Open Banking (PASS) Standard WEB API

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# Outline

## Purpose

This document is intended for understanding technical requirements for integration development of Open Banking PASS payment provided by Hecto Financial and to define detailed specification

## Target

This document provides API integration specifications, coding guide, and methods to integrate Hecto Financial’s Open Banking PASS payment window,

## API URI

Open Banking API provides the following APIs; each API is mapped to a web service URL.

|  |  |  |  |
| --- | --- | --- | --- |
| **Function** | **API Name** | **URI** | **HTTP Method** |
| Transfer Service | Payment Authentication (UI) | https://ezauth.settlebank.co.kr/pass/re.do | POST |
| Payment Approval (Non-UI) | https://ezauthapi.settlebank.co.kr:8081/APIPayApprov.do | POST |
| Payment Cancellation / Refund (Non-UI) | https://ezauthapi.settlebank.co.kr:8081/APIPayCancel.do | POST |
| Recurring Payment Approval (Non-UI) | https://ezauthapi.settlebank.co.kr:8081/APIRegular  Payment.do | POST |
| Recurring Payment Cancellation (Non-UI) | https://ezauthapi.settlebank.co.kr:8081/APIUnRegistRegular.do | POST |
| Timeout (Non-UI) | https://ezauthapi.settlebank.co.kr:8081/APINetPayCancel.do | POST |
| Inquiry Service | Transaction Result Inquiry | https://ezauthapi.settlebank.co.kr:8081/APIMoInfo.do | POST |
| Transaction Details Inquiry | https://ezauthapi.settlebank.co.kr:8081/APITrInfo.do | POST |

# Open Banking General API

## Open Banking Process

The processes for account registration, management of registered accounts, and etc. are done with Hecto Financial Open Banking’s UI/UX. Therefore, separate API is not provided for account holder name inquiry, ARS authentication, PASS certificate authentication, account registration and others. Also, account cancellation can be done with the PASS Payment on the PASS app, so a separate API is not provided.

The Open Banking Process is as below.

**도식**

1) 5. Through Payment Authentication (UI) request, PASS payment executed

5) 5. With the Payment Authentication (UI) response authentication result., confirm the consistency of response information

6) After confirming the authentication result, request 6. Payment Approval (API) through API

7) 6. Payment Approval (API) responds with payment success / failure Return

## General

The following is a general description of the integration referred to in this document.

* Required fields in the request/response parameters use ‘●’ symbol and selected fields use the ‘○’ symbol.
* Data Type

N: Numeric Characters

A: Alphabetic Characters

AN : Both Alphabetic and Numeric

* Request parameter validation

If there is an error with parameter verification, such as missing required values, inconsistency of hash data to determine forgery and requested variable length check, the following response code is returned.

|  |
| --- |
| {  "resultCd": "-1",  "errCd": "ST09",  "resultMsg": "Invalid request parameter"  } |

# Call API

## API Access Information

API server access information.is as follows.

|  |  |
| --- | --- |
| Environment | URL |
| Testbed | https://tbezauthapi.settlebank.co.kr |
| Production | https://ezauthapi.settlebank.co.kr:8081 |

## Request and Response Headers

API request and response header formats are as follows

|  |  |
| --- | --- |
| Request | Content-type=application/json;charset=UTF-8 |
| Response | https://ezauthapi.settlebank.co.kr:8081 |

## Timeout

The timeout processing of APIs (except UI) applied for 35 seconds. If a timeout occurs in the payment request, the transaction result of the payment can be checked through the API. If the payment is confirmed to be successful, it can be canceled through the network cancellation API,

## Others

The following describes the general requirement for HTTP specification.

* Provided API is REST-oriented, but does not meet the entire specification of REST. (Most transaction requests use POST method only)
* For request use POST method only.
* Commonly, variable values :,&,?,‟,new line, <, > are not allowed.

# Crucial Information Security

## Encryption of Personal Information and Crucial Information

When sending and receiving data, the following encryption should be performed for the person information/crucial information fields.

|  |  |  |  |
| --- | --- | --- | --- |
| **Classification** | **Entry** | **Application** | **Encoding** |
| Personal Information | Algorithm | AES-256/ECB/PKCS5Padding | Hex Encoding |
| Field | The name of the person in charge, phone number, mobile phone number, e-mail, account holder’s name, account number, etc.  (The fields for encryption are specified in the descriptions of the request field specification of each API) | | |

## Encryption Key for Personal Information

For encryption and decryption of personal information and crucial information, key information differs depending on the operation environment and is as follows.

|  |  |
| --- | --- |
| **Classification** | **Encryption Key** |
| Testbed Key | SETTLEBANKISGOODSETTLEBANKISGOOD(32byte) |
| Production Key | Will be provided by separate notice when the service is carried out |

## Forgery Prevention Algorithm

To verify whether the request data is forged or falsified, a hash algorithm is used. The hash value generation algorithm is as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| **Section** | **Entry** | **Application** | **Encoding** |
| Forgery | Algorithm | SHA-256 | Hex Encoding |

## Hash Generation Authentication Key

|  |  |
| --- | --- |
| **Section** | **Authentication Key** |
| Testbed Key | SETTLEBANKISGOODSETTLEBANKISGOOD(32byte) |
| Production Key | Will be provided by separate notice when the service is carried out |

## Hash Generation (Signature) Example

The example of signature generated upon request is as follows.

|  |  |
| --- | --- |
| **Request Field** | |
| mercntId | “settleId” |
| ordNo | “OID201902210001” |
| trDay | “20190221” |
| trTime | “142120” |
| trPrice | “10000” |
| licenseKey | “SETTLEBANKISGOODSETTLEBANKISGOOD” |
| **Value Before Hash Processing ( mid + oid + tr\_date + tr\_time + amt + discount + license\_key )** | |
| “settleId” + “OID201902210001” + “20190221” + “142120” + “10000” + “SETTLEBANKISGOODSETTLEBANKISGOOD” | |
| **Hash Value** | |
| 39bdce0c415089308dbe998644720c6a53abe37475807b075f5623269ef1e28b | |

# Payment Verification (UI)

## Summary

Open Hecto Financial Open Banking payment window UI and transfer the parameters needed for payment. In the corresponding payment window, proceed with mobile phone verification, account holder’s name inquiry, and ARS authentication for account withdrawal transfer registration. After withdrawal transfer registration, payment verification is done with the account, and then respond with the result to the Merchant. (For Merchant, URL with success status is called)

## UI URL

|  |  |
| --- | --- |
| **Classification** | **URL** |
| Testbed | https://tbezauth.settlebank.co.kr/pass/re.do |
| Production | https://ezauth.settlebank.co.kr/pass/re.do |

## Request Form Parameter

The columns requested by Merchant server to Hecto Financial are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| hdInfo | Parameter Information | Parameter information code | AN(50) | ● | “IA\_PASSPAY\_1.0”  ※ Fixed value |
| apiVer | Parameter Version | Parameter version | AN(4) | ● | “1.0”  ※ Fixed value |
| processType | Classification | Process classification | A(1) | ● | “R”  ※ Fixed value |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| ordNo | Order Number | Unique order number generated by the Merchant (For the same transaction date, uniqueness must be ensured) | AN(100) | ● | “OID201902210001” |
| trDay | Transaction Date | Transaction date generated by the Merchant  yyyyMMdd | N(8) | ● | “20190221” |
| trTime | Transaction Time | Transaction time generated by the Merchant  HH24MISS | N(6) | ● | “142120” |
| trPrice | Transaction Amount | AES Encryption  Payment amount  \*Includes the case with container deposit | N(13) | ● | Taxable Amount + Tax-free Amount + VAT Amount = “12800” |
| taxPrice | Taxable Amount | AES Encryption  Only applicable if the tax-free status of the tax amount among the payment amount is a compound tax | N(13) | ○ | “8000” |
| vatPrice | VAT Amount | AES Encryption  Only applicable if the tax-free status of 10% of VAT amount among the payment amount is a compound tax | N(13) | ○ | Taxable Amount’s 10% = “800” |
| dutyFreePrice | Tax-free Amount | AES Encryption  Only applicable if the tax-free status of non-taxable amount among the payment amount is a compound tax | N(13) | ○ | 4000 |
| containerDeposit | Container Deposit Amount | AES Encryption  The amount if the transaction is a target for container deposit  (Not a target for cash receipt) | N(5) | ○ | 300 |
| productNm | Product Name | Product name  URLEncoding UTF-8 | AN(15) | ● | “Cabbage” |
| dutyFreeYn | Tax-free Status | Y: Tax-free,  N: Tax  G: Compound Tax | A(1) | ● | “N” |
| shopNm | Store Name | URLEncoding UTF-8 | AN(10) | ● | “Farm A” |
| custNm | Customer Name | AES Encryption after URLEncoding UTF-8  Customer name | AN(20) | ○ | “Hong Gildong” |
| telcoCd | Mobile Carrier Code | 1: SKT, 2: KT, 3: U+,  4: SKT MVNO,  5: KT MVNO,  6: U+ MVNO | N(1) | ○ | “1” |
| cphoneNo | Mobile Phone Number | AES Encryption  Orderer’s mobile phone number without hyphens | N(11) | ○ | “01032012938” |
| email | Email | AES Encryption  Orderer’s email | AN(30) | ○ | “id@mail.com” |
| passReqOrder | PASS Payment Request Tab Priority  Explanation 1) | 1: QR tab prioritized  2: PUSH tab prioritized (When customer name, mobile carrier, and mobile phone are requested, they are automatically inputted)  \* When called on mobile, it automatically changes to PASS app, but if it is PC, PASS payment request tab order can be changed | A(5) | ○ | Default: “1” (QR Tab prioritized) |
| callbackUrl | Result Notification URL | URL that will be called on the payment window after completing authentication  \*After validating the value that was given as response through callbackUrl, Payment Approval API called  \*When requested through http://, when calling form submit(method=POST) with requested URL, from Chrome browser version 87, http blocking policy is distributed, so the message window ' The information you’re about to submit is not secure' might appear. | AN(255) | ● | "https://callback.co.kr" |
| cancelUrl | Authentication Window Cancel URL | URL that will be called if user cancels while payment is ongoing  \*When requested through http://, when calling form submit(method=POST) with requested URL, from Chrome browser version 87, http blocking policy is distributed, so the message window ' The information you’re about to submit is not secure' might appear. | AN(255) | ● | "https://aaa.co.kr/cancel" |
| mercntParam1 | Merchant Data 1 | Merchant’s additional information 1 (This field is returned when response or transaction detail is inquired) | AN(1000) | ○ |  |
| mercntParam2 | Merchant Data 2 | Merchant’s additional information 2 (This field is returned when response or transaction detail is inquired) | AN(1000) | ○ |  |
| signature | Hash Data | Hash value generated by sha256 method | AN(200) | ● |  |

Explanation 1) passReqOrder (PASS payment request tab priority)

After invoking payment authentication (UI), screen for PASS payment is exposed.

In the case of mobile, with the call of PASS App Scheme, it switches to PASS App right away,

but in the case of PC, there are 2 kinds of payment methods provided for the PASS payment (Pay with QR / Phone number (Push)) as you can see in the screens below.

For the tab, the priority of the tab can be set with passReqOrder (PASS payment request tab priority) parameter upon the request of the merchant.

And upon request, when the customer’s name, mobile carrier, and mobile phone number are sent, they are automatically inputted and exposed on the screen.

사진

## Request Hash Code

|  |  |
| --- | --- |
| **Section** | **Combination Field** |
| Signature value | Merchant ID + Order Number + Transaction Date + Transaction Time + Transaction Amount (Plain Value) + Authentication Key |

## Response Parameter (Hecto Financial -> Merchant)

In the Payment (Registration) window, the columns that respond to the merchant are as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| resultCd | Result Code | Result code (Success / Failure) | N(1) | ● | Success: “0”  Failure: “-1” |
| errCd | Failure Code | Refer to failure code table | AN(5) | ● |  |
| resultMsg | Result Message | Possibility of random change by the server  URLEncoding UTF-8 | AN(200) | ● | “Success” |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| ordNo | Order Number | Unique order number generated by the Merchant (For the same transaction date, uniqueness must be ensured) | AN(100) | ● | “OID201902210001” |
| authNo | Authentication Number | Unique authentication number generated by Hecto Financial | AN(20) | ● | “PAR20190220000000001” |
| trPrice | Transaction Amount | Initial payment amount requested by the Merchant | N(13) | ● | “10000” |
| discntPrice | Discount Amount | Amount deducted by the payment module  (Ex: Promotion pre-discount) | N(13) | ● | “0” |
| payPrice | Payment Amount | Final withdrawal amount with discount from the initial requested payment amount | N(13) | ● | “10000” |
| trDay | Transaction Date | Transaction date generated by the Merchant  yyyyMMdd | N(8) | ● | “20190221” |
| trTime | Transaction Time | Transaction time generated by the Merchant  HH24MISS | N(6) | ● | “142120” |
| mercntParam1 | Merchant Data 1 | Merchant’s additional information 1 (Additional information 1 that was delivered at initial request) | AN(1000) | ○ |  |
| mercntParam2 | Merchant Data 2 | Merchant’s additional information 2 (Additional information 2 that was delivered at initial request) | AN(1000) | ○ |  |

When delivered as callbackUrl, cancelUrl, the following format is delivered.

|  |
| --- |
| resultCd=0&errCd=0021&resultMsg=Success&mercntId=settleId&ordNo=OID201902210001&authNo=PAR20190220000000001  &trPrice=10000&discntPrice=0&payPrice=10000&trDay=20190221&trTime=142120&mercntParam1=&mercntParam2= |

# Payment Approval (API)

## API Summary

If there is no problem after verifying the value received through callbackUrl set on the Payment Authentication Request page, call WEB API.

## API URL

|  |  |
| --- | --- |
| **Classification** | **URL** |
| Testbed | https://tbezauthapi.settlebank.co.kr/APIPayApprov.do |
| Production | https://ezauthapi.settlebank.co.kr:8081/APIPayApprov.do |

## Request (Merchant -> Hecto Financial)

The columns requested by Merchant server from Hecto Financial are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| hdInfo | Parameter Information | Parameter information code | AN(50) | ● | “IA\_PASSPAY\_1.0”  ※ Fixed value |
| apiVer | Parameter Version | Parameter version | AN(4) | ● | “1.0”  ※ Fixed value |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| authNo | Authentication Number | Authentication step response value generated by Hecto Financial | AN(20) | ● | “PAR20190220000000001” |
| reqDay | Request Date | Request date generated by the Merchant when the payment was approved  String Format) yyyyMMdd | N(8) | ● | “20190221” |
| reqTime | Request Time | Request time generated by the Merchant when the payment was approved  String Format) HH24MISS | N(6) | ● | “142120” |
| custParam1 | Merchant Additional Field 1 | In addition to request field defined at the time of approval request, field value 1 defined and saved by Merchant  The value is shown in the response parameter when the transaction is inquired | AN(128) | ○ | “Additional field information”  Can inquire the transaction with the value on Merchant Admin |
| custParam2 | Merchant Additional Field 2 | In addition to request field defined at the time of approval request, field value 2 defined and saved by Merchant  The value is shown in the response parameter when the transaction is inquired | AN(128) | ○ | “Additional field information”  Can inquire the transaction with the value on Merchant Admin |
| custParam3 | Merchant Additional Field 3 | In addition to request field defined at the time of approval request, field value 3 defined and saved by Merchant  The value is shown in the response parameter when the transaction is inquired | AN(128) | ○ | “Additional field information”  Can inquire the transaction with the value on Merchant Admin |
| custParam4 | Merchant Additional Field 4 | In addition to request field defined at the time of approval request, field value 4 defined and saved by Merchant  The value is shown in the response parameter when the transaction is inquired | AN(128) | ○ | “Additional field information” |
| signature | Hash Data | Hash value generated by sha256 method | AN(200) | ● |  |

## Request Hash Code

|  |  |
| --- | --- |
| **Section** | **Combination Field** |
| Signature Value | Merchant ID + Authentication Number + Request Date + Request Time + Authentication Key |

## Response (Hecto Financial -> Merchant)

The response columns from Hecto Financial server to Merchant are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| resultCd | Result Code | Result code  (Success / Failure) | N(1) | ● | Success: “0”  Failure: “-1” |
| errCd | Failure Code | Refer to failure code table | AN(5) | ● | “STFP\_PNPTms00001t00220922182409M1962430” |
| resultMsg | Result Message | Visually identifiable message, can be changed by the server | AN(200) | ● | “Success” |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| ordNo | Order Number | Unique order number generated by Merchant | AN(100) | ● | “OID201902210001” |
| trNo | Transaction Number | Transaction number generated by Hecto Financial | AN(50) | ● | “STFP\_PNPTms00001t00220922182409M1962430” |
| trPrice | Transaction Amount | Initial payment amount requested by the Merchant | N(13) | ● | “10000” |
| discntPrice | Discount Amount | Amount deducted by the payment module (ex: Promotion pre-discount) | N(13) | ● | “0” |
| payPrice | Payment Amount | Final withdrawal amount with discount from the initial requested payment amount | N(13) | ● | “10000” |
| trDay | Transaction Date | Merchant’s initial payment request date  yyyyMMdd | N(8) | ● | “20190221” |
| trTime | Transaction Time | Merchant’s initial payment request time | N(6) | ● | “142120” |

# Payment Cancellation / Refund (API)

## API Summary

A separate WEB API is provided for refund of paid transaction.

## API URL

|  |  |
| --- | --- |
| **Classification** | **URL** |
| Testbed | https://tbezauthapi.settlebank.co.kr/APIPayCancel.do |
| Production | https://ezauthapi.settlebank.co.kr:8081/APIPayCancel.do |

## Request (Merchant -> Hecto Financial)

The columns requested by Merchant server from Hecto Financial are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| hdInfo | Parameter Information | Parameter information code | AN(50) | ● | “IA\_PASSPAY\_1.0”  ※ Fixed value |
| apiVer | Parameter Version | Parameter version | AN(4) | ● | “1.0”  ※ Fixed value |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| oldTrNo | Original Transaction Number | Transaction number delivered by Hecto Financial as a response to payment request | AN(50) | ● | “STFP\_PNPTms00001t00220922182409M1962430” |
| ordNo | Cancellation Order Number | Unique order number generated by the Merchant (For the same transaction date, uniqueness must be ensured) | AN(100) | ● | “OID201902210001”  Order number for cancellation request that is different from the order number generated when the payment was requested |
| cancelPrice | Cancellation Request Amount | AES Encryption  Input number only  Transaction amount or partially cancelled amount  \*If there is container deposit amount, partial cancellation is not allowed | N(13) | ● | “7500” |
| taxPrice | Taxable Amount | AES Encryption  Only applicable if the tax-free status of the tax amount among the payment amount is a compound tax | N(13) | ○ | “5000” |
| vatPrice | VAT Amount | AES Encryption  Only applicable if the tax-free status of 10% of VAT amount among the payment amount is a compound tax | N(13) | ○ | “500” |
| dutyFreePrice | Tax-free Amount | AES Encryption  Only applicable if the tax-free status of non-taxable amount among the payment amount is a compound tax | N(13) | ○ | “2000” |
| reqDay | Request Date | Payment cancellation request date generated by the Merchant  String format) yyyyMMdd | N(8) | ● | “20190221” |
| reqTime | Request Time | Payment cancellation request time generated by the Merchant  String format) HH24MISS | N(6) | ● | “142120” |
| signature | Hash Data | Hash value generated by sha256 method | AN(200) | ● |  |

## Request Hash Code

|  |  |
| --- | --- |
| **Section** | **Combination Field** |
| Signature Value | Merchant ID + Transaction Number + Cancellation Order Number + Cancellation Request Amount (Plain Value) + Request Date + Request Time + Authentication Key |

## Response (Hecto Financial -> Merchant)

The response columns from Hecto Financial server to Merchant are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| resultCd | Result Code | Result code  (Success / Failure) | N(1) | ● | Success: “0”  Failure: “-1” |
| errCd | Failure Code | Refer to failure code table | AN(5) | ● |  |
| resultMsg | Result Message | Visually identifiable message, can be changed by the server | AN(200) | ● | “Success” |
| oldTrNo | Cancellation Original Transaction Number | Cancellation target payment transaction number | AN(50) | ● | “STFP\_PNPTms00001t00220922182409M1962430” |
| trNo | Cancellation Transaction Number | Transaction number generated for cancellation | AN(50) | ● | “STFP\_PNPTms00001t00220921235409M1278129” |
| cancelPrice | Cancellation Amount | Cancelled transaction amount | N(13) | ● | “10000” |
| cancelDay | Cancellation Date | Cancellation date  String format) yyyyMMdd | N(8) | ● | “20190222” |

# Network Cancellation (API)

## API Summary

Regarding transaction with network cancellation by the Merchant after requesting for payment on Open Banking, if the transaction result inquiry API’s response status is successful payment, a function to request cancellation of network is provided in a separate WEB API type.

## API URL

|  |  |
| --- | --- |
| **Classification** | **URL** |
| Testbed | https://tbezauthapi.settlebank.co.kr/APINetPayCancel.do |
| Production | https://ezauthapi.settlebank.co.kr:8081/APINetPayCancel.do |

## Request (Merchant -> Hecto Financial)

The columns requested by Merchant server from Hecto Financial are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| hdInfo | Parameter Information | Parameter information code | AN(50) | ● | “IA\_PASSPAY\_1.0”  ※ Fixed value |
| apiVer | Parameter Version | Parameter version | AN(4) | ● | “1.0”  ※ Fixed value |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| trDay | Transaction Date | Transaction date generated by the merchant | N(8) | ● | “20190221” |
| ordNo | Order Number | Unique order number generated by the Merchant | AN(100) | ● | “OID201902210001” |
| reqDay | Request Date | Transaction inquiry request date generated by the merchant | N(8) | ● | “20190221” |
| reqTime | Request Time | Transaction inquiry request time generated by the merchant | N(6) | ● | “142120” |
| signature | Hash Data | Hash value generated by sha256 method | AN(200) | ● |  |

## Request Hash Code

|  |  |
| --- | --- |
| **Section** | **Combination Field** |
| Signature Value | Merchant ID + Order Number + Transaction Date + Request Date + Request Time + Authentication Key |

## Response (Hecto Financial -> Merchant)

The response columns from Hecto Financial server to Merchant are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| resultCd | Result Code | Result code  (Success / Failure) | N(1) | ● | Success: “0”  Failure: “-1” |
| errCd | Failure code | Refer to failure code table | AN(5) | ● |  |
| resultMsg | Result message | Visually identifiable message, can be changed by the server | AN(200) | ● | “Success” |

# Transaction Result Inquiry (API)

## API Summary

Result inquiry function for transaction is provided in a separate WEB API type.

Its purpose is to check the result of the transaction in which timeout occurred during payment request.

If the timeout transaction’s result is success the transaction should be cancelled using network cancellation API.

## API URL

|  |  |
| --- | --- |
| **Classification** | **URL** |
| Testbed | <https://tbezauthapi.settlebank.co.kr/APIMoInfo.do> |
| Production | <https://ezauthapi.settlebank.co.kr:8081/APIMoInfo.do> |

## Request (Merchant -> Hecto Financial)

The columns requested by Merchant server from Hecto Financial are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| hdInfo | Parameter Information | Parameter information code | AN(50) | ● | “IA\_PASSPAY\_1.0”  ※ Fixed value |
| apiVer | Parameter Version | Parameter version | AN(4) | ● | “1.0”  ※ Fixed value |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| trDay | Transaction Date | Transaction date generated by the Merchant when the order was placed | N(8) | ● | “20190221” |
| ordNo | Order Number | Unique order number generated by the Merchant | AN(100) | ● | “OID201902210001” |
| reqDay | Request Date | Transaction inquiry request date generated by the merchant  String format) yyyyMMdd | N(8) | ● | “20190221” |
| reqTime | Request Time | Transaction inquiry request time generated by the merchant  String format) HH24MISS | N(6) | ● | “142120” |
| signature | Hash Data | Hash value generated by sha256 method | AN(200) | ● |  |

## Request Hash Code

|  |  |
| --- | --- |
| **Section** | **Combination Field** |
| Signature value | Merchant ID + Order Number + Transaction Date + Request Date + Request Time + Authentication Key |

## Response (Hecto Financial -> Merchant)

The response columns from Hecto Financial server to Merchant are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| resultCd | Result Code | Result code  (Success / Failure) | N(1) | ● | Success: “0”  Failure: “-1” |
| errCd | Failure Code | Refer to failure code table | AN(5) | ● |  |
| resultMsg | Result Message | Visually identifiable message, can be changed by the server | AN(200) | ● | “Success” |
| trPrice | Transaction Amount | Initial amount requested for payment by the Merchant | N(13) | ● | “10000” |
| trNo | Transaction Number | Payment transaction number generated by Hecto Financial | AN(50) | ● | “STFP\_PNPTms00001t00220922182409M1962430” |
| trDay | Transaction Date | Merchant’s initial payment request date  String format) yyyyMMdd | N(8) | ● | “20190221” |
| trTime | Transaction Time | Merchant’s initial payment request time  String format) HH24MISS | N(6) | ● | “142120” |

# Transaction Details Inquiry (API)

## API Summary

Information inquiry function for transaction is provided in a separately WEB API format.

## API URL

|  |  |
| --- | --- |
| **Classification** | **URL** |
| Testbed | https://tbezauthapi.settlebank.co.kr/APITrInfo.do |
| Production | https://ezauthapi.settlebank.co.kr:8081/APITrInfo.do |

## Request (Merchant -> Hecto Financial)

The columns requested by Merchant server from Hecto Financial are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| hdInfo | Parameter Information | Parameter information code | AN(50) | ● | “IA\_PASSPAY\_1.0”  ※ Fixed value |
| apiVer | Parameter Version | Parameter version | AN(4) | ● | “1.0”  ※ Fixed value |
| mercntId | Merchant ID | Unique Merchant ID given by Hecto Financial | AN(8) | ● | “settleId” |
| trDay | Transaction Date | Transaction date generated by the Merchant when the order was placed | N(8) | ● | “20190221” |
| ordNo | Order Number | Unique order number generated by the Merchant | AN(100) | ● | “OID201902210001” |
| reqDay | Request Date | Transaction inquiry request date generated by the Merchant  String format) yyyyMMdd | N(8) | ● | “20190221” |
| reqTime | Request Time | Transaction inquiry request time generated by the Merchant  String format) HH24MISS | N(6) | ● | “142120” |
| signature | Hash Data | Hash value generated by sha256 method | AN(200) | ● |  |

## Request Hash Code

|  |  |
| --- | --- |
| **Section** | **Combination Field** |
| Signature Value | Merchant ID + Order Number + Transaction Date + Request Date + Request Time + Authentication Key |

## Response (Hecto Financial -> Merchant)

The response columns from Hecto Financial server to Merchant are defined as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Parameter Name** | **Description** | **Type (Length)** | **Required** | **Example** |
| resultCd | Result Code | Result code  (Success / Failure) | N(1) | ● | Success: “0”  Failure: “-1” |
| errCd | Failure Code | Refer to failure code table | AN(5) | ● |  |
| resultMsg | Result Message | Visually identifiable message, can be changed by the server | AN(200) | ● | “Success” |
| trCnt | Transaction History Number | If there is transaction history, number of transactions | N(4) | ● | “2” |
| trList | Transaction History |  | <object> | ● |  |
| --trStatus | Transaction Status | Transaction success: 0021 or 3010  Transaction failure: 0031  Withdrawal request: 0011  Refund processing: 0051 | AN(4) | ● | “0021” |
| --errCd | Failure Code | Refer to Failure Code table | AN(5) | ● |  |
| --trType | Transaction Classification | Payment: RP,  Cancellation: RT | AN(2) | ● | “RP” |
| --trDay | Transaction Date | String Format) yyyyMMdd | N(8) | ● | “20190221” |
| --trTime | Transaction Time | String Format) HH24MISS | N(6) | ● | “142120” |
| --bankCd | Withdrawal Bank Code | Registered customer’s withdrawal bank code | N(3) | ● | “001” |
| --trPrice | Transaction Amount | Merchant’s payment request amount | N(13) | ● | “1000” |
| --discntPrice | Discount Amount | Amount deducted by the payment module  (ex: Promotion pre-discount) | N(13) | ● | “0” |
| --payPrice | Payment Amount | Final withdrawal amount with discount from the initial requested payment amount | N(13) | ● | “10000” |
| --ordNo | Order Number | Merchant order number | AN(100) | ● | “OID201902210001” |
| --trNo | Transaction Number | Transaction number generated by Hecto Financial | AN(50) | ● | “STFP\_PNPTms00001t00220922182409M1962430” |
| --custParam1 | Merchant Additional Field 1 | In addition to request field defined at the time of approval request, field value 1 defined by Merchant | AN(128) | ○ | “Additional field information” |
| --custParam2 | Merchant Additional Field 2 | In addition to request field defined at the time of approval request, field value 2 defined by Merchant | AN(128) | ○ | “Additional field information” |
| --custParam3 | Merchant Additional Field 3 | In addition to request field defined at the time of approval request, field value 3 defined by Merchant | AN(128) | ○ | “Additional field information” |
| --custParam4 | Merchant Additional Field 4 | In addition to request field defined at the time of approval request, field value 4 defined by Merchant | AN(128) | ○ | “Additional field information” |

# Others

## Failure Code

The rejection code field in the server-side response is described in detail below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **Description** | **Code** | **Description** |
| 1 | Invalid request parameter | 2 | No IP authority |
| 19 | Internal system error | 1103 | Signature error |
| 10001 | Non-existent account | 10002 | Invalid account |
| 10003 | Double withdrawal occurred | 10004 | System error during VAN request |
| 10005 | No VAN response information | 10006 | No transaction number |
| 10007 | Communication disruption | 10008 | Already registered account |
| 10009 | Invalid request parameter | 10010 | Internal system error |
| 10011 | Bank maintenance time | 10012 | Insufficient withdrawal account balance |
| 10013 | No ARS authentication result | 10014 | ARS authentication result values differ |
| 10015 | Automatic transfer cancelled account | 10016 | Withdrawal account limited transaction |
| 10017 | Resident Number / Business Number error | 10018 | Account error (Easy Account registration not allowed) |
| 10019 | Transaction not possible for other reasons | 10020 | Account error |
| 10021 | No receiving account | 10022 | Legally restricted account |
| 10023 | Non-real name account | 10024 | Account holder mismatch |
| 10025 | Already canceled transaction | 10026 | Cancellation amount error |
| 10027 | ARS authentication failure | 10028 | Unable to receive ARS |
| 10029 | Account registration in process | 10030 | Refund in process |
| 10031 | Double transfer occurred | 10032 | Payer name inquiry failure |
| 10033 | Limit per transaction exceeded | 10034 | Daily limit exceeded |
| 10035 | Fraudulent account | 10036 | Disconnected after a certain period of time |
| 10037 | Easy Payment cancellation | 10038 | Request in process |
| 10039 | Refund duplicate request | 10040 | Request getting processed |
| 10041 | Service capacity exceeded | 10042 | System BUSY |
| 10043 | Already registered account | 10044 | Transaction not allowed for this bank |
| 10050 | Duplicate parameter request | 10051 | Already registered cash receipt user |
| 10052 | Unregistered cash receipt user | 10053 | Already canceled account |
| 10060 | Transaction failure | 10061 | Amount limit per transaction exceeded |
| 10062 | Amount limit per day exceeded | 10063 | Amount limit per month exceeded |
| 10064 | Transaction number limit per day exceeded | 10065 | Transaction number limit per month exceeded |
| 10066 | Password registration failure | 10067 | Password mismatch |
| 10068 | Service suspension | 10069 | According to the policy, the selected payment service cannot be used.  Please use another payment method |
| 10070 | According to the policy, the selected payment service cannot be used.  Please contact Hecto Financial customer service. (1600-522) | 10099 | Easy Payment system under maintenance |
| 10100 | Relay institution TIMEOUT |  |  |

## Financial Institution Identifiers

The unique identification codes for financial institutions are as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **Name** | **Code** | **Name** |
| 002 | KDB | 088 | Shinhan Bank |
| 003 | IBK | 089 | Kbank |
| 004 | Kookmin Bank | 090 | Kakao Bank |
| 007 | Suhyup Bank | 209 | Yuanta Securities |
| 011 | Nonghyup Bank | 218 | KB Securities |
| 012 | National Agricultural Cooperative Federation (NACF) | 238 | Mirae Asset Securities |
| 020 | Woori Bank | 240 | Samsung Securities |
| 023 | SC Bank | 243 | Korea Investment & Securities |
| 027 | Citi Bank | 247 | NH Investment & Securities |
| 031 | Daegu Bank | 261 | Kyobo Securities |
| 032 | Busan Bank | 262 | HI Investment & Securities |
| 034 | Kwangju Bank | 263 | Hyundai Motor Securities |
| 035 | Jeju Bank | 264 | Kiwoom Securities |
| 037 | Jeonbuk Bank | 265 | eBest Securities |
| 039 | Kyongnam Bank | 266 | SK Securities |
| 045 | Korea Federation of Community Credit Cooperatives (KFCC) | 267 | Daishin Securities |
| 048 | National Credit Union Federation of Korea (NACUFOK) | 269 | Hanwha Investment & Securities |
| 050 | Korea Federation of Savings Banks (KFSB) | 270 | Hana Financial Investment |
| 054 | HSBC Bank | 278 | Shinhan Financial Investment |
| 055 | Deutsche Bank | 279 | DB Securities |
| 057 | JP Morgan Chase Bank | 280 | Eugene Investment Securities |
| 060 | BOA Bank | 287 | Meritz Securities |
| 062 | Industrial and Commercial Bank of China (ICBC) | 290 | Bookook Securities |
| 064 | National Forestry Cooperative Federation (NFCF) | 291 | Shinyoung Securities |
| 071 | Korea Post | 292 | CAPE Investment & Securities |
| 081 | KEB Hana Bank | 103 | SBI Savings Bank |
| 092 | Toss Bank | 271 | Toss Securities |

## Bank Regular Maintenance Time

The regular maintenance hours for each bank are as follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **Name** | **Bank Maintenance Time** | **Hecto Financial**  **Maintenance Time** | | **Regular Maintenance** |
| **Start** | **End** |
| 002 | KDB | 23:30~00:30 | 23:50 | 00:15 | Every Sunday 00:00~04:00 |
| 003 | IBK | 24:00~00:30 | 23:50 | 00:12 | None |
| 004 | Kookmin Bank | 24:00~00:30 | 23:50 | 00:12 | 3rd week Sunday  00:00~00:30, 05:00~05:30  01:00~06:00 (Intermittent no transaction) |
| 007 | Suhyup Bank | 23:50~00:30 | 23:30 | 00:30 | None |
| 011 | Nonghyup Bank | 24:00~00:30 | 23:50 | 00:12 | 3rd week Monday  00:00~04:00 |
| 020 | Woori Bank | 23:50~00:30 | 23:50 | 00:10 | Every Friday 00:00~00:40,  2nd week Sunday 00:00~06:00 |
| 023 | SC Bank | 23:30~00:30 | 23:50 | 00:12 | None |
| 027 | Citi Bank | 23:40~00:30 | 23:50 | 00:30 | After holiday 00:00~02:00  Every day 00:30~04:30 (Intermittent no transaction) |
| 031 | Daegu Bank | 23:40~00:30 | 23:50 | 00:05 | Saturday at the end of the quarter 00:00~06:00 |
| 032 | Busan Bank | 23:30~00:30 | 23:50 | 00:05 | Monday 00:00~04:00 |
| 034 | Kwangju Bank | 23:40~00:30 | 23:50 | 00:05 | 2nd week Sunday 02:00~06:00 |
| 035 | Jeju Bank | 23:40~00:30 | 23:50 | 00:12 | Monday, Wednesday 04:30~05:00 |
| 037 | Jeonbuk Bank | 24:00~00:30 | 23:50 | 00:05 | 2nd week Saturday 0:00~04:00 |
| 039 | Kyongnam Bank | 23:40~00:30 | 23:50 | 00:05 | 2nd week Sunday 02:00~06:00 |
| 045 | KFCC | 23:50~00:30 | 23:50 | 00:30 | None |
| 048 | NACUFOK | 23:40~00:30 | 23:30 | 00:05 | None |
| 071 | Korea Post | 23:40~00:30 | 23:50 | 00:05 | None |
| 081 | KEB Hana Bank | 23:40~00:30 | 23:50 | 00:15 | None |
| 088 | Shinhan Bank | 23:40~00:30 | 23:50 | 00:05 | Between 00:00~01:00, sequential restart of servers |
| 090 | Kakao Bank | 23:50~00:10 | 23:50 | 00:05 | None |
| 209 | Yuanta Securities | 23:50~00:10 | 23:50 | 00:10 | None |
| 247 | NH Investment & Securities | 00:15~23:50 | 23:50 | 00:05 | None |
| 280 | Eugene Investment & Securities | 23:30~00:30 | 23:50 | 00:35 | None |
| 287 | Meritz Securities | 23:50~00:20 | 23:50 | 00:20 | Every day 23:50~00:20 |