Acquiring Module Terminal Device Attribute Setup

Contents

Introduction

This document is the manual for setting up the attributes of terminal devices supported by the WAY4 Acquiring module.

When working with this document, it is recommended to use the following resources:

- "Acquiring Module. User Manual".
- "POS Network Management".
- "ATM Controller".
- "Documents".

The following notation is used in the document:

- 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

During operations on terminal devices (for example, ATMs or POS terminals) registered in the Acquiring module, transactions with the cards of third-party issuers are sent by WAY4 to payment system interface channels. Transaction messages comply with the corresponding payment system's ISO message format. Information from processed transactions is recorded in the WAY4 database in the form of documents that are further used to export clearing information. WAY4 also provides for the export of clearing data based on documents from external systems.

Acquiring module settings make it possible to define specific device attributes (such as device category, card reading method, etc.) that will be transmitted in ISO messages for the corresponding payment system online or as part of clearing information. These attributes are specified as the values of tags in device type settings (for example, in "POS Types" or "ATM Types" dictionaries, in the *Special Configuration* and *EMV Conf File* fields, respectively). When a transaction message received from the corresponding device type is processed, these tag values are shown in the *Add Data* field of the document that was created.

Tag values determining the device specific are also analysed when generating reports on transactions with the cards of the corresponding payment systems.

Device attribute tags are defined according to the following rules:

- In device type parameters, tags are set in the format:

  tag_name:tag_value;

- In a document created when an operation is performed on the corresponding type of device, tags are recorded in the format:

  tag_name=tag_value;

- In a list of tags, each value ends with the ";" character (semicolon).

This document describes tags used in the Acquiring module to define the attributes of registered terminal devices.

Chapter 2. Terminal Device Attribute Tags

In general, static attributes of terminal devices are set with the "DEV" tag (see the description of the "DEV" tag) and can further be used when recording transaction information in the database and sending as part of clearing information.

If there is an interface with a payment system, in addition to the "DEV" tag, "*PD" tags must be set for each payment system. These tags make it possible to redefine the properties of a terminal device in a transaction online message according to the corresponding payment system's specification. For example, a POS terminal has a smart card reader and the acquirer is certified to acquire this class of devices in Visa, but for MasterCard it is in the certification phase. In this case, the VPD tag (see the description of the "VPD" tag) will contain information that the POS terminal acquires smart cards, and the MPD tag (see the description of the "MPD" tag) will specify that the POS terminal is a magnetic stripe terminal and does not support smart cards.

If a terminal is a "Cardholder-Activated Terminal" physical device, the "CAT" tab with the appropriate value must be additionally set (see the description of the "CAT" tag.

In H2H interaction, tags set in the source host's WAY4 configuration will have the higher priority than tags of the same name in the target host's WAY4 configuration.

DEV

The "DEV" tag defines device attributes that are recorded in documents for transactions processed by the acquirer and that can be further used in as part of exported clearing information.

The value of the "DEV" tag is generated from subfield values. Subfield value types:

- CHAR – used to specify digits and characters interpreted as a certain property of a device. The "0" value is interpreted as "Unknown", the "N" value as "None".
- HEX – used when a device may have several homogeneous properties. In this case, the value in each bit is interpreted as a certain capability of the device. All zeros in subfield values of this type are interpreted as "Unknown".

Tag value format: DEV:VVXXXXYYYYTCALOQP. The following subfields are used in the value:

Subfield VV

The subfield value defines the version of the tag format used.

Positions in the tag value: 1 – 2.

Type – CHAR (2 characters).

Mandatory subfield. The value "10" is specified.

Subfield XXXX

The subfield value defines the set of "Card data input capability" properties.

Positions in the tag value: 3 – 6.

Type – HEX (4 characters). Each character is a hexadecimal bitmask (bits are numbered from right to left) to determine the presence/absence (1/0) of the properties described below:

- 4th character (6th position in the tag):
  - 1st bit – "Manual, no terminal"
  - 2nd bit – "Magnetic stripe read"
  - 3rd bit – "Bar code"
  - 4th bit – "OCR"
- 3rd character (5th position in the tag):
  - 5th bit – "ICC"
  - 6th bit – "Key entry"
  - 7th bit – "Contactless M/Chip"
  - 8th bit – "Contactless Magnetic stripe"
- 2nd character (4th position in the tag):
  - 1st bit – "3-D Secure";
  - 2nd bit – "Wallet (MasterPass)"
  - 3rd bit – "Reserved"
  - 4th bit – "Reserved"
- 1st character (3rd position in the tag):
  - 5th bit – "Reserved"
  - 6th bit – "Reserved"
  - 7th bit – "Reserved"
  - 8th bit – "Reserved"

Examples of possible subfield values:

- 0000 – "Unknown"
- 0001 – "Manual, no terminal"
- 0002 – "Magnetic stripe read"
- 0010 – "ICC"
- 0020 – "Key entry"
- 0012 – "Magnetic stripe read and ICC"
- 0022 – "Magnetic stripe read and key entry"

- 0032 – "Magnetic stripe read and key entry and ICC"
- 00D2 – "Magnetic stripe read and ICC and contactless M/Chip and contactless Magnetic stripe"
- 00F2 – "Magnetic stripe read and key entry and ICC and contactless M/Chip and contactless Magnetic stripe"

The subfield is mandatory.

Subfield YYYY

The value of the subfield defines the set of "Cardholder authentication capability" properties.

Position in the tag value: 7 – 10.

Type – HEX (4 characters). Each character is a hexadecimal bitmask (bits are numbered from left to right) to determine the presence/absence (1/0) of the properties described below:

- 4th character (10th position in the tag):
  - 1st bit – "None"
  - 2nd bit – "Manual signature verification"
  - 3rd bit – "Electronic signature analysis"
  - 4th bit – "Online PIN (default for simple PIN)"
- 3rd character (9th position in the tag):
  - 5th bit – "(reserved) OffLine PIN clear"
  - 6th bit – "(reserved) Offline PIN encrypted (default for offline PIN)"
  - 7th bit – "(reserved) Offline digitized signature analysis"
  - 8th bit – "(reserved) Offline biometrics"
- 2nd character (8th position in the tag):
  - 1st bit – "(reserved) Other manual verification, e.g. passport or driver's licence"
  - 2nd bit – "(reserved) Offline biographics"
  - 3rd bit – " (reserved) Account based digital signature"
  - 4th bit – " (reserved) Public key based digital signature"
- 1st character (7th position in the tag):
  - 5th bit – "Reserved"
  - 6th bit – "Reserved"
  - 7th bit – "Reserved"
  - 8th bit – "Reserved"

Examples of possible subfield values:

- 0000 – "Unknown"

- 0001 – "None"
- 0002 – "Manual signature verification"
- 0008 – "Online PIN"
- 000A – "Online PIN + Manual signature verification"

The subfield is mandatory.

Subfield T

The value of the subfield defines the "Terminal Type" property.

Position in the tag value: 11.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 1 – "CAT level 1 (ADM)"
- 2 – "CAT level 2 (Self-service terminal)"
- 3 – "CAT level 3 (limited amount terminal)"
- 4 – "CAT level 4 (in flight commerce)"
- 6 – "CAT level 6 (e-commerce)"
- 7 – "CAT level 7 (transponders)"
- 9 – "CAT level 9 (mPOS Acceptance Device)"
- G – "ATM"
- H – "POS"
- N – "None (Manual, Imprinter)"
- 8 – "Reserved"

If a device has several different types of function (for example a terminal supporting payment by bankcard with PIN entry and payment by contactless card with a limit on a transaction amount without PIN entry), the subfield's value must be set to "0" ("Unknown"). In this case, the "Terminal Type" property is determined by a transaction's actual parameters.

The subfield is mandatory.

Subfield C

The value of the subfield defines the "Card capture capability" property.

Position in the tag value: 12.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 1 – "Capture"

- N –"No card capture capability"

Subfield A

The value of the subfield defines the "Attendance indicator" property.

Position in the tag value: 13.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 1 – "Attended terminal"
- 2 – "Unattended terminal"
- N –"No terminal used"

Subfield L

The value of the subfield defines the "Location indicator" property.

Position in the tag value: 14.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 1 – "On premises of card acceptor"
- 2 – "Off premises of card acceptor"
- 3 – "On premises of cardholder"
- 4 – "Off premises of cardholder"
- N –"No terminal used"

Subfield O

The value of the subfield defines the "Card data output capability" property.

Position in the tag value: 15.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 2 – "Magnetic stripe write"
- 3 – "ICC"
- N – "None"

Subfield Q

The value of the subfield defines the "Terminal output capability" property.

Position in the tag value: 16.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 2 – "Printing"
- 3 – "Display"
- 4 – "Printing and display"
- N – "None"

Subfield P

The value of the subfield defines the "PIN capture capability" property.

Positions in the tag value: 17.

Type – CHAR (1 character).

Possible values:

- 0 – "Unknown"
- 4 – "4 char"
- 5 – "5 char"
- 6 – "6 char"
- 7 – "7 char"
- 8 – "8 char"
- 9 – "9 char"
- A – "10 char"
- B – "11 char"
- C – "12 char"
- N – "No PIN capture capability"

MPD

The structure of the "MPD" tag corresponds to the format of ISO message field 61 according to the MasterCard OnLine specification (see "Customer Interface Specification"), but may contain a structure that is not fully filled in (truncated on the right). The static elements DE61.1, DE61.3, DE61.6, DE61.10, DE61.11, DE61.13, DE61.14 may be filled in. All other elements of the structure are not considered and must be filled in with zeros. The tag value must be at least 11 positions.

If an "MPD" tag must be generated with the element DE61.11, all static elements with lower numbers (DE61.1, DE61.3, DE61.6, DE61.10) must also contain correct values.

Example: "MPD:10100100005;"

The value of the "MPD" tag can be modified when processing a transaction. If the value of the global parameter ENABLE_MPD_COUNTRY_CODE is "Y",

the country code received from the terminal is specified in positions 14-16 (DE61.13).

VPD

The structure of the "VPD" tag corresponds to the format of ISO message field 60 according to the Visa BASE specification (see "BASE I Technical Specifications" and "SMS ATM Technical Specifications"), but may contain a structure that is not fully filled in (truncated on the right). The static elements F60.1 and F60.2 are mandatory.

Example: "VPD:05;"

For mPOS devices (Mobile POS) the VPD tag value must correspond to the format "VPD:9x…x;".

Example: "VPD:900008;"

VPC

The "VPC" tag makes it possible to redefine the value of field F3.1 ("Processin Code"); for example, for "Quasi-Cash Transactions" (transfer from a Visa card to another payment system's card or to a digital wallet).

Example: "VPC:11;"

APD

The structure of the "APD" tag corresponds to the format of ISO message field 22 according to AMEX GCAG and AMEX GNS specifications. The following static elements are significant F22.1, F22.2, F22.3, F22.4, F22.10, F22.11, F22.12. Rules for filling in positions in the tag value are the same as for the "MPD" tag.

Example: "APD:100900100110;"

UPD

The structure of the "UPD" tag corresponds to the format of ISO message field 60.2 according to the specification for the UPI online protocol (Union Pay International; see "Technical Specifications on Bankcard Interoperability. Part II Online Message"), but may contain a structure that is not fully filled in (truncated on the right). The following static elements are significant: F60.2.2, F60.2.5. Rules for filling in positions in the tag value are the same as for the "MPD" tag.

Example: "UPD:020003;"

JPD

The structure of the "JPD" tag corresponds to the format of ISO message field 61 ("Point of Service Information") according to JCB online protocol specification (JCB International; see "System Specifications – Online Interface Guide"). Positions 4-6 ("Terminal Located Country Code") are significant.

Example: "JPD:000192;"

CAT

The "CAT" tag defines the terminal type according to the "Cardholder-Activated Terminal Level" (CAT Level) property and may contain values identical to "DEV" tag Subfield T values. If the "DEV" tag is used mainly to define terminal attributes exported in clearing information, the "CAT" tag is important when processing transaction messages online. Therefore, it is mandatory to specify the "CAT" tag in device parameters when registering physical terminals of the corresponding types in WAY4.

If both the "CAT" and "*PD" tags are specified in device type parameters, the value of the "CAT" tag has a higher priority, redefining similar attributes set in "*PD" tag values (for example, the value of the DE61.10 element in the "MPD" tag).

Example: "CAT:2;".