



Functional Specification

ABU Functional Specification (Acquiring)

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ABU (Automatic Billing Updater) functionality makes it possible for acquirers to receive and respond to merchant requests for up-to-date information (PAN, Expire Date) about payment cards with which recurring transactions are made at this merchant.

This document is intended for bank or processing centre employees responsible for interaction with payment systems as concerns ABU functionality.

The following notation is used in the document:

- Field labels in screen forms are shown in *italics*.
- Key combinations are shown in angular brackets, for example, <Ctrl>+<F3>.
- Names of screen form buttons and tabs are shown in square brackets, for example, [Approve].
- Sequences for selecting user menu items or context menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: Database => Change password.
- Variables that differ for each local instance, such as directory and file names, as well as file paths are shown in angular brackets, as in <OWS_HOME>.

Warnings and information are marked as follows:



Warnings about potentially hazardous situations or actions.



Messages with information about important features, additional options, or the best use of certain system functions.

1. Purpose of ABU (Acquiring)

ABU for acquiring provides the following functionality:

- Storing data about registered merchants in payment system ABU system.
- Importing data to WAY4™ from files with merchant requests for up-to-date payment card information.
- Viewing lists of payment cards for which information must be updated that were received in merchant requests.
- Preparing (including consolidation of duplicate records) payment card data and determining the target payment system.
- Exporting payment card data from WAY4 to files for sending requests to payment systems.
- Importing payment card data to WAY4 from payment system response files (updated data for cards for which there were duplicate requests are recorded in the response to each request).
- Exporting data from WAY4 containing up-to-date payment card information to response files for merchants.

2. Merchant interaction with acquirer ABU systems

Acquirers exchange messages with merchants using pipes:

- "ABU Merchant Request Import" – pipe for importing data to WAY4 from a file with a merchant's request for up-to-date information for a list of payment cards.
- "ABU Merchant Response Export" – pipe for generating a response file for a merchant's request; the file is based on up-to-date data received by WAY4 from the payment system (see the section ["Acquirer ABU system interaction with payment systems"](#)).

To import information to WAY4 from a file with a merchant request, run the "ABU Merchant Request Import" pipe. Information from the file will be saved to the database as separate records for each card. Records are automatically approved and are ready to be included in requests sent to payment systems (if no errors occurred when approving them). Records can be edited using grid forms. After changes to records have been entered, they must be approved again, this time manually.

Records may get the following outward statuses when information from merchant requests is received and approved:

- "Waiting" – record is available for editing and is waiting for approval.
- "To be Sent" – record has been approved and is waiting for a request to be sent to the payment system.
- "Decline" – error occurred when approving the record (the list of error messages can be viewed in grid forms).

For a merchant to be precisely determined in an incoming message, it must be indicated in one of two ways:

- With the merchant identifier in the "MerchantID" field.
- With the terminal identifier in the "TerminalID" field. In this case a financial institution's unique identifier must be specified in the "BranchCode" field (see the section "Changing Basic FI Configurations" in the document "Financial Institutions").

To export up-to-date card information to merchants after payment system responses have been received, it is necessary to run the "ABU Merchant Response Export" pipe.

A response file is only exported if a processing result for each payment card was received, i.e. only for requests in which each record has one of the following outward statuses:

- "Decline" – declined during approval before sending the request to the payment system.
- "Rejected" – rejected by the payment system.
- "Confirmed" – up-to-date information about the card was received from the payment system.



The format for files to exchange messages between the acquirer and merchant, and requirements for filling in fields are described in the corresponding CHM files included in the delivery set.

The ABU system supports payment card tokenization on the acquirer's side (see the section "[Tokenization support](#)").

The specified pipes, as well as forms, menu items, and CHM files are provided to OpenWay customers with the corresponding software licences.

3. Acquirer ABU system interaction with payment systems

When payment card records received in a merchant request are successfully approved, a communication channel with the payment system is determined for each record. Pipes for export to the appropriate payment systems' ABU systems are used to generate files with requests for updated card information. Request files will include records with the "To be Sent" outward status, and in case of duplicate records (with the same set of key fields, for example, PAN, Expiry Date, and merchant ID) one will be selected to reduce the request size.

If an error occurred when approving the record, "D" (declined by acquirer) is specified for the processing status indicator (RESP_CODE field).



Request files only contain records from successfully registered merchants (see the section ["Registering merchants in payment system ABU systems"](#)).

Payment system response files are imported to WAY4 using the appropriate pipes and are saved in the database as incoming records with the "Waiting" status. If at the request stage a record had duplicates, the response record will be duplicated the corresponding number of times (a response is provided for each request). In approval (performed automatically immediately after import) of the records received, they are matched with the records from which the request was generated. Depending on the result of matching, incoming records get the "Closed" (successfully matched) or "Decline" (no corresponding original record was found) status. If matching was successful, updated information for the payment card is entered in the original record and a processing status indicator is set (RESP_CODE field):

- "A" – card's PAN and Expiry Date were updated, or the token has been changed (see the section ["Tokenization support"](#)).
- "E" – card's Expiry Date was updated.
- "V" – valid PAN (no updates for the card were found, the card is valid) or token (see the section ["Tokenization support"](#)).
- "C" – invalid card (card account is closed or has expired), or an error occurred when receiving a new token (see the section ["Tokenization support"](#)).
- "S" – valid card but recurring transactions must be stopped due to the cardholder's request or for other reasons.
- "U" – card was not found in the ABU system database.
- "J" – request rejected by the payment system (detailed information is shown in the ERROR_CODE field).
- "Q" – contact the cardholder to continue interaction with the card.



The specified pipes, as well as forms, menu items, and CHM files are provided to OpenWay customers with the corresponding software licences.

4. Registering merchants in payment system ABU systems

To provide up-to-date card information to a merchant, some payment systems require the merchant's preliminary registration in the payment system's ABU system.

A merchant is registered in the payment system's ABU system and registration is cancelled as follows:

- select the merchant's acquiring contracts and mark them for registration or cancellation of registration (see WAY4 guidelines for interacting with the corresponding payment system's ABU).
- when the file interface between acquirer and payment system's ABU is present:
 - approve the application to send a request for registration or cancellation of registration to the payment system's ABU
 - using the appropriate pipe, generate a request file to the payment system
 - use the pipe for importing information from the payment system's response file to get the operation's results
- when the file interface is not present - follow the payment system's recommendations for merchant registration in ABU system.



User documentation and the necessary pipes and forms are provided to OpenWay customers with the corresponding software licences.

5. Setup of ABU functionality (Acquiring)

For a merchant to be able to participate in the Visa Account Updater and Mastercard Automatic Billing Updater systems, ensure the appropriate classifiers are present in WAY4:

- Find or set classifiers with the "VISA_ABU_PTCP" and "MC_ABU_PTCP" codes (Code field) and with the field values that are shown in the figure .
- For these classifiers, add the "Y" and "N" values.
- In the classifiers' *Default Value* field, select the "N" value.

User Classifiers														1 of 2			
Name	Code	Group Code	Category	Default Value	Applies To	Client Cat	Contract Cat	Product Cat	Role	Add Info	On Off Mode	Log Changes	Domain Code				
MasterCard ABU Participation	MC_ABU_PTCP	Interchange	Status	2 Merchant doesn't participate in MABU (OK)	Any Contract	Commercial	Account	Acquiring	Primary			Value					
VISA ABU Participation	VISA_ABU_PTCP	Interchange	Status	2 Merchant doesn't participate in VABU (OK)	Any Contract	Commercial	Account	Acquiring	Primary			Value					

6. Tokenization support (ABU Acquiring)

The ABU system supports payment card tokenization on the acquirer's side in two ways.

The first way assumes the use of Cards acquiring tokenization (supplied as a separate license option). Messages are processed as follows:

- when a request (for updating card information) is received from the merchant, and this request contains a token, this token is used to determine the card's PAN and expiry date
- acquirer ABU system interaction with the payment system is standard (see the section ["Acquirer ABU system interaction with payment systems"](#))
- after a response has been received from the payment system:
 - if the card was reissued (the RESP_CODE field is equal to "A" or "E"), a token for the card's new attributes is requested from the tokenization system:
 - if the received token is the same as the original token, a response about the absence of changes ("V" code) that contains the original token is sent to the merchant
 - if the received token differs from the original token, a response about reissue ("A" code) that contains the new token is sent to the merchant
 - if an error occurred when receiving a token, the "invalid card" response ("C" code) is sent to the merchant
 - if no changes were made to the card, a response about the absence of changes ("V" – valid PAN) that contains the original token is sent to the merchant
 - in other cases, the merchant is sent a response with the code received from the payment system (see the section ["Acquirer ABU system interaction with payment systems"](#)).

The second way the ABU system supports payment card tokenization is the use of a third-party system that determines a card's PAN and expiry date according to a token before sending a request from the merchant to WAY4. In this case, to save a token (or any other additional information) the "RegNumber" field (a string no longer than 64 characters) of a request message can be used. This information is not sent to payment systems when updating card data and is returned unchanged in a response message to merchant.