OPENWAY

Operation Manual

Mastercard Interchange Interface

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OPENWAY

Contents

One of the most important Way4™ functions is interchange with payment systems necessary for performing settlement between issuers and acquirers and providing and receiving additional information.

This document gives an overview of interchange between Way4 and Mastercard and describes rules for working with the Mastercard interface.

This document is intended for Way4 users, bank or processing centre employees responsible for interchange with payment systems.

While working with this document, it is recommended to use the following reference material from the OpenWay documentation series:

- "Documents"
- "SAFE Support"
- "DB Manager Manual"
- "Interchange Routing"
- "Daily Procedures"
- "Way4™ Dispute Management"
- "Way4™ Stop Lists"

The following conventions are used throughout this document:

- Field labels in screen forms are shown in *italics*.
- Button labels in screen forms are enclosed in square brackets, such as [Approve].
- User menu item selection sequences are shown using arrows, as follows: "Issuing →Contracts Input & Update".
- System menu item selection sequences are shown using another kind of arrow, as in: "Database => Change password".
- Key combinations used while working with DB Manager are shown in angular brackets, such as <Ctrl>+<F3>.
- The names of directories, files and file paths that vary for each local computer are enclosed in angular brackets; for example, <OWS_HOME>.

⚠ Warnings about potentially hazardous situations or actions.

ⓘ Information about important features, additional options or the best use of certain system functions.

1 Interchange between Way4 and Mastercard

Interchange between Way4 and Mastercard occurs:

- Through special-format files containing data on bankcard transactions, interbank settlements, additional information, information on suspicious transactions, etc.

- Through online messages containing data on authorisations and cards added to payment system exception and stop lists.

Various types of information are exchanged on specialized payment system channels.

(i) This document describes interchange with the Mastercard payment system in file exchange mode.

1.1 Mastercard Interchange Interface Functionality

Way4 exchanges information with the Mastercard payment system through the Mastercard Interchange interface (Mastercard interface).

The interchange interface is used to (see Fig. 1):

- Exchange information on executed transactions:

  ▪ Exchange clearing information (outgoing and incoming presentments).

  ▪ Exchange information on dispute transactions arising when resolving disputes between payment system members.

  ▪ Receive settlement information from the payment system.

  ▪ Exchange information on interbank transactions.

- Receive additional information from the payment system, for example, BIN tables, stop lists, currency dictionary, merchant category dictionary (SIC codes), etc.

- Exchange information with fraud prevention services and systems; for example, provide and receive information on merchants, suspicious transactions, etc.

- Prepare reports: both statistics that are regularly provided to payment systems and reports used inside a financial institution for reconciliation.
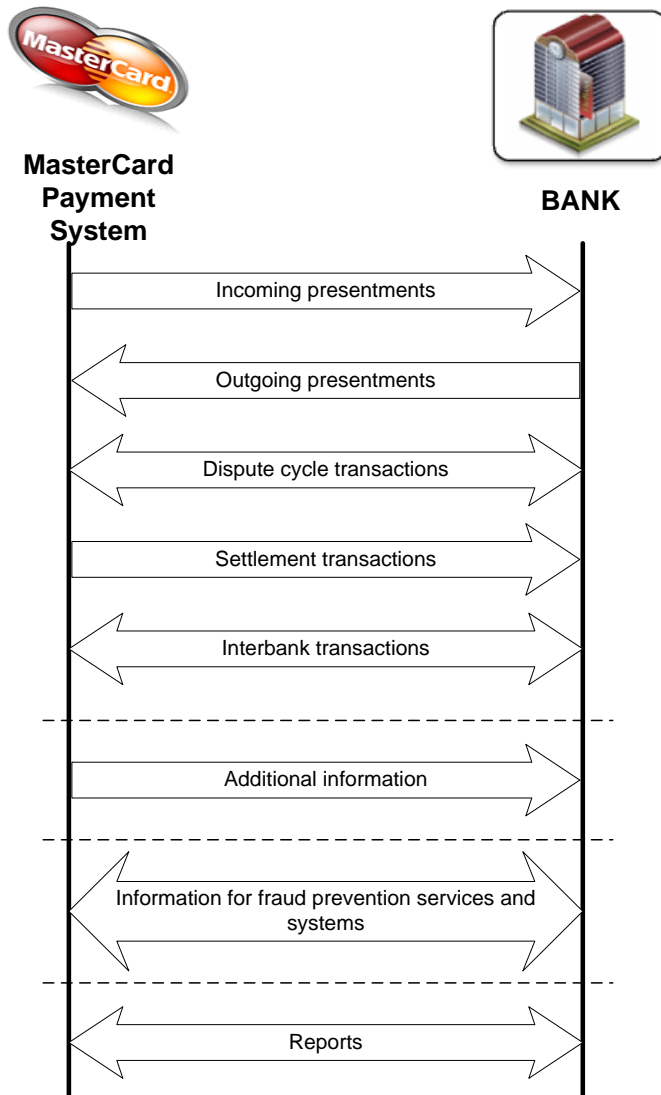
Fig. 1. Mastercard interface functionality

1.2 Principles of Transaction Information Exchange with Mastercard

Way4 exchanges files with Mastercard through the Inward Processing and Outward Processing procedures.

1.2.1 Support of Mastercard release requirements

Twice a year, in April and October, Mastercard's new transaction processing requirements come into effect.

Mastercard's corresponding release documents notify member banks about changes in requirements.

These requirements are supported in Way4 by the corresponding changes in procedures, import/export pipes, etc. For more information, see the section

"Support of payment system release requirements" of the document "Interchange Routing".

1.2.2 Importing Transaction Information into Way4

Data imported to Way4 are physical files whose format is regulated by the payment system. For each imported file, a record is created in the FILE_INFO table. A physical file contains one or more logical files. Logical files are located in a physical file between its header and trailer.

A logical file contains information grouped in messages (message batches), each of which takes up one or several lines of the logical file. Logical file messages may contain information on financial transactions (presentments, chargebacks, etc.), non-financial operations (for example, retrieval requests), settlement information, service information (the file header and trailer or message batch) and other information.

For each message, including headers and trailers, a record in the ORIGINAL_DOC table is generated. In these records, all message fields are stored in a special packed format. If required, these records can be unpacked and used for detailed manual analysis.

According to their type, messages can generate records in the DOC (documents) and ADDENDUM_DOC (additional document parameters) tables, as well as records with additional information in the corresponding service tables (see Fig. 2).
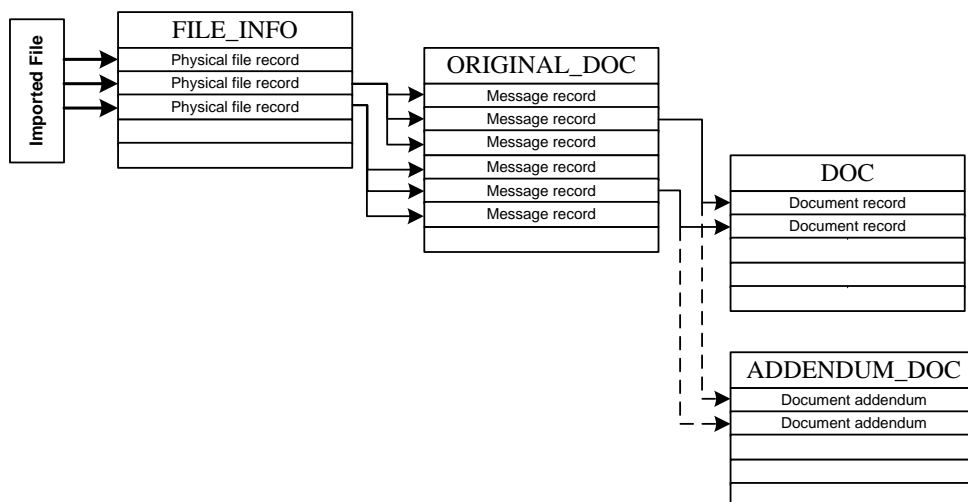

Fig. 2. Importing transaction information into Way4

1.2.3 Exporting Transaction Information to Mastercard

During data export, Way4 processes documents that have been assigned the "To be Sent" status during document processing. The creation of an export file also

generates records in the FILE_INFO table for the file to be exported (physical), and for logical files included in it.

In the current version, a file to be exported contains only one logical file.

During export, records in the ORIGINAL_DOC table are generated for all the messages in a logical file.

2 Mastercard Interface Description

2.1 Description of Mastercard Formats and Services

Mastercard provides interchange interfaces for transaction information exchange through the GCMS (Global Clearing Management System) in IPM (Integrated Product Messages) format.

2.2 Mastercard File Types

Table 1. Mastercard file types

File name	Production database file type / test file type	Encoding	Menu item for import / export
IPM Mastercard Generated File	T112 / T120	EBCDIC (layout 1014)	MasterCard → MC.Daily Procedures → MC.Inward Processing → IPM Inward Processing
IPM Customer Generated File	R111 / R119	EBCDIC (layout 1014)	MasterCard → MC.Daily Procedures → MC.Outward Processing → IPM Outward Processing
Early Reconciliation File	T113 / T121	EBCDIC (layout 1014)	MasterCard → MC.Daily Procedures → MC.Inward Processing → IPM Inward Processing
IPM MPE Daily Update File	T067 / T167	ASCII	MasterCard → MC.Daily Procedures → MC.Load BIN Table and Handbooks →Load MPE Daily Files
IPM MPE Full File Replacement	T068 / T168	ASCII	MasterCard → MC.Daily Procedures → MC.Load BIN Table and Handbooks → MC. Full Replacement → Load MPE Replacement Files

File name	Production database file type / test file type	Encoding	Menu item for import / export
Currency Rate File	T057 / T058	ASCII	MasterCard → MC.Daily Procedures → MC.Load BIN Table and Handbooks → Load MC Rates
SAFE Transactions	R847 / R877	ASCII	MasterCard → MC.Daily Procedures → MC.Outward Processing → SAFE Outward Processing
SAFE Confirmation Data	T848 / T878	ASCII	MasterCard → MC.Daily Procedures → MC.Inward Processing → SAFE Inward Processing
SAFE Transactions Data - Monthly	T849 / N/A	ASCII	MasterCard → MC.Daily Procedures → MC.Inward Processing → SAFE Inward Processing
Electronic Warning Bulletin File	T314, T316 / N/A	ASCII	MasterCard → MC.Daily Procedures → MC. Load Stop List → Load MC Stop List

⚠ Note that when Russian rubles with the code 810, corresponding to the Russian ruble before devaluation in 1998 are used by banks and processing centres in settlements, additional settings must be made before importing/exporting data. To do so, it is recommended to use the technology described in the section "Redefining Currency Parameters" of the document "Currency Conversion". This issue can also be addressed using the following parameters for import/export pipes:

- CHANGE_CURR_OUT=810643" for export pipes. In this case, in all exported documents, the currency code will be changed from "810" to "643".

- "CHANGE_CURR_IN=643810" for import pipes. In this case, in all documents imported from the payment system, the currency code will be changed from "643" to "810".

These pipe parameters have a higher priority than the recommended settings described in the section "Redefining Currency Parameters" of the document "Currency Conversion".

If settings for redefining currencies have not been made, exported and imported files will be processed incorrectly.

3 Processing Incoming Transactions and Exporting Outgoing Transactions

This chapter provides basic rules for processing incoming transactions and exporting outgoing transactions when working with Mastercard.

3.1 Processing Incoming Transactions

ⓘ Processing of incoming transactions is included in daily procedures.

In processing incoming Mastercard transactions, the following procedures accessed from the "MasterCard →MC.Daily Procedures →MC.Inward Processing" user menu folder are executed:

- "IPM Inward Processing" menu item – processing incoming Mastercard clearing files. These files contain clearing and settlement information, as well as information about interbank documents.

  Before executing this menu item, the file received from Mastercard with the name mask "IPM*.i*" must be copied to the "<OWS_WORK>\Data\Interchange\IPM_Inc" directory.

  Executing this menu item opens the "Open IPM Incoming File" window, in which users should select files for import.

  In executing this menu item, write-off amounts for incoming clearing messages are calculated (Accept Clearing). This procedure allows clearing documents received from payment system incoming files to be processed separately from the general document processing procedure (see the section "Posting Documents and Solving Typical Problems" of the document "Documents").

- "SAFE Inward Processing" menu item – processing incoming SAFE files (see the section "Processing Information from Fraud Prevention Systems and Services").

  Before executing this menu item, the file received from SAFE with the name mask "safe????.i??" must be copied to the "<OWS_WORK>\Data\Interchange\SAFE_Inc" directory.

  Executing this menu item opens the "Load Files" window. In the window, select the files to be imported.

3.2 Exporting Outgoing Transactions

(i)   Export of outgoing transactions is included in daily procedures.

In exporting outgoing transactions to Mastercard, the following procedures accessed from the "MasterCard →MC.Daily Procedures →MC.Outward Processing" user menu folder are executed:

- "IPM Outward Processing" menu item – preparing outgoing clearing files for Mastercard. These files are generated from documents on transactions executed on the bank's own devices or on those of affiliated banks with cards of other payment system members, and from dispute and interbank documents.

  The system puts exported files in the "<OWS_WORK>\Data\Interchange\IPM_Out" directory.

- "IPM IntraProcessor Transactions Export" menu item – preparing information on transactions executed with "our own" cards on "our own" devices.

  The system puts exported files in the "<OWS_WORK>\Data\Interchange\IPM_Out" directory.

- "SAFE Outward Processing" menu item – preparing outgoing SAFE documents (for more information, see the section "General SAFE Principles" of the document "SAFE Support").

  The system puts exported files in the "<OWS_WORK>\Data\Interchange\SAFE_Out" directory.

- "Generate SAFE Negative Responses" menu item – preparing outgoing files informing that no messages on fraudulent operations have been received from the bank's customers for a calendar month "Creating a Fraud Negative Report" of the document "SAFE Support").

  The system puts exported files in the "<OWS_WORK>\Data\Interchange\SAFE_Out" directory.

3.3 Monitoring Imported and Exported Files

Items from the menu folder "MasterCard →MC.File Management" are used to monitor imported and exported Mastercard files (see Fig. 3).
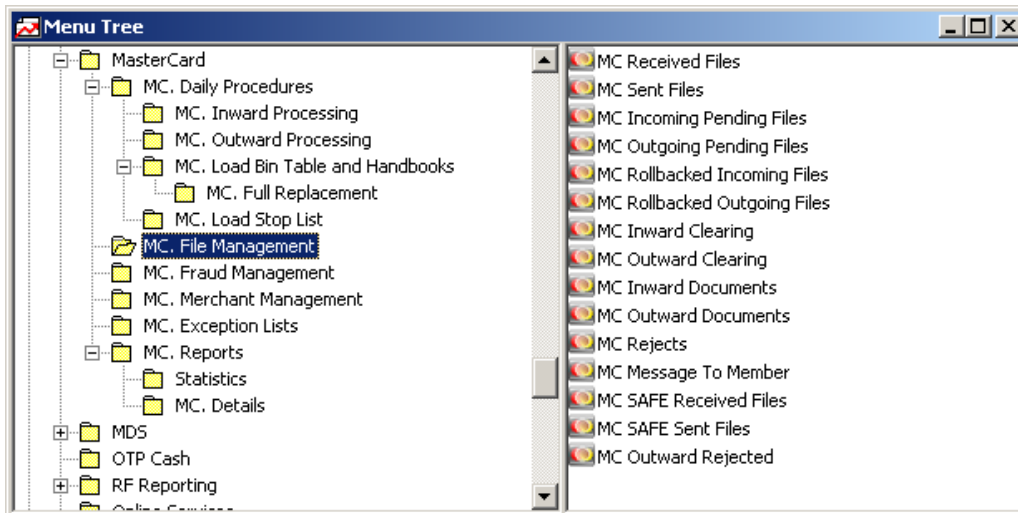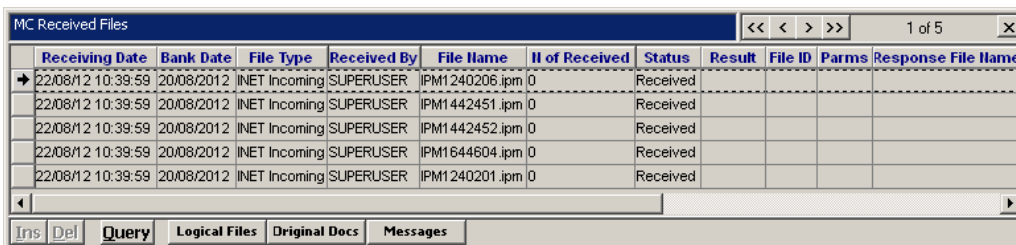
Fig. 3. User menu folder for monitoring imported and exported Mastercard files

3.3.1 Imported Files

Imported files are monitored using the "MC Received Files" form (see Fig. 4), opened by selecting the menu item "MasterCard →MC.File Management →MC Received Files".

Data from FILE_INFO table of the database is used in this form (see the section "**Error! Reference source not found.**).

Fig. 4. List of files imported from the payment system

This form contains the following fields:

- *Receiving Date* – calendar date and time the file import started.
- *Bank Date* – banking date of file import.
- *File Type* – file type; the field contains the value "INET Incoming".
- *Received By* – user who imported the file.
- *File Name* – file name.
- *N of Received* – this field is not filled in for imported files ("0" is specified).
- *Status* – file status; for imported files, this field will contain the "Received" value.
- *Result* – result of file processing; this field is not filled in for Mastercard.
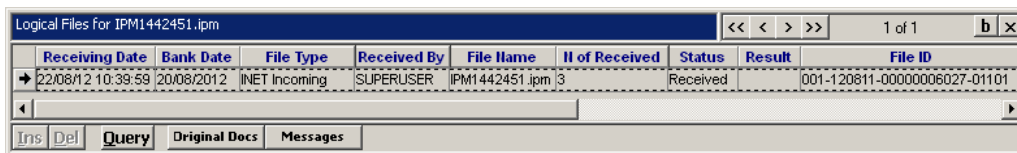
- *File ID* – file ID

- *Parms* – this field is reserved for use in future versions.

The following form fields are only filled in if file export is cancelled (see "File Export Reversal"):

- *Rollback Date* – date file export was rolled back.

- *Rolled back by* – user who rolled back file export.

- *Rollback Reason* – reason for file export rollback.

The [Messages] button is used to view messages generated in the process of importing files.

The [Logical Files] button is used to open the "Logical Files for <name of imported file >" form (see Fig. 5) used for access to logical files contained in an imported file.
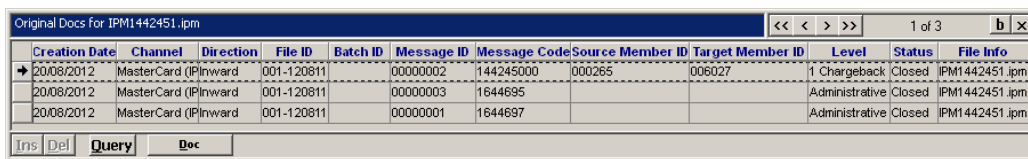

Fig. 5. Information about logical files in an imported file

In this form, the *N of Received* field indicates the number of messages in the corresponding logical file.

For access to messages contained in a logical file, select the row corresponding to the required logical file and click the [Original Docs] button.

Clicking this button opens the "Original Docs for <name of logical file >" form (see Fig. 6) with information about messages included in the logical file. Data from the ORIGINAL_DOC table of the database (see the section "**Error! Reference source not found.**) is used in this form.

Fig. 6. Information about logical file messages

This form contains the following fields:

- *Creation Date* – banking date on which the file was imported.

- *Channel* – name of clearing channel.

- *Direction* – this field contains the "Inward" value (import).
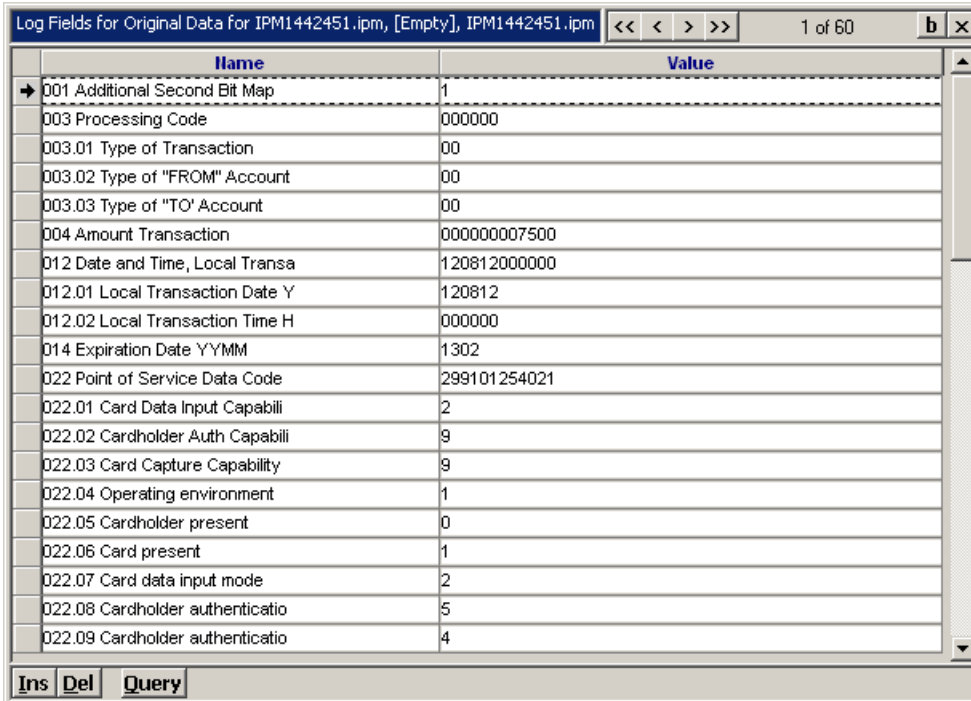
- *File ID* – logical file ID.

- *Batch ID* – batch ID, if the message is part of a batch.

- *Message ID* – message sequence number.

- *Message Code* – message code.

- *Source Member ID* – sender's identifier according to payment system rules.

- *Target Member ID* – recipient's identifier according to payment system rules.

- *Level* – message type, for example, "Presentment", "1 Chargeback". The "Administrative" value will be specified in this field for logical file headers and trailers.

- *Status* – message status.

- *File Info* – name of imported file.

Clicking the [Doc] button in the "Original Docs for <name of logical file>" form opens the "Doc for <...>" form with information about the document corresponding to the selected logical file message.

Logical file messages are stored in the database in packed form. To access a message's data, select the user menu item "Full →DB Administrator Utilities → Special OpenWay Utilities →Interchange →All Files"; in the "All Files" form that opens, select the required file and click the [Original Data] button.

As a result, the "Original Data for <...>" form will open. This form's fields are the same as those of the "Original Docs for <name of logical file>" form. In the "Original Data for <...>" form, click the [Unpack All] button, after which the process of unpacking the messages will be started and a progress bar will be displayed.

When the process finishes, click the [Log Fields] button in the "Original Data for <...>" form. The "Log Fields for Original Data for <...>" form will open (see Fig. 7). This form contains information about message fields and their values.
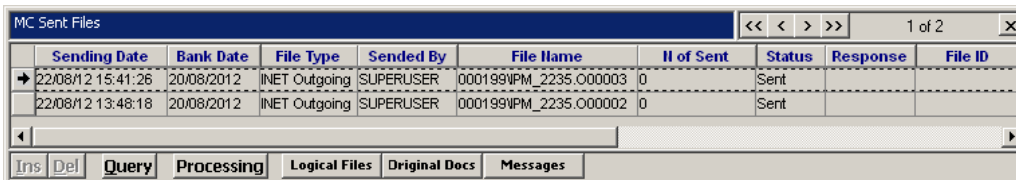
Fig. 7. Information on message field values

3.3.2 Exported Files

The form "MC Sent Files" (see Fig. 8) is used to monitor files exported to the payment system. This form is opened using the menu item "MasterCard →MC.File Management →MC Sent Files".

Fig. 8. List of files exported to the payment system

This form's fields are the same as those of the "MC Received Files" form (see Fig. 4 of the section "Imported Files"), with the following exceptions:

- *Sending Date* – calendar date and time file export was started.

- *File Type* – file type; this field contains the value "INET Outgoing".

- *SendedBy* – user who exported the file.

- *Status* – file status; for exported files, the "Sent" value will be specified in this field.

For access to logical files contained in an exported file, select the required exported file and click the [Logical Files] button. Clicking this button opens the "Logical Files for <name of exported file>" form (see Fig. 9).

Fig. 9. Information on logical files in an exported file

This form's fields are used in the same way as "Logical Files for <name of imported file>" form fields (see Fig. 5 of the section "Imported Files").

3.3.2.1 File Export Reversal

To roll back file export, in the "MC Sent Files" form (see Fig. 8 in the section "Exported Files") select the required file, click the [Processing] button and select the "Rollback" item from the context menu.

As a result, the "Specify Reason" form will be displayed (see Fig. 10), used to enter the reason for file export reversal.

Fig. 10. Form for entering the reason for file export reversal

After the required data has been entered, click the [Proceed] button; to cancel the operation, click the [Cancel] button.

When the process finishes, a message will be displayed "1 Files Rolled Back". In forms with file information, the *Rollback Date*, *Rolled back by* and *Rollback Reason* fields will be filled in for this file.

⚠ Note that after the export reversal operation, a file exported earlier will remain on the hard disk and documents that were to be exported in this file are reassigned the "To be Sent" status. Therefore, after executing this operation, it is recommended to manually delete this file.

It should also be noted that when re-exporting a file for the same banking date, the new exported file will have the same ID. Therefore, if export reversal and file re-export is executed because a file was completely declined by the payment system (for example, because of an error on the recipient's end), the file should be re-exported on another banking date.

3.3.2.2 Marking Documents for which Settlement Information has been Received

In Way4, it is possible to mark documents from a file that was not declined by Mastercard; when settlement information was received from the payment system for these documents.

To do so, in the "Logical Files for <name of exported file>" (see Fig. 9 of the section "Exported Files"), select the required logical file, click the [Processing] button and select the "Paid" item from the context menu.

As a result, the "Specify payment date and note" form will be displayed (see Fig. 11).
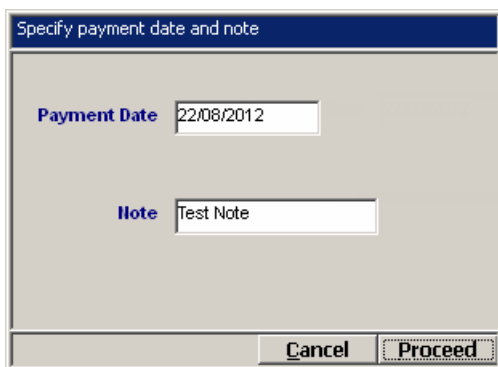
Fig. 11. Form for entering payment date and comments

In the *Payment Date* field, enter the date settlement information was received from the payment system, and in the *Note* field, enter a comment.

After the required data has been entered, click the [Proceed] button; to cancel the operation, click the [Cancel] button.

(i) Note that if settlement information was not received from the payment system for documents in a file, an error message will be displayed: "File with File ID <File ID> not settled yet".

If the process is completed successfully, all documents in the logical file will be assigned the status for export to an external system (Outward Status) "Accounted" (compensation received or corresponding funds debited from the bank).

3.4 Troubleshooting Typical File Import/Export Problems

Typical problems that occur during file import and export can be classified as follows:

- Errors caused by hardware problems like a server or local network failure (see the section "Technical Problems").

- Database errors followed by "Oracle SQL Error" messages. If an error of this kind occurs, please refer to Oracle documentation and/or contact Way4 customer support.

- File logical control errors (see the section "File Logical Control Errors");

- File format control errors (see the section "File Format Control Errors");

- Physical file errors (see the section "Physical File Errors").

3.4.1 Technical Problems

If errors of this kind occur during file import/export, it is recommended that users perform the following actions after the hardware has been restored:

- Interrupt the active import/export process (see the section "Active Processes Menu Item" of the document "DB Manager Manual").

- Cancel file import/export (see the section "Monitoring Files being Processed").

- Repeat the import/export procedure.

3.4.2 File Logical Control Errors

Messages about logical file control errors depend on the file transfer direction (import or export) and the format used on the clearing channel.

3.4.2.1 Mastercard Files

When importing these files, the following error messages may be generated:

- "Member ID <member> not on file" – no Interchange routing configuration is set up in Way4 for the bank with the specified *Member ID*.

- "File ID <File ID> from <file name> Already Processed" – the specified file has already been imported.

- "Warning: <FILE NAME> is a test file. Do you want to continue?" – test files may not be imported into a production database.

- "Missing logical file header" – it is recommended to contact the payment system to correct the imported data.

- "Unexpected file header message. Possibly trailer missing" – it is recommended to contact the payment system to correct the imported data.

- "Invalid message sequence number detected in file header message" и "Invalid message sequence number detected" – error in the value of the

IPM 071 Message Sequence Number field. It is recommended to contact the payment system to correct the imported data.

- "Field <FIELD NUMBER> (Data Record) contains binary zero in pos" – the file is imported successfully, but it is recommended to contact the payment system to correct data in files that will be received in the future.

If any other error messages are displayed, it is recommended to contact Way4 customer support.

When exporting Mastercard files, the following error messages may be generated:

- "Addendums requested in TRANS_CONDITION but not present" – it is recommended to change the value in the *Transaction Condition* field and repost the document.

- "Mapper: Unknown message type" – if this message is displayed, it is recommended to contact Way4 customer support.

- "Unknown Processing Class ID" – it is recommended to check BIN table data (see the section "Configuring the BIN Table" of the document "Interchange Routing").

- "Illegal transaction condition <condition code> for EDCM transaction" – the acquirer's device type is not allowed for this transaction type. It is recommended to correct the document and repost it.

- "Illegal SIC code <SIC> for ECHA transaction." – the SIC code value is not allowed for this transaction type. It is recommended to correct the document and repost it.

- "Posting date <date/time=23.59.59> less than transaction date <date/time>" – It is recommended to repost the document and send it with a later banking date.

- "IRI in ARN <Acquirer Ref Number> Not valid for ECRD" – for the current *Processing Class* (ECRD) value, only a limited number of *Interchange Rate Indicators* (the first two positions of the Acquirer Ref. Number). It is recommended to change the Service Package parameters of the corresponding contract, repost the document and re-export it to the payment system.

- "AID in ARN Not valid for ECRD" – if this message is displayed, contact Way4 customer support.

- "Transaction was downgraded. Use Repost" – if this message is displayed, the document should be reposted and re-exported to the payment system.

- "SIC Code incompatible with transaction type" – it is recommended to check and correct the SIC or transaction type of the document and repost

the document. If this error occurs when processing a merchant device document, contact Way4 customer support.

- "Unexpected addendum type detected" – the SIC is incompatible with the additional information type (Addendum Doc). It is recommended to check the document and correct the SIC or change the value in the *Transaction Condition* field, and then repost the document.

- "Chip Data not present" – if this message is displayed, check whether the *Transaction Condition* field is filled in correctly, and then repost the document.

- "Warning: Test mode detected some errors. Invalid messages are skipped. See process log" – during file export testing, some documents were assigned the "Suspended" and were not exported. It is recommended to analyse the process log.

- "Transaction Attributes and Internal Attributes are NULL. Impossible situation. Contact support." – the exported document does not contain information about transaction conditions, which is not allowed for original documents.

If any other error messages are displayed, it is recommended to contact Way4 customer support.

3.4.3 File Format Control Errors

Way4 informs users of file format control errors by the following messages:

- "File <name of file to be imported> validation failed".
- "Some file(s) were rejected during Interchange Engine Prevalidation".
- "Interchange engine reported error".

If these messages are displayed, the process log should be analysed as recommended in the section "Recommendations on Timely Identification of Dispute Situations" of the document "Way4 Dispute Management" and information about the process should be sent to Way4 customer support

3.4.4 Physical File Errors

Way4 informs users of physical file errors by the following messages:

- "Could not create directory" – Way4 cannot create a directory for the file to be imported.

- "Error opening audit counter file" – error while working with the NetServer audit counter file.

- "Could not open Engine requested file" – error while working with the file the pipe is trying to call.

If an error is due to an operating system problem, these messages are followed by a system error message (see the section "Operating System Errors when Working with Files"). Otherwise, or if any other messages are displayed, contact Way4 customer support.

3.4.4.1 Operating System Errors when Working with Files

If operating system errors occur when working with files, contact the system administrator. Operating system errors are indicated by the following messages:

- "No such file or directory"
- "Argument list too big"
- "Exec format error"
- "Bad file number"
- "Not enough memory"
- "Permission denied"
- "File exists"
- "Cross-device link"
- "Invalid argument"
- "File Table overflow"
- "Too many open files"
- "No space left on device"
- "Argument too large"
- "Result too large"
- "Resource deadlock would occur"
- "System reported error ..."

3.4.5 Monitoring Files being Processed

To monitor the status of files that are being processed, use the forms opened with the following menu items:

- For incoming files – the "MasterCard → MC.File Management → MC Incoming Pending Files" menu item
- For outgoing files – the "MasterCard →MC.File Management →MC Outgoing Pending Files" menu item.

Selecting one of these menu items opens the "MC Outgoing/Incoming Pending Files" form. The form contains lists of the corresponding types of files.

To access information contained in a file, select the record corresponding to the required file and click the [Logical Files] button. To reverse file import/export, click the [Rollback] button.

⚠ Note that it is impossible to reverse file import/export once the documents contained in the file have been processed.

4 Importing Additional Information

The following additional information must be imported into Way4 from Mastercard:

- Information for BIN table updates (see the section "Loading MasterCard BIN Table" of the document "Interchange Routing").

  ⓘ During this operation, information for updating currency, country and MCC handbooks is also imported into Way4.

- Information for updating the financial institution's internal stop lists (see the section "Stop List" of the document "Working with Stop Lists in Way4").

  Data are imported from Mastercard stop lists using the menu item "MasterCard →MC.Daily Procedures →MC.Load Stop List →Load MC Stop List".

  Before executing this menu item, the file received from Mastercard with the name mask "T*.*" must be copied to the "<OWS_WORK>\Data\Interchange\MC_Stop" directory.

- Information for updating payment system FX rates. To execute this operation, use the menu item "MasterCard → MC.Daily Procedures → MC.Load Bin Table and Handbooks →Load MC Rates".

  Before executing this menu item, the file received from Mastercard with the name mask "T05?????.???" must be copied to the "<OWS_WORK>\Data\Interchange\MPE_Inc" directory.

  Information about loaded FX rates can be viewed using the menu group "Full →Daily Procedures →Load BIN Tables and Handbooks →FX Channel Rates" (see the section "Loading Channel Rates" of the document "Currency Conversion").

5 Processing Information from Fraud Prevention Systems and Services

In Mastercard, information on suspicious transactions is recorded using the System to Avoid Fraud Effectively (SAFE).

Rules for working with the System to Avoid Fraud Effectively in Way4 are described in the document "SAFE Support".

6 Generating Reports

The following reports are necessary for interaction with Mastercard:

- Statistical reports regularly presented to Mastercard.

- Internal reconciliation reports used by the financial institution's staff.

A description of working with statistic reports for Mastercard is given in the document "MasterCard Statistical Reports".

To generate internal reconciliation reports used by the financial institution's staff, use the "MasterCard →MC.Reports" menu folder (see Fig. 12).
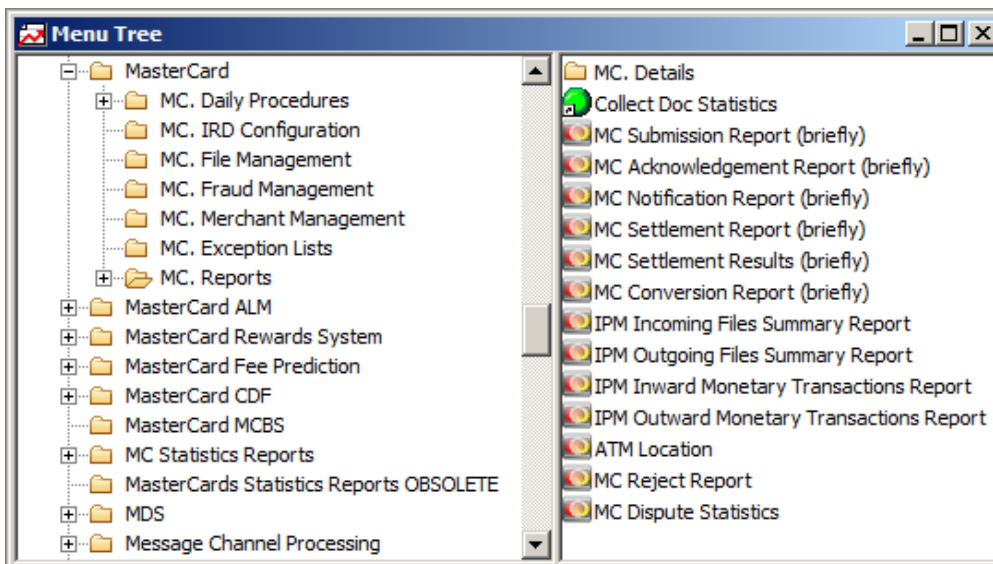

Fig. 12. Menu folder for generating internal reconciliation reports

This menu folder contains the following menu items:

- "MC Submission Report (briefly)". The report contains information on payment system settlement for outgoing transactions. Data in the report are grouped by currency, by files and by transaction types. In the report, the difference between data on transaction settlements and transaction acceptance is shown.

- "MC Acknowledgement Report (briefly)". The report contains information on outgoing transactions accepted by the payment system and messages on financial settlement corresponding to them for a selected period. Data in the report are grouped by currency, by files, and by financial settlement operation types. In the report, the difference is shown between data on transaction settlements and data on transaction acceptance for each

currency. This report also contains information about messages sent earlier by the bank and declined by the payment system.

- "MC Notification Report (briefly)". This report is used for reconciliation of incoming transactions and financial settlements for them. The report consists of two parts:

    - "Inward Notification" – contains data on incoming clearing messages grouped by files, transaction types and currency.

    - "Inward Reconciliation" – contains information on settlements made by the payment system for incoming clearing messages.
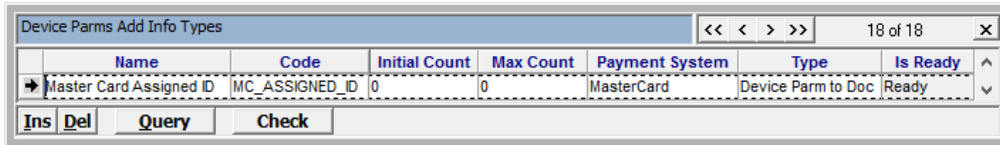
    At the end of the report, the difference between clearing data and settlement data is calculated for each currency.

- "MC Settlement Report (briefly)". The report contains data on settlements made by the payment system for one day. The report consists of two parts:

    - "Reconciliation" – contains data on settlements by transaction types.

    - "Settlement" – contains data on the payment system's total settlement for this *Member Id*.

- "MC Settlement Result (briefly)". The report contains data on the payment system's total settlement for this *Member Id* for one day.

- "MC Conversion Report (briefly)". The report shows total transaction amounts for all sent transactions for a certain period. Report data are grouped by file number, by transaction currency and by settlement currency.

- "IPM Incoming Files Summary Report". The report provides a technical summary for a specified time interval for each IPM file accepted by Mastercard that was sent by a particular *Member Id*. The report gives the number and amount of transactions for all transaction types and various transaction conditions.

- "IPM Outgoing Files Summary Report". The report provides a technical summary for a specified time interval for each IPM file sent by Mastercard and accepted by a particular *Member Id*. The report gives the number and amount of transactions for all transaction types and various transaction conditions.

- "IPM Inward Monetary Transactions Report". A journal of all IPM transactions for a specified period accepted from Mastercard by a particular *Member Id*. Report data is grouped by settlement currency and clearing file number.

- "IPM Outward Monetary Transactions Report". A journal of all IPM transactions for a specified period accepted by Mastercard from a particular *Member Id*. Report data is grouped by settlement currency and clearing file number.

- "ATM Location". The report contains information about the location of ATM networks. The generated report ("ATM_LOCATION.txt" file) must be sent to Mastercard.

- "MC Reject Report". The report contains information about outgoing transactions rejected by the payment system.

- "MC Dispute Statistics".This report is used to show statistics on dispute documents. Report data is grouped according to the name of financial institution and document type (inward or outward).
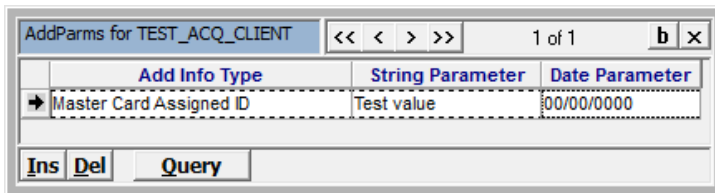
7 Configuring Merchant Contracts

To configure the merchant ID assigned by the payment system, add a line for "MasterCard Assigned ID" to the "Device Parms Add Info Types" (see Fig. 13) dictionary (Full →Configuration Setup →Merchant Device Setup →Device Parms Add Info Types).

Fig. 13. Adding a new type of additional information

In merchant contract forms (MasterCard → MC. Merchant Management → MasterCard Acquiring Contracts) for which the MasterCard Assigned ID must be specified, click the [Add Parms] button. In the *Add Info Type* field of the "Add Parms for ..." (see Fig. 14) form that opens, select the value "MasterCard Assigned ID" from the drop-down list and in the *String Parameter* field, specify the value provided by the payment system.

Fig. 14. Setting the value of the MasterCard Assigned ID parameter

⚠ The MasterCard Assigned ID is specified in contract parameters according to Mastercard requirements. This value is provided to the acquirer by Mastercard and may not be independently specified by the Bank.

ⓘ Note that the MasterCard Assigned ID can be specified not only on the merchant account contract level, but on the level of device child contracts as well.

8 Settings for Processing Mastercard MoneySend Transactions

This section describes Way4 settings to support the Mastercard MoneySend service.
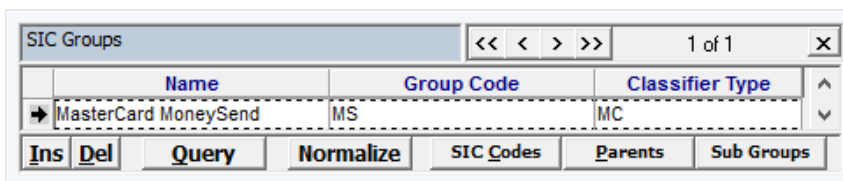
This service is supported by online conversion of authorization documents for money transfer transactions into financial documents (presentments) and by making credit "holds". In this case, documents from clearing files that correspond to these transactions must be imported as acknowledgements, for reconciliation.

To implement this functionality, the following must be configured:

- SIC Groups

- Transaction Types

- Configuring Services

- Other Parameters – global parameters and parameters of pipes for importing clearing information.
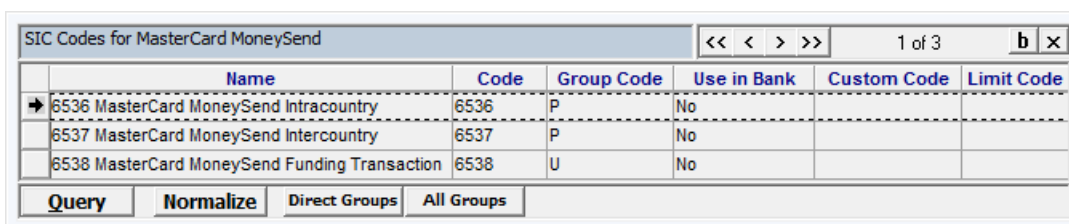
8.1 SIC Groups

To support the Mastercard MoneySend service, register a new group in the "SIC Groups" dictionary (Full →Configuration Setup →Main Tables →SIC Groups) (see Fig. 15).

Fig. 15. Adding a SIC group

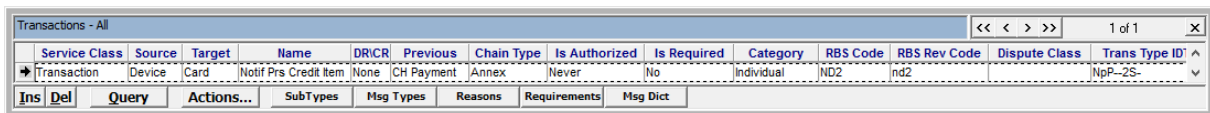In this SIC group, register the corresponding SIC codes (see Fig. 16).

Fig. 16. Adding SIC codes

ℹ️ The full list of SIC codes is provided by Mastercard in Mastercard MoneySend documentation.
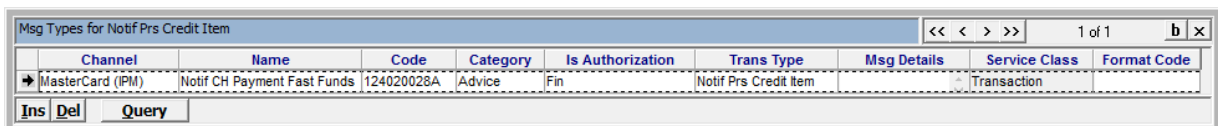
8.2 Transaction Types

To support the Mastercard MoneySend service, register the "Notif Prs Credit Item" transaction type in the "Transactions – All" dictionary (Full →Configuration Setup → Transaction Types →Transactions – All) (see Fig. 17).

	Service Class	Source	Target	Name	DR\CR	Previous	Chain Type	Is Authorized	Is Required	Category	RBS Code	RBS Rev Code	Dispute Class	Trans Type ID
➜	Transaction	Device	Card	Notif Prs Credit Item	None	CH Payment	Annex	Never	No	Individual	ND2	nd2		NpP--2S-

Ins Del   Query   Actions...   SubTypes   Msg Types   Reasons   Requirements   Msg Dict

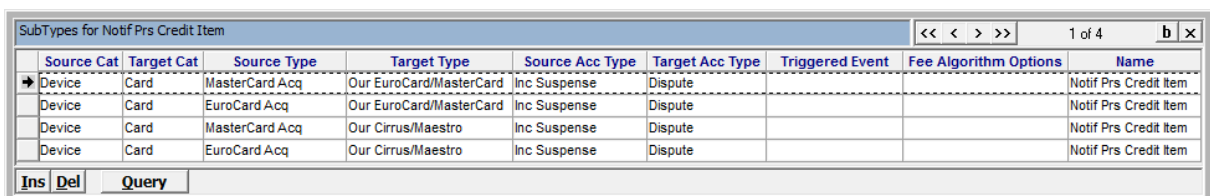*Fig. 17. Registering a transaction type*

For this transaction type, click on the [Msg Types] button and register a message type with the code "124020028A" (see Fig. 18).

	Channel	Name	Code	Category	Is Authorization	Trans Type	Msg Details	Service Class	Format Code
➜	MasterCard (IPM)	Notif CH Payment Fast Funds	124020028A	Advice	Fin	Notif Prs Credit Item		Transaction	

Ins Del   Query

Fig. 18. Registering a message type

For the transaction type that was registered (see Fig. 17), configure the following transaction subtypes (see Fig. 19).

	Source Cat	Target Cat	Source Type	Target Type	Source Acc Type	Target Acc Type	Triggered Event	Fee Algorithm Options	Name
➜	Device	Card	MasterCard Acq	Our EuroCard/MasterCard	Inc Suspense	Dispute			Notif Prs Credit Item
	Device	Card	EuroCard Acq	Our EuroCard/MasterCard	Inc Suspense	Dispute			Notif Prs Credit Item
	Device	Card	MasterCard Acq	Our Cirrus/Maestro	Inc Suspense	Dispute			Notif Prs Credit Item
	Device	Card	EuroCard Acq	Our Cirrus/Maestro	Inc Suspense	Dispute			Notif Prs Credit Item

Ins Del   Query

Fig. 19. Configuring transaction subtypes

8.3 Configuring Services

The Mastercard MoneySend service is supported with conversion of authorization documents into financial ones and setting a credit "hold" until funds are posted to accounts. To do so, the following Target services must be configured in the Service Packages of card contracts for our cards (see Fig. 20).

	Source Type	Transaction Type	Fee Dir	Base	%	Min	Name	Fee Account	Account Type	Contract Type	Service Details	Is Ready
➜	MasterCard Acq	CH Payment	None	0,00	0,00	0,00	CH Payment (MasterCard Acq)	Cash Fees Passive USD	CI Deposit	Our EuroCard/MasterCard	DOC_MODE=SMS;DOC_TAG=PTID;DOC_TAG_VALUE=C07,C52,C53,C54,C55,C56,C57,C67; PENDING=Y;	Ready
	EuroCard Acq	CH Payment	None	0,00	0,00	0,00	CH Payment (EuroCard Acq)	Cash Fees Passive USD	CI Deposit	Our EuroCard/MasterCard	DOC_MODE=SMS;DOC_TAG=PTID;DOC_TAG_VALUE=C07,C52,C53,C54,C55,C56,C57,C67; PENDING=Y;	Ready

Ins Del   Query   Duplicate   Full Info   Custom Fee   History

Fig. 20. Configuring card contract Target services

In the *Service Details* field of these Services, the following value must be specified: "DOC_MODE=SMS;DOC_TAG=PTID;DOC_TAG_VALUE=C07,C52,C53,C54,C55,C56,C57; PENDING=Y;".

"MasterCard MoneySend" must be specified in the *SIC Group* field of the "Full Info for <name of Service>" form for these Services.

> Note that in card contract Service Packages, there may be permissive Services with the "CH Payment" transaction type and an empty value in *Service Details* and *SIC Group* fields for transactions that are not related to the Mastercard MoneySend service. In this case, specify a positive value different than zero in the *Priority* field of Services for Mastercard MoneySend transactions.

8.4 Other Parameters

To convert Mastercard MoneySend transaction documents imported from a clearing file into acknowledgements (Chain Type=Acknowledgement), set the value of the global parameter MC_FAST_FUNDS to "Y", and **check** that the USE_PAYMENT_TRANSACTION = N parameter **is not present** for pipes to import clearing information.

8.5 Transaction Processing

Mastercard MoneySend transactions are processed according to the aforementioned settings as follows:

1. Based on a Mastercard MoneySend authorization message received from the payment system, a document with Source Code = "01000P" is generated in the Way4 database.

2. Using the card contract's Service (see "Configuring Services"), the authorization document is converted into a financial one. The "DOC_MODE=SMS;" tag is specified in this document's Add_Info field. Before this document is processed by the document processing procedure, the card contract's amount available is increased by a credit "hold" that is created by the "PENDING=Y;" tag of the card contract's Service.

3. The Mastercard MoneySend transaction's financial document is processed by the document processing procedure. This results in the credit "hold" being release, and funds are shown in the contract's current account.

4. After the clearing file has been imported to Way4, a document for the Mastercard MoneySend transaction with Source Code = "124020028A" is generated in the database.

5. This clearing document is processed during the document processing procedure. When processing a document, a search is made for a financial document generated online from an authorization document. If this document is found, processing of the clearing document with the "Notif Prs Credit Item" transaction type is successfully completed with the "Successfully completed" response code.

6. If the original financial document is not found when processing the clearing document, processing of a document with the "Notif Prs Credit Item" transaction type will be terminated. A warning message "Presentment not found for fast funds notification, converting to presentment" will be generated. The clearing document's transaction type will be changed to "CH Payment". The next time the document processing procedure is run, the clearing document will be processed with consideration of the new parameters.