

TPPS Operation

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Introduction



This document describes operation of the Transport Payment Processing Solution (TPPS) for the acquiring module, and also describes activities for viewing the states of cards and documents processed by the TPPS.

This document is intended for WAY4 users (bank or processing centre employees) responsible for operation of the TPPS.

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

- "Transport Payment Processing Solution Setup" (TPPS_Setup.pdf).
- "Transport Payment Processing Solution" (Transport_Solution_Functional_Specification.pdf).
- "DB Manager Manual".

The following notation is used in the document:

- Field labels in screen forms are shown in *italics*.
- Screen form button labels are encased in square brackets, such as [Approve].
- Sequences for selecting user menu items are shown with arrows, as in: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown with arrows, like "Database => Change password".
- Key combinations used to work with DB Manager are shown in angular brackets, for example, <Ctrl>+<F3>.
- Variables such as directory and file names, file paths that differ for each local computer are shown in angular brackets, for example, <OWS_HOME>.
- Warnings about the danger of making errors are marked with the  sign.
- Messages marked with the  sign contain information about important features, additional facilities or the optimal use of certain system functions.

Terminology

Transport Payment Processing Solution (TPPS) – transit solution with issuing of digital wallets based on reloadable Visa prepaid products.

Validator – POS terminal technically connected to a turnstile.

Service request – a cardholder's attempt to receive a transit service and pay at a validator.

Authorization – an attempt by the TPPS to get authorization from the card's issuer for the volume of services provided, including for services to be paid with On-Us cards.

Online authorization – authorization of a single service request performed at the same time the service is provided (if the issuer's response is negative, the validator will be sent a message that entry is not permitted).

Deferred authorization – authorization of a single service performed after the service has been provided (the validator is sent a message from the acquirer that entry is permitted, before a response to the authorization request is received from the issuer).

Aggregated authorization – a single authorization for several services provided, made for one card. This authorization's amount includes the amounts of several services that were provided. Aggregated authorization is performed after the services have been provided – the acquirer sends the validator a message that entry is permitted and authorization is performed when specific values are reached for the total amount, number and period of services provided.

Quarantine – additional limit on the generation of deferred authorizations; in a quarantine period, all card service requests are processed online. A quarantine can be defined:

- Unconditionally, for a certain period.
- For the number of successful authorizations that must be approved by the issuer online; the quarantine will be removed, for example, after three successful online authorizations.

 In general descriptions (not regarding form factor issues) the term "card" applies to all available form factors used for payment.

Chapter 1. Viewing and managing cards

To create a system of trust levels for cards presented in the process of providing transit services, the acquirer keeps a table with the history of these cards, their statuses, and current counter values for card authorizations requested.

Viewing card information

Card statuses are viewed in the "TPPS Card" window, menu item "TPPS → TPPS Card" (see Fig. 1).

TPPS Card

Amendment Date

PAN

Expiry Date

Card status

In Progress TRX Count

In Progress TRX Amount

Declined TRX Count

Declined TRX Amount

Netted TRX Count

Netted TRX Amount

Last successful TRX

Last declined TRX

End of quarantine

Quarantine TRX Count

Add info

Record created

200417 14.43.04

4701340000000000

70-12

WHITE

13

32.870

0.003

32.87260317 14.43.04

00/00/00 00:00:00

00/00/00 00:00:00

0

IS_ODA=1

150117 14.43.04

Item List

Query

Docs

Strip List

Fig. 1. TPPS Card window

Field descriptions:

- *PAN* – PAN of the card (or the identifier of a different payment method) processed by the TPPS (shown when paying for transportation).
- *Expiry date* – expiry date of the card processed by the TPPS. In the TPPS, cards with the same PANs but with different expiry dates are considered separate payment instruments. These cards have independent statuses, counter values, dates of status changes, etc.
- *Card Status* – the payment instrument's current status in the TPPS system; may have the following values:
 - **DENY** – the card cannot be processed in the TPPS, the status may only be assigned when statuses are initially assigned to cards (see the section "Initial assignment of card status" of the document "WAY4™ Transport Payment Processing Solution Setup"). This is because when processing is prohibited due to the card's presence in a stop lists or card range stop list, a record for the card is not created in the "TPPS_CARD" table, and if a response from the issuer is received prohibiting all transactions with this card, the card is put into a stop list, but its status does not change.
 - **GRAY** – only online authorization is allowed for this card.
 - **GREEN** – single deferred authorizations are allowed for the card (the validator is sent an order to allow the transportation service before a response from the issuer is received).



Counter values also influence the logic of generating responses for cards with the "green" status:

- ♦ *In Progress TRX Count* – when the value is not zero, the current service request will be processed online.
- ♦ *Declined TRX Count* – when the value is not zero, the current service request will be processed online.

- ♦ *Quarantine TRX Count* – when the value is not zero, the current service request will be processed online.
- ♦ *End of quarantine* – when the value is greater than the current date/time, the service request will be processed online.
- **WHITE** – aggregated authorizations are permitted for the card: the validator is set an order to allow the transportation service; services provided are totaled within the limits allowed by system settings (see the section "Global Parameters" of the document "WAY4™ Transport Payment Processing Solution Setup") and are then periodically sent to the issuer at times defined by settings.



Counter values also influence the logic of generating responses for cards with the "white" status:

- ♦ *Declined TRX Count* – when the value is not zero, the current service request will be processed online.
- ♦ *Quarantine TRX Count* – when the value is not zero, the current service request will be processed online.
- ♦ *End of quarantine* – when the value is greater than the current date/time, the service request will be processed online.
- *In Progress TRX Count* – number of service requests currently in the issuer authorization phase or in the aggregation phase in the TPPS.
- *In Progress TRX Amount* – amount of services provided (in the provider's currency), that are currently with the issuer in the authorization phase or in the aggregation phase in the TPPS; the counter amount (*In Progress TRX Amount* + *In Declined TRX Amount*) is the difference between the volumes of provided and paid services for this card.
- *Declined TRX Count* – number of service requests for which a negative response was received from the issuer. This response causes a cardholder debt to the transportation service provider.
- *Declined TRX Amount* – amount of services provided (in the provider's currency) for which a negative response was received from the issuer (cardholder's debt to the transportation service provider); the counter amount (*In Progress TRX Amount* + *In Declined TRX Amount*) is the difference between the volumes of provided and paid services for this card.
- *Netted TRX Count* – number of service requests for which aggregated authorizations were generated that have not yet received a response from the issuer. When a response is received from the issuer, this counter decreases by the number of aggregated service requests that were processed. A negative response causes the *Declined TRX Count* and *Declined TRX Amount* counters to increase.
- *Netted TRX Amount* – amount of services provided (in the provider's currency) for which authorizations were generated that have not yet received a response from the issuer.

- *Last successful TRX* – date/time of the last successful authorization by the issuer (online or deferred), if any; the parameter is used to check the quarantine for a card with the "green" status and to check a change from "green" to "white" status.
- *Last declined TRX* – date/time of the last unsuccessful authorization by the issuer (online or deferred), if any; the parameter is used to check a change from the "green" to "white" status.
- *End of quarantine* – end date/time of the quarantine (unconditional requirement for online authorizations) for this card; the parameter can be used for forced assignment of the "gray" status to certain cards for a period.
- *Quarantine TRX Count* – number of service requests that must be successfully authorized online for a card to be processed according to the logic for its status; the parameter can be applied to cards with the "green" and "white" statuses to force assignment of the "gray" status to certain cards according to the number of authorizations.
- *AddInfo* – additional information about a card (in "tag name"="tag value" format).

Currently, the IS_ODA=Y; tag is supported – a card supports the Offline Data Authentication (ODA) protocol. Support of this protocol increases the level of trust in a card.

- *Record created* – date/time the card was first presented in the TPPS (with the exception of refusals the first time the card was presented due to it being in a card stop list or stop list of card ranges).

The "TPPS Card" form supports the following:

- Viewing information about requested services for this card. To get information, click on the [Docs] button in the "TPPS Card" form (see Fig. 1).
- Viewing information about the presence of this card in the transportation service provider's stop list. To get information, click on the [Stop List] button in the "TPPS Card" form (see Fig. 1).

Removing a card from a service provider's stop list

To perform the operation, select the menu item "TPPS → Card Stop List (Merchant-specific)".

In the "Card Stop List (Merchant-specific)" form that opens, select the required card and use the [Del] button to delete it from the stop list.

Viewing information about the current state of a stop list with card ranges for a service provider

Information about the current state of a service provider's card range stop list can be viewed in the "Card BIN Stop List (Merchant-specific) form, menu item "TPPS → Card BIN Stop List (Merchant-specific)".

Chapter 2. Viewing and managing documents

When processing service requests, documents for the requests are generated in the WAY4 documents table. Depending on the level of trust in a card, these documents may reflect authorization requests (financial documents) or retain service request status (if aggregating documents were created on their basis). For cards with a "white" status, several service requests can be joined in one financial document – an aggregating authorization that will be sent to the issuer.



If there was only one service request for a card when conditions for aggregating by period arise, a separate aggregating document is not created.

Viewing information about requested services

Information about requested services, and about aggregated authorizations that were created can be viewed in the "Transport All Docs" form (see Fig. 2). The form can be opened directly from the menu item "TPPS → Transport All Docs" with the necessary filtering conditions. It can also be opened as a subordinate form for the "TPPS Card" form – in this case, the "Docs for ..." form shows requested services and authorizations only for cards selected in the parent form.

Transport All Docs											<< < > >>		1 of 12	X
unt	Posting Date	Posting Status	Outward Status	Return Code	Location	Card status	Deferred	Aggregation	Add Info	ID	TPPS_QID	TPPS_CARD_ID		
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920960	133670				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920950	133660				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920940	133650				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920920	133630				
32.97/00/00/0000		Postponed	To be Sent	Not sufficient funds	AKADEMIKA	WHITE	Y	Aggregate 3 docs	AGG_DOC=Y;SRC=2;6920930	133640				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920900	133610				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920910	133620				
32.97/00/00/0000		Postponed	To be Sent	Not sufficient funds	AKADEMIKA	WHITE	Y	Aggregate 3 docs	AGG_DOC=Y;SRC=2;6920890	133600				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920860	133570				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920870	133580				
10.99/00/00/0000		Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201;POSTAL_C6920880	133590				

Fig. 2. "Transport All Docs" form

Description of fields that are specific to the TPPS:

- *Posting Status* – document approval status. The following document statuses are used in the transport solution:
 - *Suspended* – authorization has been sent to the issuer, no response has been received.
 - *Waiting* – a positive response to the authorization request was received from the issuer; the document is waiting for approval.
 - *Posted* – the document has been successfully approved.
 - *Rejected* – a negative response to the authorization request was received from the issuer.
 - *Postponed* – a service request caused deferred authorization that will be processed later; the status can be applied to service requests for cards with the "green" and "white" statuses.

- Under workflow – a service request for a card with the "white" status was aggregated with other service requests; from the time of aggregation it will not be considered a separate financial document.
- *Location* – location of validator.
- *Card status* – card status when the document was generated (see the description of statuses in the section "Viewing card information").
- *Deferred* – indicates that an authorization was transformed from chip to "Card-Not-Present".
- *Aggregation* – description of a document's aggregation status; the following values are possible:
 - (empty) – the document did not currently participate in aggregation (cannot be aggregated or can be aggregated, but aggregation conditions for it have not yet occurred).
 - "Aggregated" – the document is included as an aggregated document in another (consolidating) document.
 - "Aggregate N docs" – the document is an aggregation of N other documents.
- *AddInfo* – additional information about a card (in "tag name = tag value" format).
- *TPPS Card ID* – identifier of the card for which this document was created, in the "TPPS Card" table.
- *TPPS Queue ID* – identifier of the last record in the table of queues for this document (debugging information).

Diagnostic (debugging) information about a document can be viewed in the "Doc general" → [Messages] form, menu item "Full → Documents Input & Update → Doc - General".

Resending (manually) a rejected authorization

To perform the operation:

1. In the "Transport All Docs" form (menu item "TPPS → Transport All Docs"), select the required service request or aggregated authorization rejected earlier by the issuer (see the section "Viewing information about requested services").
2. Click on the [Resend] button (see Fig. 3).

Transport All Docs											<< < > >>		1 of 12	X
unt	Posting Date	Posting Status	Outward Status	Return Code	Location	Card status	Deferred	Aggregation	Add Info	ID	TPPS_QID	TPPS_CARD_ID		
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920960		133670				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920950		133660				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920940		133650				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920920		133630				
32.97/00/00/0000	Postponed	To be Sent	Not sufficient funds	AKADEMIKA	WHITE	Y	Aggregate 3 docs	AGG_DOC=Y;SRC=C6920930		133640				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920900		133610				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920910		133620				
32.97/00/00/0000	Postponed	To be Sent	Not sufficient funds	AKADEMIKA	WHITE	Y	Aggregate 3 docs	AGG_DOC=Y;SRC=C6920890		133600				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920860		133570				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920870		133580				
10.99/00/00/0000	Under Workflow	To be Sent	Successfully completed	AKADEMIKA	WHITE	Y	Aggregated	SRC=201:POSTAL_C6920880		133590				
<													>	
Ins	Del	Query	Resend	Doc general										

Fig. 3. Resending (manually) a rejected authorization