menu item "Full → DB Administrator Utilities → Special Contract Utilities → Recalc Balances for Contracts → [Actions] → "Balance Turnover Initialization for Contract".

  In this case contract balances must be recalculated before mapping. For more information, see the section "Changing the hierarchy of contracts mapped with calculated parameters".

When calculating a parameter, if there was no turnover on the balance during the period, the balance type's current value is used as the parameter's value.

The history of financial activity for a balance type corresponding to a stored calculated parameter can be viewed in Customer Service Workbench (see the section "Viewing history for balance types that are used to calculate parameters").

Chapter 5. Calculating a balance's daily turnover in a past period for a Product

When a new calculated parameter (balance type) is added to a Product, it may be necessary to use this parameter for past periods. For example, if the parameter was added earlier, but for some reason the Product wasn't approved. When a calculated parameter is applied to past periods, daily turnover is calculated for the corresponding balance type.

To do so, in the "Recalc Balances for Contracts" (Full → DB Administrator Utilities → Special Contract Utilities → Recalc Balances for Contracts) form, select the record for the contract that has a Product with a new parameter, click the [Actions] button and run the menu item "Balance Turnover Initialization for Product". The "Balance Turnover Initialization" form will open, see Fig. 5.

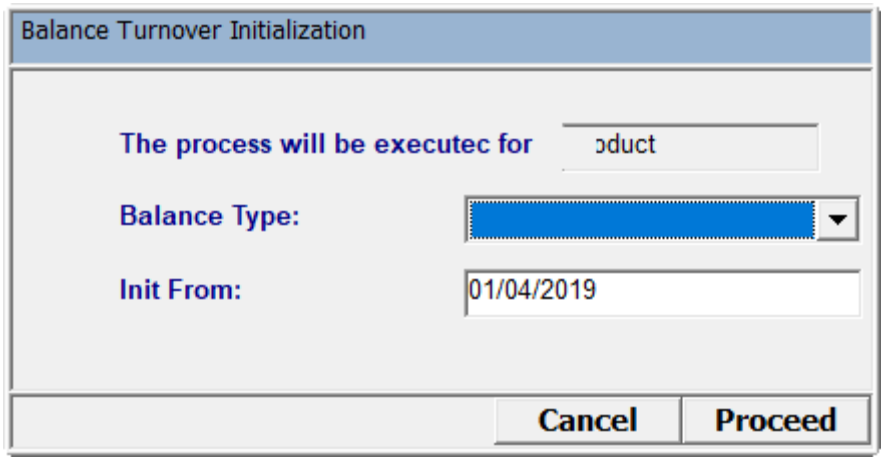

Fig. 5. "Balance Turnover Initialization" form

In the "Balance Turnover Initialization" form, select a balance type from the *Balance Type* field, in the *Init From* field specify the date from which daily turnover must be calculated and click the [Proceed] button.

Daily turnover will be calculated for a past period (periods) for all this Product's contracts for the corresponding balance type.

Stored parameters can be calculated for past periods – these are parameters with an empty *Effective Period* field (see the section "Configuring rules for calculating parameters").

Chapter 6. Calculating/recalculating a contract's daily balance turnover for a past period

It may be necessary to calculate/recalculate daily balance turnover for a specific contract in the following cases:

- If the hierarchy of contracts mapped with calculated parameters changes, where the balances of higher-ranked contract depend on the balances of subordinate contracts. For example, when a contract is moved to a "Liability" hierarchy (see the example in the section "Calculating a parameter") and it is necessary to record turnover of the new subordinate contract in the turnover of the higher-ranking Liability contract for a past period.
- If it is necessary to use a Product's new calculated parameter (i.e. to calculate daily turnover) for a specific contract only, for a past period.

To do so, in the "Recalc Balances for Contracts" form (Full → DB Administrator Utilities → Special Contract Utilities → Recalc Balances for Contracts), select the record for the contract that is higher ranked in relation to the new Liability contract, click the [Actions] button and run the menu item "Balance Turnover Initialization for Contract". The "Balance Turnover Initialization for Contract" form will open, see Fig. 6.

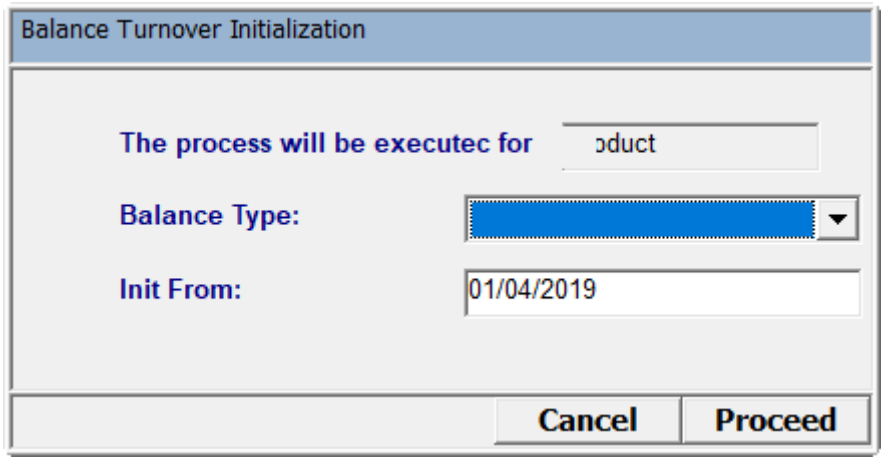

Fig. 6. "Balance Turnover Initialization" form

In the "Balance Turnover Initialization" form select the appropriate balance type from the list in the *Balance Type* field, in the *Init From* field specify the date from which daily balances must be calculated and click the [Proceed] button.

Daily turnover for this contract will be calculated for the past period (periods) based on turnover for the specified period according to the appropriate balance type.

Stored parameters can be calculated for past periods – these are parameters with an empty *Effective Period* field (see the section "Configuring rules for calculating parameters").

Chapter 7. Changing the hierarchy of contracts mapped with calculated parameters

When complex hierarchies of contracts (in particular, Liability hierarchies) mapped with calculated parameters change, a number of actions must be performed to consider the changes in the hierarchy and correctly calculate parameters.

An example of such a change is when an existing contract is moved to a Liability hierarchy with the "Full Liability" or "Only Check Balance" category, where the balance of the higher-ranking contract depends on the balances of subordinate contracts (i.e. when a subordinate contract is added to a Liability hierarchy).

If a hierarchy has changed, it is necessary to do as follows:

- Recalculate balances for the contract that is higher-ranking in relation to the Liability contract that was added (see the section "Recalculating Balance Type Values" of the document "Balance Types"). I.e. it is necessary to include the balance of the new subordinate contract in the balance of the higher-ranking contract.

  ⚠ In a number of cases, it may be necessary to analyse the order in which the balances of different contracts must be recalculated. It also may be necessary to recalculate balances in the hierarchy from which the contract was moved. To correctly recalculate balances in complex hierarchies, contact OpenWay.

- Synchronise calculated parameters in the hierarchy and enable the mode to recalculate daily turnover for the corresponding balance types in the "Recalc Balances for Contracts" form (Full → DB Administrator Utilities → Special Contract Utilities → Recalc Balances for Contracts) using the menu item "Balance Turnover Initialization for Product". See the section "Calculating/recalculating a contract's daily balance turnover for a past period".

  - Calculated parameters are inherited from the higher-ranking contract to subordinate contracts for the entire subordinate Liability hierarchy. For example, if the Product of the top Liability contract is mapped with balance types (parameters) B1, B2, and the Product of a subordinate Liability contract is mapped with balance types B3, B4, the subordinate contract will be mapped with balance types B1, B2, B3 and B4.

  - From the time of mapping, daily turnover will be recorded for the corresponding balance types in the subordinate contract (from the date of mapping), that will automatically be considered when calculating the calculated parameter for the higher-ranking contract at the end of the calculation period.

  - If daily turnover for a subordinate contract must be calculated for a past period, when running the menu item "Balance Turnover Initialization for Product" specify the start date of turnover calculation.

  - When a new subordinate Liability contract has the same calculated parameter as in the higher-ranking contract, with daily turnover that has already been calculated for the period, when the menu item "Balance Turnover Initialization for Product" is run, daily turnover will be recalculated for the

higher-ranking Liability contract (i.e. the subordinate contract's daily turnover is recorded in the daily turnover of the higher-ranking Liability contract).

To record a subordinate contract's turnover in the turnover of a higher-ranking contract in a "Liability" hierarchy, the balance type must not have "Yes" in the *Skip Liab* field.

Chapter 8. Viewing history for balance types that are used to calculate parameters

Information about financial activity for accounts with the balance type used when calculating a parameter is viewed in the balance history form in Customer Service (Customer Service → Customer Service → [Financials] → [Balance List] → [History] → [Trn by Posting]/[Trn by Banking]), see Fig. 7.

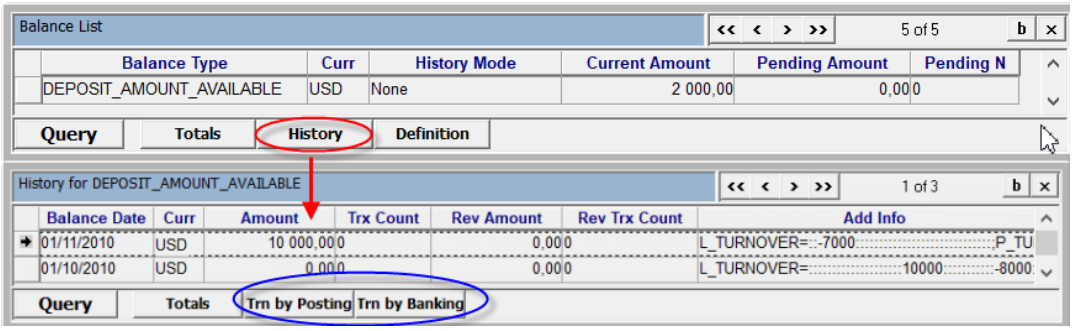

Fig. 7. "History for <balance>" form

For balance types that are used to calculate parameters, the "History for <balance type>" form contains the [Trn by Posting] and [Trn by Banking] buttons. These buttons can be used to view the history of the selected balance type's financial activity per day:

- [Trn by Posting] – daily fund activity by document/transaction Posting Date
- [Trn by Banking] – daily fund activity by document/transaction Local Date

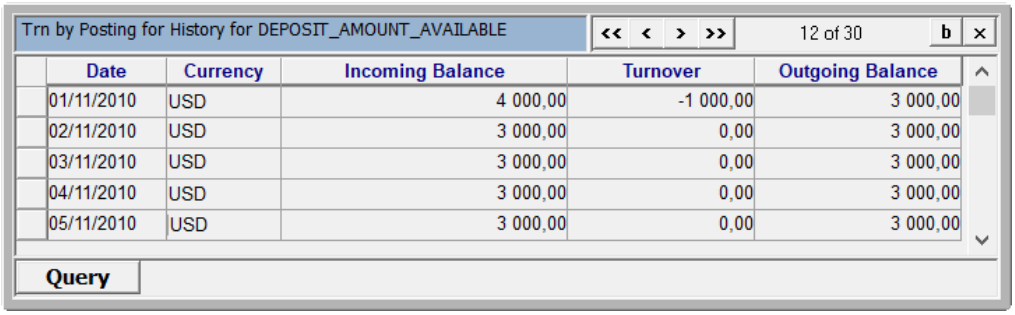

Fig. 8. "Trn by Posting" form

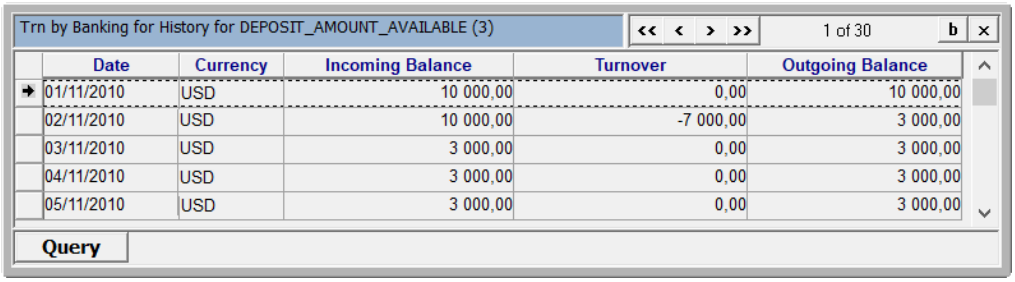

Fig. 9. "Trn by Banking" form

Chapter 9. Example of setup

Sample setup for a custom fee depending on a specific balance type – i.e. depending on the value of a calculated parameter.

- The balance type DEPOSIT_AMOUNT_AVAILABLE is registered in WAY4, see Fig. 10. Parameters can be calculated based on this balance type. The corresponding contract account/accounts are mapped with this balance type.

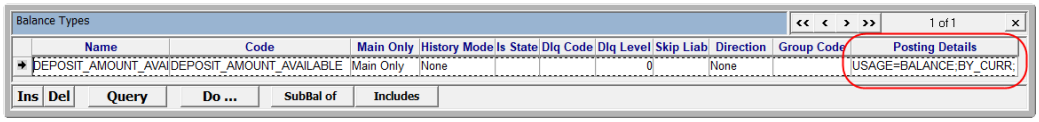

Fig. 10. "Balance Type" form

- The following calculated parameters are registered in WAY4, see Fig. 11.

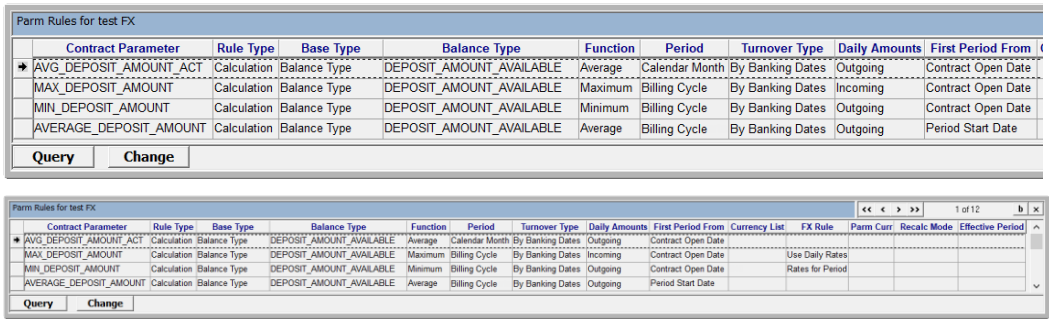

Fig. 11. "Parm Rules" form

- For the main Service for which custom fees are configured using calculated parameters, the tag DOC_TAG-CALC_PARM; is set, see Fig. 12.

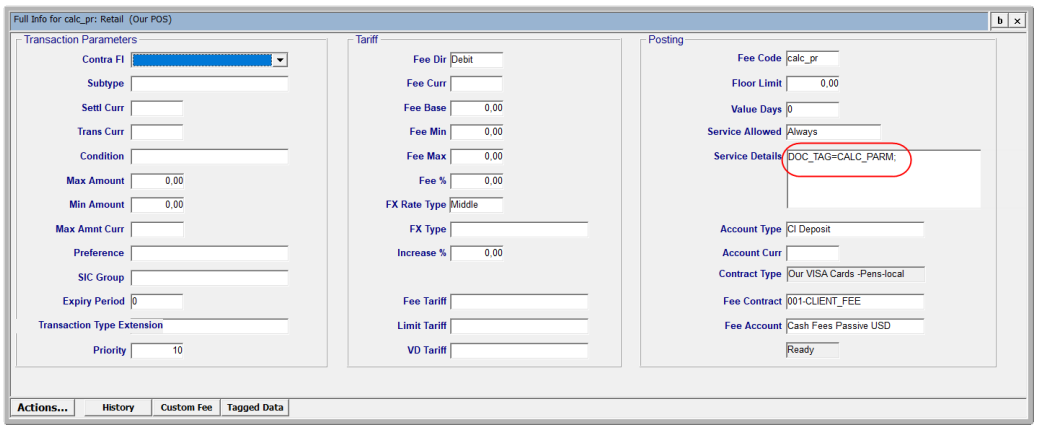

Fig. 12. Main Service's form

- For the custom fee's Service, the tags FEE_BASE=CONTRACT_PARM;FEE_BASE_TAG=<code of the calculated parameter> are set. In the example in Fig. 13, several fees are configured that depend on the minimum/maximum/average balance for a reporting period/month. A fee is charged as a percentage of the parameter's calculated value.

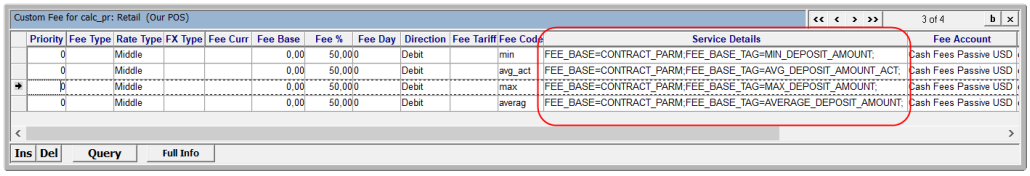

Fig. 13. "Custom Fee" form

- The document for which a fee should be calculated using calculated parameters must contain the CALC_PARM; tag, see Fig. 14.

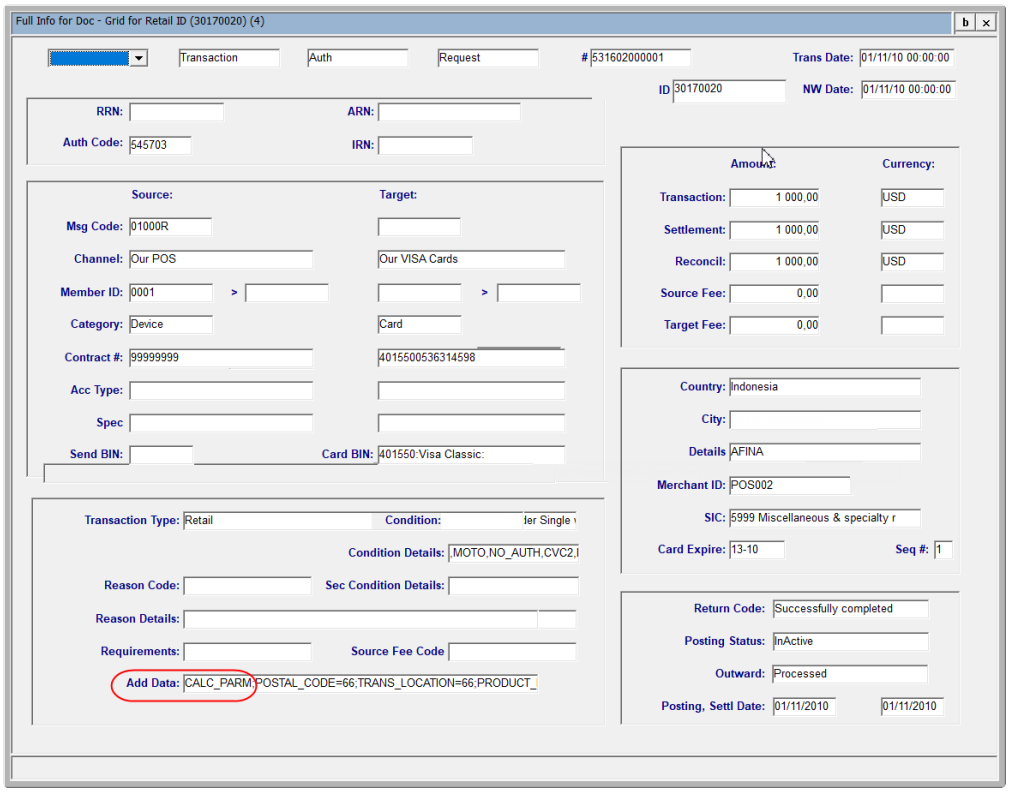

Fig. 14. Form with full information about a document

- When processing this document by the Service for which custom fees are set with the tags FEE_BASE=CONTRACT_PARM;FEE_BASE_TAG=<code of the calculated parameter>, a search is made for the value of the calculated parameter.
- The fee is charged based on the calculated parameter's value, see Fig. 15.

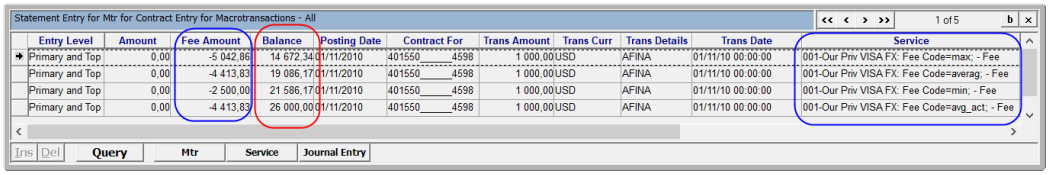

Fig. 15. "Statement Entry" form