



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

**NPS**

**Message Specification in JSON**

**V2.4**

**Change History**

| Version No. | Revision No. | Description   | Approval Date   |
|-------------|--------------|---|-----------------|
| 1           | 0            | Revamp of the “NETS – NPS API for Acquiring Interface – Publication 1.9.pdf” to support JSON message format only.   | 11 July 2018    |
| 1           | 1            | Updated Transaction payment Query, removed Mandatory check for Txn_identifier.  | 15 October 2018 |
| 1           | 2            | Added verify QR, loyalty redeem and ping apis   | 15 October 2018 |
| 1           | 3            | Updated Loyalty data section<br>Added Loyalty token to payment query<br>Removed mandatory for retrieval_ref in loyalty data for Get Loyalty token request<br>Added exchange rate fields in Verify QR.   | 17 October 2018 |
| 1           | 4            | Updated error codes   | 07 Nov 2018     |
| 1           | 5            | Added transaction status message  | 08 Nov 2018     |
| 1           | 6            | Updated Transaction Type from Ping to Health Check<br>Added new parameter Message<br>Added Message Sample For Health Check  | 09 Nov 2018     |
| 1           | 7            | Added new Response code<br>Updated pay_details length   | 12 Nov 2018     |
| 1           | 8            | Added SOF account id in get loyalty token and transaction status message.<br>Added loyalty fields in transaction status message<br>Condition code added to transaction state message.<br>Removed loyalty data in response for Get token request<br>Minor updates in verify QR.<br>Added sof account id for payment advice, payment request and get loyalty token. | 29 Nov 2018     |
| 1           | 9            | Removed foreign QR fields from verify QR.<br>Transmission time mandatory CI pay advice for UPI QR   | 10 Dec 2018     |
| 2           | 0            | Added loyalty transaction status notification message<br>Added loyalty data list to Transaction status, Transaction search, static notification and order query<br>Changed loyalty data to list and added communication data in Get loyalty token   | 21 Jan 2019     |
| 2           | 1            | Added FX qualification data to transaction status message   | 27 May 2019     |
| 2           | 2            | Add the Settlement amount in FX Qualification data for transaction status message   | 16 Oct 2019     |



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|   |   |   |             |
|---|---|---|-------------|
| 2 | 3 | Add the Foreign Acquirer data for transaction status message  | 20 Nov 2019 |
| 2 | 4 | Add the acq_response_code and transaction_date_time fields in the Foreign Acquirer data for Transaction Status Message. | 5 Dec 2019  |

## Table of Contents

|        |   |    |
|--------|---|----|
| 1      | INTRODUCTION .....  | 7  |
| 2      | Payment Flow .....  | 8  |
| 2.1    | Virtual Terminal Screen Flow.....                         | 8  |
| 2.2    | Order request/response flow (Online Services model) ..... | 9  |
| 2.2.1  | Order Request with Get QR .....                           | 9  |
| 2.2.2  | Order Request with self-generated QR .....                | 10 |
| 2.2.3  | Time Out Scenario.....                                    | 11 |
| 2.3    | Order request/response flow (Terminal model) .....        | 12 |
| 2.4    | Payment reversal flow.....                                | 13 |
| 2.5    | Device Logon .....  | 14 |
| 2.6    | Device Logoff .....                                       | 15 |
| 2.7    | Notification .....  | 16 |
| 3      | API Gateway Interfacing.....                              | 17 |
| 3.1    | URI Locations.....  | 17 |
| 3.2    | Service Paths .....                                       | 17 |
| 4      | Security .....  | 17 |
| 4.1    | Key.....  | 18 |
| 4.2    | Signature Generation.....                                 | 18 |
| 5      | Message Specification.....                                | 20 |
| 5.1    | Transaction Data Format.....                              | 20 |
| 5.2    | Message Field Description .....                           | 21 |
| 5.2.1  | Message Type Identifier.....                              | 21 |
| 5.2.2  | Message Version .....                                     | 21 |
| 5.2.3  | SOF Uri.....  | 21 |
| 5.2.4  | SOF Account Id.....                                       | 21 |
| 5.2.5  | Processing Code.....                                      | 22 |
| 5.2.6  | Transaction Amount .....                                  | 22 |
| 5.2.7  | Transmission Date Time.....                               | 22 |
| 5.2.8  | Systems Trace Audit Number (STAN).....                    | 22 |
| 5.2.9  | Local Transaction Time.....                               | 22 |
| 5.2.10 | Local Transaction Date .....                              | 22 |
| 5.2.11 | Settlement Date .....                                     | 22 |
| 5.2.12 | Capture Date .....  | 22 |

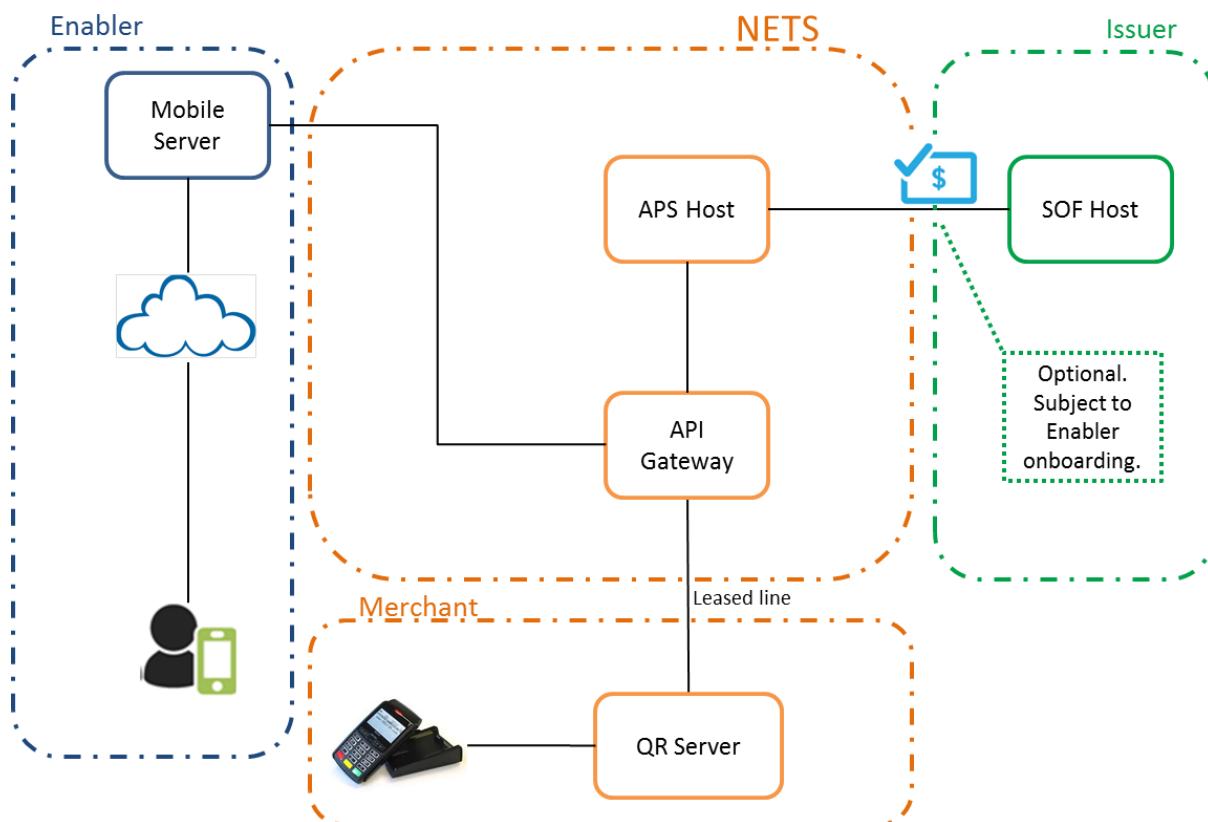
|        |   |    |
|--------|---|----|
| 5.2.13 | Entry Mode.....                                   | 22 |
| 5.2.14 | Condition Code.....                               | 22 |
| 5.2.15 | Acquiring Institution Identification Code .....   | 22 |
| 5.2.16 | Retrieval Reference Number.....                   | 22 |
| 5.2.17 | Original Request Type .....                       | 23 |
| 5.2.18 | Approval Code.....                                | 23 |
| 5.2.19 | Response Code .....                               | 23 |
| 5.2.20 | Card Acceptor Terminal Identification (TID) ..... | 23 |
| 5.2.21 | Card Acceptor Identification Code (MID).....      | 23 |
| 5.2.22 | Merchant Name.....                                | 23 |
| 5.2.23 | Transaction Identifier .....                      | 23 |
| 5.2.24 | NPX Related Data .....                            | 23 |
| 5.2.25 | Loyalty Related Data .....                        | 24 |
| 5.2.26 | Loyalty Token .....                               | 24 |
| 5.2.27 | Invoice Ref .....                                 | 24 |
| 5.2.28 | Transaction Id.....                               | 24 |
| 5.2.29 | Transaction Status .....                          | 24 |
| 5.2.30 | Payment Type Id .....                             | 24 |
| 5.2.31 | User Data .....                                   | 24 |
| 5.2.32 | QR Code .....                                     | 24 |
| 5.2.33 | Communication Data .....                          | 24 |
| 5.2.34 | Verification Details .....                        | 24 |
| 5.2.35 | Settlement Data .....                             | 24 |
| 6      | Message Specification.....                        | 25 |
| 6.1    | Order .....                                       | 25 |
| 6.2    | Reversal .....                                    | 25 |
| 6.3    | Order Query.....                                  | 28 |
| 6.4    | Device Logon .....                                | 30 |
| 6.5    | Device Logoff .....                               | 31 |
| 6.6    | Transaction Search .....                          | 32 |
| 6.7    | Notification .....                                | 34 |
| 6.8    | Transaction Status Message .....                  | 36 |
| 6.9    | Order Refund.....                                 | 39 |
| 6.10   | Payment Advice (Consumer Initiated) .....         | 41 |
| 6.11   | Payment Request (Consumer Initiated) .....        | 42 |
| 6.12   | Payment Advice Issuer (Consumer Initiated) .....  | 43 |



|       |   |    |
|-------|---|----|
| 6.13  | Payment Request Issuer (Consumer Initiated) | 44 |
| 6.14  | DCC Qualification Request                   | 46 |
| 6.15  | Payment Advice (Order)                      | 48 |
| 6.16  | Payment Request (Order)                     | 50 |
| 6.17  | Payment Transaction Query                   | 51 |
| 6.18  | QR Query                                    | 53 |
| 6.19  | Health Check                                | 54 |
| 6.20  | Get Loyalty Token                           | 54 |
| 6.21  | Loyalty Transaction status notification     | 55 |
| 6.22  | Terminal Batch Close                        | 57 |
| 7     | Addendum                                    | 2  |
| 7.1   | NPX Data                                    | 2  |
| 7.1.1 | NPX Data Field Descriptions                 | 2  |
| 7.1.2 | NPX Data Details for Request                | 4  |
| 7.1.3 | NPX Data Details for Response               | 0  |
| 7.2   | Communication Data                          | 1  |
| 7.3   | Verification Data                           | 2  |
| 7.4   | Loyalty Data Details                        | 3  |
| 7.4.1 | Loyalty Data Field Descriptions             | 3  |
| 7.4.2 | Post-authorized Loyalty                     | 3  |
| 7.5   | Condition Codes                             | 4  |
| 7.6   | Response Codes from NPS                     | 5  |
| 7.7   | Response Codes from API Gateway             | 7  |
| 7.8   | Message Samples                             | 9  |
| 7.8.1 | Order (with NPS generated QR)               | 9  |
| 7.8.2 | Order (self generated NPS QR)               | 11 |
| 7.8.3 | Order Reversal                              | 12 |
| 7.8.4 | Order Enquiry                               | 13 |
| 7.8.5 | Notification                                | 14 |
| 7.8.6 | Logon                                       | 15 |
| 7.8.7 | Transaction search                          | 16 |
| 7.8.8 | Terminal batch close                        | 16 |
| 7.8.9 | Health Check                                | 17 |

## 1 INTRODUCTION

This document defines the acquiring interface specifications provided for the integration with NETS Alternate Payment Service.



## 2 Payment Flow


### 2.1 Virtual Terminal Screen Flow

Merchants could enter amount to generate QR


Amount
120

PAYMENT
QUICK LIST
PROMO

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| . | 0 | + |


GENERATE QR

Amount
120



DONE

or prerecord each SKU with price and charges required prior to accept payment.

Atom
9:41 AM
100%

PRODUCTS

• Breakfast •

|                       |        |   |
|-----------------------|--------|---|
| Chocolate Muffin      | \$4.00 | + |
| Plain Bagel           | \$2.00 |   |
| Salted Caramel Square | \$3.50 |   |
| Classic Menu          | \$9.50 |   |
| Red Berry Danish      | \$3.80 |   |
| Chocolate Croissant   | \$3.50 |   |
| Omelette              | \$6.50 |   |
| Morning Salad         | \$7.00 |   |

Summary

No.11 by Espresso Lab

No.11, Jalan PJU 3/41, Sunway Damansara,  
47810 Petaling Jaya.  
\*close at 8 PM

3:30 pm

Egg Toast x 1
+ Smoked Salmon

Rm 17.00
Rm 7.00

Dog Food x 1
+ American Pie

Rm 17.00
Rm 7.00

Subtotal
Taxes
Service Fee (6%)

Rm 48.00
Rm 0.00
RM 2.88

Total
Rm 50.88

GENERATE QR

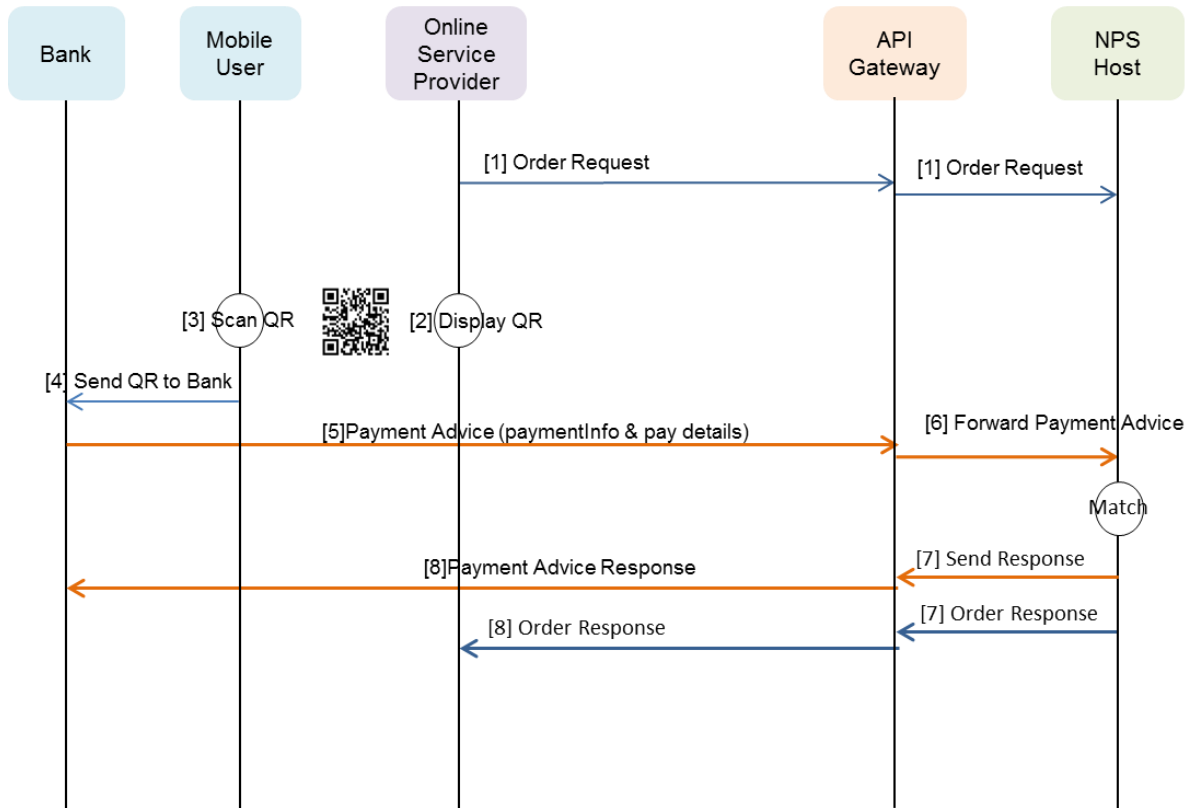


## 2.2 Order request/response flow (Online Services model)

### 2.2.1 Order Request with Get QR

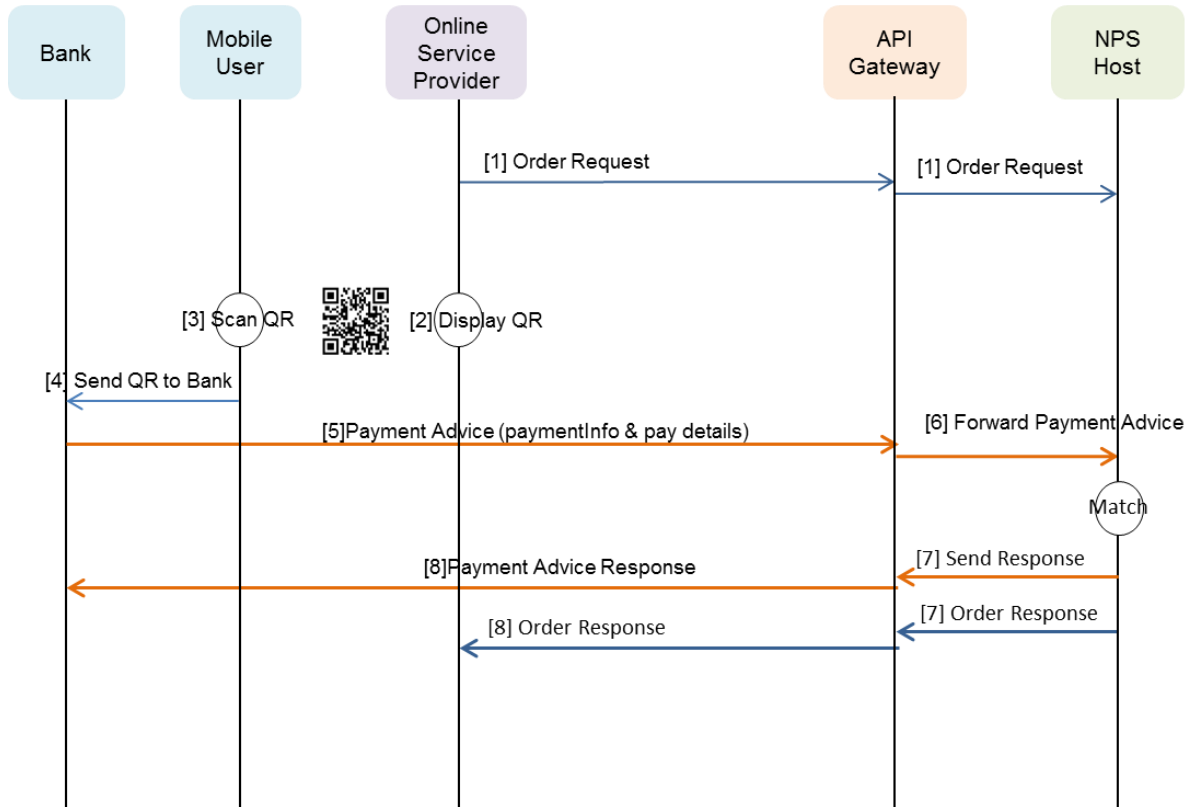
The high-level payment flow is as shown below.

With this flow, it is important that the Online Service Provider is able to listen for the 2<sup>nd</sup> leg of the Order Response.



| Step | Description   |
|------|---|
| 1    | The Online Service Provider sends an Order request (Get QR) to NPS Host via NETS API Gateway.   |
| 2    | The NPS Host generates an Order and responds back with the QR code.   |
| 3    | User scans the QR code using a mobile client.<br>The mobile client sends a payment request to its mobile server/bank.   |
| 4    | The mobile server/bank does its own business logic processing which include getting the necessary source of fund.<br>The mobile server/bank then sends Payment Advice Request to NPS via NETS API Gateway.<br>NPS processes the request and sends a response back for the Payment Advice and the Order. |

### 2.2.2 Order Request with self-generated QR

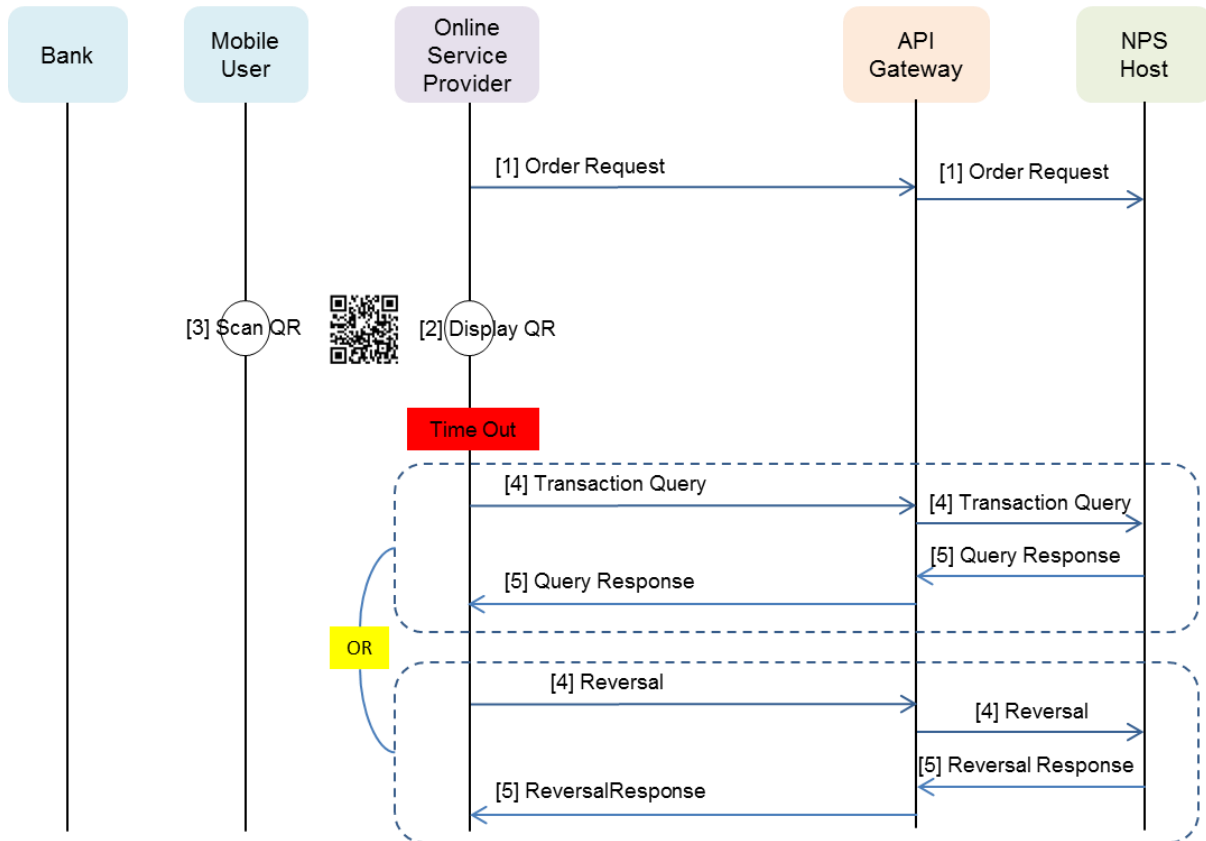


| Step | Description  |
|------|--|
| 1    | The Online Service Provider self generates a QR and sends an Order request to NPS Host via NETS API Gateway.   |
| 2    | The Online Service Provider displays the QR.   |
| 3    | User scans the QR code using a mobile client.<br>The mobile client sends a payment request to its mobile server/bank.  |
| 4    | The mobile server/bank does its own business logic processing which include getting the necessary source of fund.<br>The mobile server then sends Payment Advice Request to NPS via NETS API Gateway.<br>NPS process the request and send a response back for the Payment Advice and the Order . |

### 2.2.3 Time Out Scenario

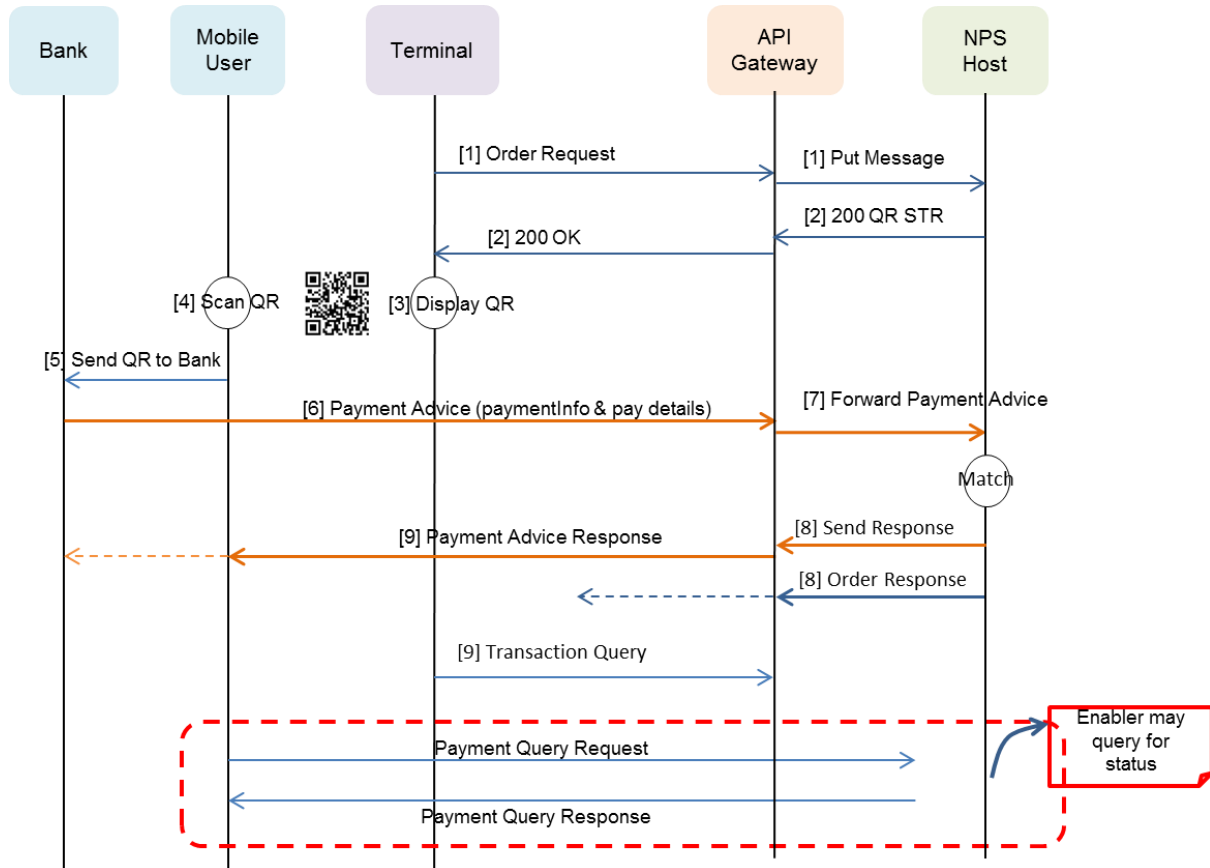
In the event of sending an Order Request and a time out occurs while waiting for the Order Response, the Online Service Provider can do:

- Transaction Query to find out the status of the Order Request.
- Or a Reversal. If there is a matched Payment Advice to the Order, the reversal is sent to the Bank/Mobile Server to reverse/refund the User.



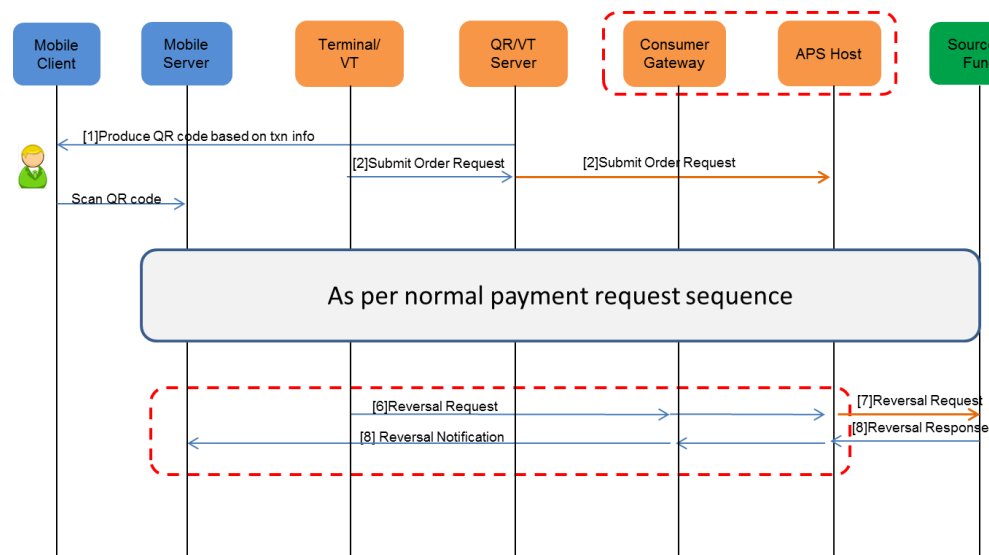
### 2.3 Order request/response flow (Terminal model)

The high-level payment flow is as shown below.



| Step | Description  |
|------|--|
| 1    | The Terminal requests for a QR code from the NPS Host via NETS API Gateway.  |
| 2    | The NPS Host generates an Order and responds back with the QR code.  |
| 3    | User scans the QR code using a mobile client.<br>The mobile client sends a payment request to its mobile server.   |
| 4    | The mobile server does its own business logic processing which include getting the necessary source of fund.<br>The mobile server then sends Payment Advice Request to NPS via NETS API Gateway with positive response '00' or negative response '05'.<br>NPS process the request and send a response back for the Payment Advice and the Order. |
| 5    | Terminal can send a Transaction Query if it does not support callback and unable to receive the Order Response.  |

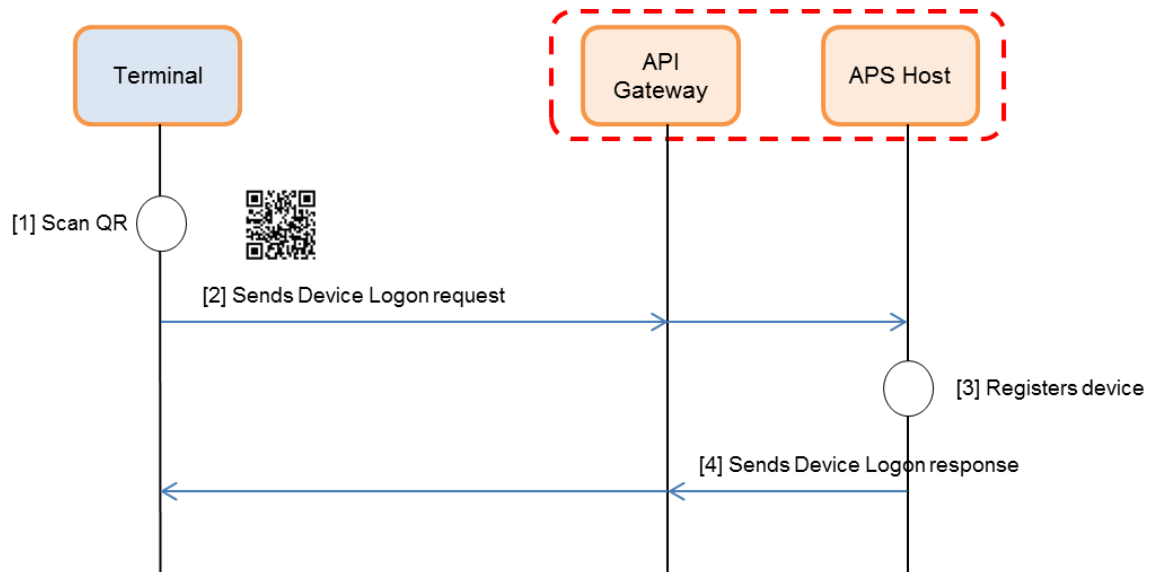
## 2.4 *Payment reversal flow*



| Step | Description  |
|------|--|
| 1-5  | As per normal payment sequence, i.e. transaction is approved.  |
| 6    | <p>The Terminal/VT or QR/VT server may initiate a reversal because the transaction cannot be completed due to unable to connect to the Terminal/VT.</p> <p>The QR/VT server sends a reversal to NPS.</p> <p>Reversal can be sent after 5 minutes from the Order.</p> |
| 7    | NPS send the reversal request to the issuing host.   |
| 8    | NPS informs mobile server of the event.  |

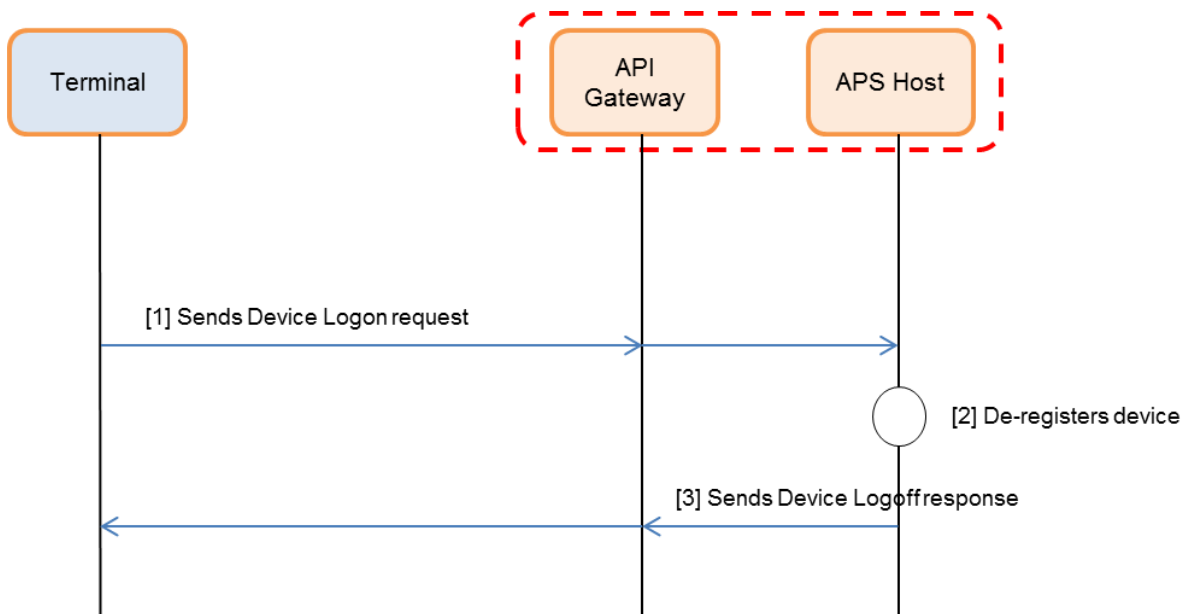
## 2.5 Device Logon

This flow is applicable for Static QR Code only.



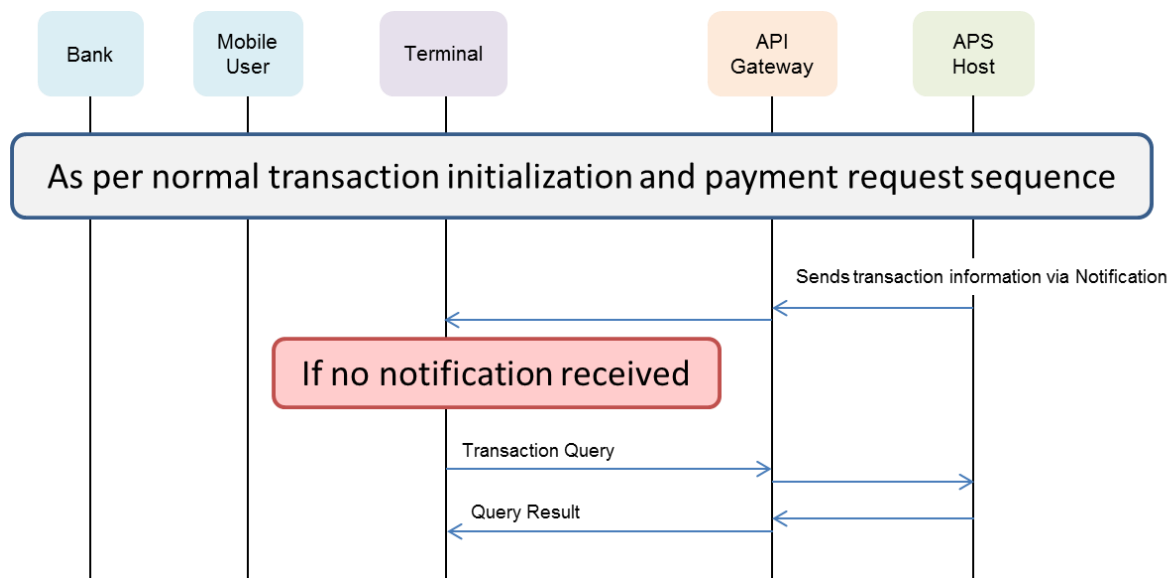
| Step | Description  |
|------|--|
| 1    | Merchant scans his Static QR Code.                       |
| 2    | The Terminal/VT will send the Device Logon transaction.  |
| 3    | NPS validates and registers device's communication data. |
| 4    | NPS returns the result of the Device Logon operation.    |

## 2.6 Device Logoff



| Step | Description   |
|------|---|
| 1    | The Terminal/VT will send the Device Logoff transaction.    |
| 2    | NPS validates and de-registers device's communication data. |
| 3    | NPS returns the result of the Device Logoff operation.      |

## 2.7 Notification



Notification is an API available internally to NETS only.

Notification is initiated by NPS, only if the Order Request contains Communication Data, or if the Device is registered to NPS with Communication Data.

If notification is not received, the Terminal/VT can send a Transaction Query.



### 3 API Gateway Interfacing

Interfacing to the NETS Alternate Payment Service is via RESTful APIs.

Append the URL Location with the Service Path to interface to the required service.

For example:

*https://api.nets.com.sg/merchantservices/v1/order/request.*

#### 3.1 URI Locations

|                   |   |
|-------------------|---|
| <b>SIT</b>        | https://uat-api.nets.com.sg:9065/sit/merchantservices |
| <b>UAT</b>        | https://uat-api.nets.com.sg:9065/uat/merchantservices |
| <b>Production</b> | https://api.nets.com.sg/merchantservices              |

#### 3.2 Service Paths

##### For generic merchant services

|                                 |                                       |
|---------------------------------|---------------------------------------|
| <b>Order Request</b>            | /v1/order/request                     |
| <b>Transaction Query</b>        | /v1/transaction/query                 |
| <b>Order Reversal</b>           | /v1/transaction/reversal              |
| <b>Device Logon</b>             | /v1/device/logon                      |
| <b>Transaction Search</b>       | /v1/transaction/search                |
| <b>Transaction Notification</b> | /internal/v1/transaction/notification |
| <b>Refund</b>                   | /v1/transaction/refund                |

##### For Dynamic QR Codes

|                          |                                     |
|--------------------------|-------------------------------------|
| <b>Order Request</b>     | /qr/dynamic/v1/order/request        |
| <b>Transaction Query</b> | /qr/dynamic /v1/transaction/query   |
| <b>Order Reversal</b>    | /qr/dynamic/v1/transaction/reversal |

##### Sample HTTP message

POST /repo/uat/merchantservices/v1/transaction/search HTTP/1.1

KeyId: 8bc63cde-2647-4a78-ac75-d5f534b56047

Sign: CUBLNXq08qXlib1SXg5MfRmc/hdPX/1Zwhcjru3QYFk=

Content-Type: application/json

```
{
  "mti": "0200",
  "process_code": "990000",
  "amount": "000000000123",
  "stan": "100001",
  "transaction_time": "180647",
  "transaction_date": "0313",
  "entry_mode": "000",
  "condition_code": "85",
  "institution_code": "20000000001",
  "host_tid": "99998888",
  "host_mid": "12345678912",
  "npx_data": {
    "E103": "99998888",
    "E201": "00000123",
    "E202": "SGD"
  },
  "communication_data": {
    "type": "http",
    "category": "URL",
    "destination": "https://your-domain-name:8801/demo/order/notification",
    "addon": {
      "external_API_keyID": "8bc63cde-2647-4a78-ac75-d5f534b56047"
    }
  },
  "getQRCode": "Y"
}
```

NETS validate the API Key ID, and perform following steps.

- Compute signature and compare and pass clear JSON message downstream for processing

### 4 Security

The transport security is based on HTTP SSL TLS 1.2. In addition, the application data are further encrypted as described in the subsequent sections.

#### 4.1 *Key*

The following key pair is required

- API Key ID: This is a random string that is generated by NETS to the Merchant System. This key shall be provided in the clear as part of HTTP header.
- API secret: This is a 36 character shared secret between NETS and the Merchant System. This secret shall be used as input as part of signature generation. This secret should not be exposed to anyone.

There will be different API Key IDs assigned for:

- Merchant System/Application to API Gateway
- NPS to API Gateway

#### 4.2 *Signature Generation*

Signature is generated using SHA-256 over the concatenation of the whole message payload with the shared secret key value. SHA-256 is then applied to the resulting string.

Using the example for request as below,

```
{
  "mti": "0200",
  "process_code": "990000",
  "amount": "000000000123",
  "stan": "100001",
  "transaction_time": "180647",
  "transaction_date": "0313",
  "entry_mode": "000",
  "condition_code": "85",
  "institution_code": "20000000001",
  "host_tid": "99998888",
  "host_mid": "12345678912",
  "npx_data": {
    "E103": "99998888",
    "E201": "00000123",
    "E202": "SGD"
  },
  "communication_data": [{
    "type": "http",
    "category": "URL",
    "destination": "https://your-domain-name:8801/demo/order/notification",
    "addon": {
      "external_API_keyID": "8bc63cde-2647-4a78-ac75-d5f534b56047"
    }
  }],
  "getQRCode": "Y"
}
```

Assuming the shared secret key value is 0123456789ABCDEF0123456789ABCDEF0123456789ABCDEF



Concatenate the shared secret key value resulting in the string as

```
{"mti":"0200","process_code":"990000","amount":"000000000123","stan":"100001","transaction_time":"180647","transaction_date":"0313","entry_mode":"000","condition_code":"85","institution_code":"20000000001","host_tid":"99998888","host_mid":"12345678912","npx_data":{"E103":"99998888","E201":"00000123","E202":"SGD"},"communication_data":{"type":"http","category":"URL","destination":"https://your-domain-name:8801/demo/order/notification","addon":{"external_API_keyID":"8bc63cde-2647-4a78-ac75-d5f534b56047"}}},"getQRCode":"Y"}0123456789ABCDEF0123456789ABCDEF0123456789ABCDEF
```

Apply SHA-256 on the above string yield the following hash value

```
a5f1ed3db764559e427d458fa94e2f5970b59d7fd2efb03eba2b003c44454fd7
```

The last step is to apply base64 encoding yield the below

```
YTVmMWVvM2RiNzY0NTU5ZTQyN2Q0NTNmYTk0ZTJmNTk3MGI1OWQ3ZmQyZWZiMDNIYmEyYjAwM2M0NDQ1NGZkNw==
```

## 5 Message Specification

### 5.1 Transaction Data Format

The Attribute lists the format and size of the data element. The size of the field is the number of data elements contained in the field. Variable length fields are shown with preceding "...". Characters indicate the number of variable length digits. (...999 define a field that maximum length is 999 data elements.) The following table defines each attribute.

| Attribute | Meaning  |
|-----------|--|
| a         | <b>Alpha characters (a-z, A-Z)</b><br>Each data element represents 1 byte  |
| an        | <b>Alpha-numeric characters (1-9, a-z, A-Z)</b><br>Each data element represents 1 byte                                     |
| ans       | <b>Alpha-number and special characters (All characters)</b><br>Each data element represents 1 byte                         |
| b         | <b>Binary data</b><br>Each data element represents 1 bit. (8 data elements = 1 byte)                                       |
| n         | <b>Numeric data</b><br>Each data element represents 1 nibble (2 data elements = 1 byte)                                    |
| ns        | <b>Numeric and special characters</b><br>Each data element represent 1 byte  |
| z         | <b>Track 2 data, as read from the magnetic stripe.</b><br>Each data element represents 1 nibble (2 data elements = 1 byte) |
| ..        | A 2-digit prefix for variable length field (LLVAR)   |
| ...       | A 3-digit prefix for variable length field (LLLVAR)  |

The 'Request' and 'Response' columns show the contents of the terminal request and response messages comprising a transaction. These contents can be one of the following:

|     |  |
|-----|--|
| M   | Mandatory  |
| O   | Optional   |
| E   | Echo   |
| Cxx | Conditional field, where xx is:  |
| 01  | The primary account number is included when the transaction is entered manually via the keyboard.  |
| 02  | The expiration date field will be included if the card number was entered manually, and the card processing options are set to accept a date, expiration to be entered.      |
| 03  | For on-line transactions when the account number is read from the magnetic stripe reader track I and/or Track II will be included.   |
| 04  | Terminal only stores the primary account number and expiration date from a track read. Any transactions processed other than an on-line transaction will include the primary |

|    |   |
|----|---|
|    | account number and expiration date.   |
| 05 | The first two digits of the POS entry mode will be set to '02' if the card is read by the card reader, and '01' if the card number is entered via the keyboard. The last digit will indicate the PIN entry capability of the terminal. It will have a value of '1' if there is PIN entry capability, and '2' if there is no PIN entry capability. This information should be treated as additional transaction information, and not used to determine which field to use for the card number. |
| 06 | Some check guarantee services use primary account numbers for data. If account number is entered manually the bit 2 will be included in the request. If the account number is read via the magnetic card reader then either track I and/or track II will be included.   |
| 07 | Card Type Name to be sent only during special BIN overlapping cases.<br>Use it for CUP (China Union Pay) card transactions  |
| 08 | Valid for Card-Present Payment Types.   |
| 09 | Valid for Alternative Payment Types. Eg. QR Code.   |
| 10 | Valid for Host-To-Host interfacing.   |
| 11 | Applicable when original transaction is found.  |
| 12 | Applicable only when payment request is received  |
| 13 | Applicable to terminal request  |
| 14 | Applicable for inquiry on success transaction like tip adjust, sale complete  |

## 5.2 *Message Field Description*

### 5.2.1 *Message Type Identifier*

Message Type Identifier indicates the type of the message.

### 5.2.2 *Message Version*

Message version indicates the version of the message API that caller is using for the current request. Message version is needed in order to maintain backward compatibility and support graceful upgrade.

### 5.2.3 *SOF Uri*

This field contains the string identifier for alternative Source of Funds.

### 5.2.4 *SOF Account Id*

SOF Account Id is the consumer wallet identifier. With SOF Account Id wallet will be able to locate the end user who has performed this transaction.

**5.2.5 Processing Code**

The processing code is used with the message type identifier to define the type of transaction sent by the point of service device.

**5.2.6 Transaction Amount**

This field is the total transaction amount requested by the consumer in the local currency of the transaction originator. The value is right justified with the currency's minor unit and excluding the decimal point.

For example, SGD\$1 will be represented as "100".

**5.2.7 Transmission Date Time**

This field indicates the date and time by the transaction was sent by the terminal or host

Field value format is "MMDDhhmmss".

**5.2.8 Systems Trace Audit Number (STAN)**

A 6-digit number assigned by a transaction originator that provides a unique identifier for a message under a MID and TID. The trace number remains unchanged for life of the transaction. This number should be unique within a settlement cycle.

Value must be starting from "000001" and limited to "999999", front padded with zeros.

**5.2.9 Local Transaction Time**

This is the local time at which the transaction takes place at the point of card acceptor location.

Field value format is "hhmmss".

**5.2.10 Local Transaction Date**

This is the local month and day on which the transaction takes place at the point of card acceptor location.

Field value format is "MMDD".

**5.2.11 Settlement Date**

This field contains the date for the financial settlement of the transaction.

Field value format is "MMDD".

**5.2.12 Capture Date**

This field contains the date for the capture of the transaction by the acquiring bank/scheme.

Field value format is "MMDD".

**5.2.13 Entry Mode**

This field is used to indicate how the payment was entered.

**5.2.14 Condition Code**

Indicates the method by which the transaction was entered into the interchange. This field is present in all financial request, advice, and reversal messages. It indicates the type of device and the conditions where the transaction originated.

**5.2.15 Acquiring Institution Identification Code**

See NPS\_Message\_Spec\_Suplmt\_ACQ\_INST\_CODE document for the values assigned.

**5.2.16 Retrieval Reference Number**

This field will contain a 12 character reference number generated by the host. This number will be used to reference a transaction for further processing.

#### 5.2.17 *Original Request Type*

This field indicates the original transaction type being referred to for a query.

Valid value includes:

- order
- refund

#### 5.2.18 *Approval Code*

This field is the six-position approval response code that is assigned by the Issuer or stand-in source.

#### 5.2.19 *Response Code*

This field indicates the status of the request.

#### 5.2.20 *Card Acceptor Terminal Identification (TID)*

This field identifies a terminal at the merchant location where the transaction originates, or the terminal id assigned by Acquirer or Host.

#### 5.2.21 *Card Acceptor Identification Code (MID)*

This is the 10-digit merchant identifier number as provided by Acquirer or Host, e.g., "1231234567". Extra characters will be padded '0' on the left.

#### 5.2.22 *Merchant Name*

The merchant name registered with NETS.

#### 5.2.23 *Transaction Identifier*

This field contains data that uniquely identifies a transaction.

In the case of a QR Code payment, it contains the QR Code details.

#### 5.2.24 *NPX Related Data*

This field contains extended information required by NPX gateway.

In JSON format, the tags are subfields. For example:

```
"npx_data"{
  "E101": "username",
  "E102": "password23",
  "E103": "12345678",
  "E501": "201012031526",
  "F209": "Receipt Header 1",
  "F210": "Receipt Header 2",
  "F211": "Receipt Header 3",
  "F212": "Receipt Header "
}
```

The field requirements are further elaborated in each transaction message format in subsequent sections.



**5.2.25 Loyalty Related Data**

This field contains Loyalty information.

**5.2.26 Loyalty Token**

This field indicates the token passed after successful loyalty upload request.

**5.2.27 Invoice Ref**

This field contains the 16-digit Invoice Reference.  
Invoice Reference must be unique under the same MID and TID.

**5.2.28 Transaction Id**

This field contains the identifier of the transaction logged on NPS.

**5.2.29 Transaction Status**

This field contains the code of the transaction status logged on NPS.

**5.2.30 Payment Type Id**

This field contains the code representation of the payment type used to fulfill a transaction.

**5.2.31 User Data**

This field contains information pertaining to user, in pipe-delimited format.

**5.2.32 QR Code**

This field contains the QR Code image in PNG format, base64 encoded.

**5.2.33 Communication Data**

This field contains communication specific details for notification.

**5.2.34 Verification Details**

This field contains the destination details for sending verification data. For example, an One-Time-Password is returned to the merchant for next step verification.

**5.2.35 Settlement Data**

This field contains all the related to settlement summary for the purpose of reconciling against terminal receipt.



## 6 Message Specification

Messages are in JSON format.

Note: Implement JSON with loose parsing (don't use strict mode) to allow compatibility with future changes.

### 6.1 Reversal

Reversal is the transaction to cancel the original order in case of communication failure or delay in getting the order completed.

| JSON Field ID     | Field Name                                | Field Type  | Req  | Resp | Comments  |
|-------------------|---|-------------|------|------|---|
| mti               | Message Type Identifier                   | Numeric(4)  | 0400 | 0410 |   |
| process_code      | Processing Code                           | Numeric(6)  | M    | M    | Same as original transaction.   |
| message_version   | Message version                           | Numeric(2)  | C    |      | Default version is 00. Mandatory for other versions.  |
| amount            | Amount, Transaction                       | Numeric(12) | M    | O    | Same as original transaction.   |
| transmission_time | Transmission Date Time                    | Numeric(10) | O    |      | MMDDhhmmss.   |
| stan              | System Audit Trace Number                 | Numeric(6)  | M    | M    | Same as original transaction. Echoed back in response.  |
| transaction_time  | Time, Local Transaction                   | Numeric(6)  | M    | M    | hhmmss. Echoed back in response.  |
| transaction_date  | Date, Local Transaction                   | Numeric(4)  | M    | M    | MMDD. Echoed back in response.  |
| entry_mode        | POS Entry Mode                            | Numeric(3)  | M    | M    | Coded as 000. Echoed back in response.  |
| condition_code    | POS Condition Code                        | Numeric(2)  | M    | M    | See Addendum Condition Codes.   |
| institution_code  | Acquiring Institution Identification Code | Numeric(11) | M    | M    | Assigned by NETS. Echoed back in response.  |
| retrieval_ref     | Retrieval Reference Number                | String(12)  | O    | O    | Unique payment identifier to identify this payment request. Echoed back in response.                          |
| response_code     | Response Code                             | String(2)   |      | M    | If "00" then approved, If "68" then transaction not found with original STAN or with Original Data, can skip. |
| host_tid          | Card Acceptor Terminal Identification     | String(8)   | M    | M    | Assigned by NETS :pass-through  |
| host_mid          | Card Acceptor Identification Code         | String(15)  | M    | M    | Assigned by NETS :pass-through  |



|                |                        |             |   |   |  |
|----------------|------------------------|-------------|---|---|--|
| txn_identifier | Transaction Identifier | String(170) | C | O | QR code string                                 |
| npx_data       | NPX Data               | Map         | M | M | See addendum NPX Data.                         |
| invoice_ref    | Invoice / ECR Ref #    | String(16)  | O | O | Invoice reference.<br>Echoed back in response. |
| user_data      | User Data              | String(150) | O |   | User metadata with separator “ ”.              |

## 6.2 Order

An Order is a transaction type that is pending a matching Payment Advice or Payment Request.

| JSON Field ID     | Field Name                                | Field Type  | Req    | Resp   | Comments  |
|-------------------|---|-------------|--------|--------|---|
| mti               | Message Type Identifier                   | Numeric (4) | 0200   | 0210   |   |
| process_code      | Processing Code                           | Numeric(6)  | 990000 | 990000 |   |
| message_version   | Message version                           | Numeric(2)  | C      |        | Default version is 00.<br>Mandatory for other versions.             |
| amount            | Amount, Transaction                       | Numeric(12) | M      | M      |   |
| transmission_time | Transmission Date Time                    | Numeric(10) | O      |        | MMDDhhmmss  |
| stan              | System Audit Trace Number                 | Numeric(6)  | M      | M      | Echoed back in response.  |
| transaction_time  | Time, Local Transaction                   | Numeric(6)  | M      | M      | hhmmss<br>Echoed back in response.                                  |
| transaction_date  | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD<br>Echoed back in response.                                    |
| entry_mode        | Contact, Contactless or QR                | Numeric(3)  | M      | M      | Coded as 000.<br>Echoed back in response.                           |
| condition_code    | EFTPOS or eCommerce                       | Numeric(2)  | M      | M      | See Addendum Condition Codes.<br>Echoed back in response.           |
| institution_code  | Acquiring institution identification code | Numeric(11) | M      | M      | Assigned by NETS.<br>Echoed back in response.                       |
| retrieval_ref     | Retrieval Reference Number                | String(12)  | O      | O      | Unique payment identifier to identify this payment request.         |
| approval_code     | Authorization Id Response                 | String(6)   |        | O      | Echo of the same parameter from the matched payment advice/request. |



|                    |                                       |               |   |   |  |
|--------------------|---------------------------------------|---------------|---|---|--|
| response_code      | Response Code                         | String(2)     |   | M | The response status from NPS.  |
| host_tid           | Card Acceptor Terminal Identification | String(8)     | M | M | Assigned by NETS :pass-through   |
| host_mid           | Card Acceptor Identification Code     | String(15)    | M |   | Assigned by NETS :pass-through   |
| acceptor_name      | Merchant Name                         | String(40)    | O | O | Assigned by NETS.  |
| txn_identifier     | Transaction Identifier                | String(170)   | C | M | QR code string.  |
| npx_data           | NPX Data                              | Map           | M | M | NPS additional information required.   |
| loyalty_data       | Loyalty Data                          | list of Map   |   | O | For loyalty related data. Parameter from the matched payment advice/request.   |
| invoice_ref        | Invoice / ECR Ref #                   | String(16)    | O | O | Invoice reference. Allows until 20 characters but more than 16 characters will not be reflected in downstream systems. |
| user_data          | User Data                             | String(150)   | O |   | User metadata with separator " ".  |
| communication_data | Communication Data                    | Json List     | C |   | Return response back to caller. Mandatory if getQRCode="Y". See Addendum: Communication Data section for more details. |
| getQRCode          | Get QR Code flag                      | String(1)     | O |   | "Y" for getting a QR in return.  |
| qr_code            | QR Code                               | String(50000) |   | O | QR Code image in PNG format, Base64 encoded. Returned if the getQRCode flag in the Order request is set to "Y".        |

### 6.3 *Order Query*

Order query is for requesting the order state in case of delay in getting the order response.

| JSON Field ID         | Field Name                                | Field Type  | Req    | Resp   | Comments   |
|-----------------------|---|-------------|--------|--------|--|
| mti                   | Message Type Identifier                   | Numeric (4) | 0100   | 0110   |  |
| process_code          | Processing Code                           | Numeric(6)  | 330000 | 330000 | Coded as 330000.   |
| message_version       | Message version                           | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions.   |
| stan                  | System Audit Trace Number                 | Numeric(6)  | M      | M      | STAN from the original payment request. Echoed back in response.                                   |
| transaction_time      | Time, Local Transaction                   | Numeric(6)  | M      | M      | hhmmss. Echoed back in response.   |
| transaction_date      | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD. Echoed back in response.   |
| entry_mode            | Contact, Contactless or QR                | Numeric(3)  | M      | M      | Coded as 000. Echoed back in response.   |
| condition_code        | EFTPOS or eCommerce                       | Numeric(2)  | M      | M      | See Addendum Condition Codes.  |
| institution_code      | Acquiring institution identification code | Numeric(11) | M      | M      | Assigned by NETS. Echoed back in response.   |
| retrieval_ref         | Retrieval Reference Number                | String(12)  | O      | O      | Unique payment identifier to identify this payment request. Echoed back in response.               |
| original_request_type | Original Request Type                     | String(20)  | C      |        | Default value is order. Mandatory for other transactions. The possible value can be :order, refund |
| approval_code         | Authorization Id Response                 | String(6)   |        | O      |  |
| response_code         | Response Code                             | String(2)   |        | M      |  |
| host_tid              | Card Acceptor Terminal                    | String(8)   | M      | M      | Assigned by NETS :pass-through   |

**NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD**

|                | Identification                    |             |   |   |  |
|----------------|-----------------------------------|-------------|---|---|--|
| host_mid       | Card Acceptor Identification Code | String(15)  | M |   | Assigned by NETS :pass-through                   |
| acceptor_name  | Merchant Name                     | String(40)  |   | O | Assigned by NETS                                 |
| txn_identifier | Transaction Identifier            | String(170) | M | M | Scanned QR code string. Echoed back in response. |
| npx_data       | NPX Data                          | Map         | M | M | NPS additional information required              |
| loyalty_data   | Loyalty Data                      | List of Map |   | O |  |
| invoice_ref    | Invoice / ECR Ref #               | String(16)  | O | O | Invoice reference. Echoed back in response.      |
| user_data      | User Data                         | String(150) | O |   | User metadata with separator “ ”.                |

## 6.4 Device Logon

Device Logon is used to inform NPS of device coming online, or to register the merchant's device to NPS.

| JSON Field ID      | Field Name                            | Field Type   | Req    | Resp   | Comments  |
|--------------------|---------------------------------------|--------------|--------|--------|---|
| mti                | Message Type Identifier               | Numeric (4)  | 0800   | 0810   |   |
| process_code       | Processing Code                       | Numeric(6)   | 930000 | 930000 |   |
| message_version    | Message version                       | Numeric(2)   | C      |        | Default version is 00. Mandatory for other versions.  |
| stan               | System Audit Trace Number             | Numeric(6)   | M      | M      | STAN from the device.<br>Echoed from request.   |
| transaction_time   | Time, Local Transaction               | Numeric(6)   | M      | M      | hhmmss.<br>Echoed from request.   |
| transaction_date   | Date, Local Transaction               | Numeric(4)   | M      | M      | MMDD.<br>Echoed from request.   |
| response_code      | Response Code                         | String(2)    |        | M      |   |
| host_tid           | Card Acceptor Terminal Identification | String(8)    | M      | M      | Assigned by NETS :pass-through<br>Echoed from request.  |
| host_mid           | Card Acceptor Identification Code     | String(15)   | M      |        | Assigned by NETS :pass-through<br>Echoed from request.  |
| npx_data           | NPX Data                              | Map          | M      |        | NPS additional information required.<br>See NPX Data section for more details.                                    |
| communication_data | Communication Details                 | List         | C      |        | Applicable for Notification.<br>See Addendum: Communication Data section for more details.                        |
| verification_data  | Verification Details                  | Map          | C      |        | Applicable for verification purposes.<br>See Addendum: Verification Data section for more details.                |
| txn_identifier     | Transaction Identifier                | String(2000) | C      |        | Scanned QR code string. Applicable for merchant signed up for static QR.<br>Used to verify merchant authenticity. |

## 6.5 *Device Logoff*

Device Logoff is used to inform NPS of device going offline, or to deregister the merchant's device to NPS.

For devices that are constantly online, there is no need to logoff, unless it is to be deregistered from NPS. Once deregistered, it will stop receiving notifications from NPS.

| JSON Field ID    | Field Name                            | Field Type  | Req    | Resp   | Comments  |
|------------------|---------------------------------------|-------------|--------|--------|---|
| mti              | Message Type Identifier               | Numeric (4) | 0800   | 0810   |   |
| process_code     | Processing Code                       | Numeric(6)  | 930000 | 930000 |   |
| message_version  | Message version                       | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions.  |
| stan             | System Audit Trace Number             | Numeric(6)  | M      | M      | STAN from the device.<br>Echoed from request.   |
| transaction_time | Time, Local Transaction               | Numeric(6)  | M      | M      | hhmmss.<br>Echoed from request.   |
| transaction_date | Date, Local Transaction               | Numeric(4)  | M      | M      | MMDD.<br>Echoed from request.   |
| response_code    | Response Code                         | String(2)   |        | M      |   |
| host_tid         | Card Acceptor Terminal Identification | String(8)   | M      | M      | Assigned by NETS :pass-through<br>Echoed from request.  |
| host_mid         | Card Acceptor Identification Code     | String(15)  | M      | M      | Assigned by NETS :pass-through<br>Echoed from request.  |
| npx_data         | NPX Data                              | Map         | M      |        | NPS additional information required   |
| txn_identifier   | Transaction Identifier                | String(170) | C      |        | Scanned QR code string. Applicable for merchant signed up for static QR.<br>Used to verify merchant authenticity. |

## 6.6 Transaction Search

| JSON Field ID      | Field Name                                | Attrib      | Req    | Resp   | Comments   |
|--------------------|---|-------------|--------|--------|--|
| mti                | Message Type Identifier                   | Numeric(4)  | 0100   | 0110   |  |
| process_code       | Processing Code                           | Numeric(6)  | 500000 | 500000 |  |
| message_version    | Message version                           | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions.         |
| stan               | System Audit Trace Number                 | Numeric(6)  | O      | O      | Original STAN to the transaction to be inquired.             |
| search_count       | Number of transactions to be returned     | Numeric(2)  | O      |        | Defaulted to 1   |
| institution_code   | Acquiring institution identification code | Numeric(11) | O      |        | Applicable for host or proxy transactions interfaced to NPX. |
| host_tid           | Card Acceptor Terminal Identification     | String(8)   | M      | M      | Assigned by NETS :pass-through Echoed back from request.     |
| host_mid           | Card Acceptor Identification Code         | String(15)  | M      | M      | Assigned by NETS :pass-through Echoed back from request.     |
| invoice_ref        | Invoice / ECR Ref #                       | String(16)  | O      |        | Invoice reference. Echoed back from request.                 |
| retrieval_ref      | Retrieval Reference Number                | String(20)  | O      |        | Unique payment identifier of the payment request.            |
| communication_data | Communication Data                        | List        | O      |        | See Addendum: Communication Data section for more details.   |
| transactions       | Transaction search results                | tag (list)  |        | O      |  |



| Transaction Search Results |                            |              |   |   |
|----------------------------|----------------------------|--------------|---|---|
| retrieval_ref              | Retrieval Reference Number | String (20)  | O |   |
| amount                     | Transaction amount         | Numeric (12) | M |   |
| currency                   | Transaction currency       | String (3)   | M |   |
| approval_code              | Authorization Id Response  | String (6)   | O |   |
| response_code              | Response Code              | String (2)   | M |   |
| payment_type               | Payment Type ID            | String (4)   | O | The payment type used as SOF. If an Order Request is a success, the payment type will be returned via the response. |
| transaction_time           | Time, Local Transaction    | Numeric (6)  | C | Mandatory if the original transaction is found.   |
| transaction_date           | Date, Local Transaction    | Numeric (4)  | C | Mandatory if the original transaction is found.   |
| stan                       | System Audit Trace Number  | Numeric(6)   | C | Mandatory if the original transaction is found.   |
| loyalty_data               | Loyalty Data               | List of Map  | O |   |

## 6.7 Notification

Notification is used to notify the merchant or terminal of a transaction received by payment switch.

The response back to the Notification is optional.

| JSON Field ID     | Field Name                 | Attrib      | Req    | Res    | Comments   |
|-------------------|----------------------------|-------------|--------|--------|--|
| mti               | Message Type Identifier    | Numeric(4)  | 0340   | 0350   |  |
| process_code      | Processing Code            | Numeric(6)  | 000000 | 000000 |  |
| message_version   | Message version            | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions.   |
| SOF_uri           | SOF                        | String(200) | O      | O      | SOF_uri from the payment advice/request will be sent. Echoed back from request.                                |
| amount            | Amount, Transaction        | Numeric(12) | M      | M      | Echoed back from request.  |
| currency_code     | Currency Code              | String(3)   | M      | M      | Echoed back from request.  |
| transmission_time | Transmission Date Time     | Numeric(10) | O      |        | MMDDhhmmss   |
| stan              | System Audit Trace Number  | Numeric(6)  | O      | O      |  |
| transaction_time  | Time, Local Transaction    | Numeric(6)  | M      | M      | hhmmss. Echoed back from request.  |
| transaction_date  | Date, Local Transaction    | Numeric(4)  | M      | M      | MMDD. Echoed back from request.  |
| settlement_date   | Date, Settlement           | Numeric(4)  |        |        | MMDD. Echoed back from request.  |
| capture_date      | Date, Capture              | Numeric(4)  |        |        | MMDD. Echoed back from request.  |
| retrieval_ref     | Retrieval Reference Number | String(12)  | M      | M      | Value will be echoed back if provided in request. Otherwise RRN is returned by host. Echoed back from request. |
| approval_code     | Authorization Id Response  | String(6)   | O      | O      | Approval code to the matching Payment Advice or Payment Request. Echoed back from request.                     |
| response_code     | Response Code              | String(2)   | M      | M      | Echoed from the payment's  |



# NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|                      |                                       |              |   |   |  |
|----------------------|---------------------------------------|--------------|---|---|--|
|                      |                                       |              |   |   | response code.   |
| host_tid             | Card Acceptor Terminal Identification | String(8)    | M | M | Assigned by NETS :pass-through<br>Echoed back from request.                        |
| host_mid             | Card Acceptor Identification Code     | String(15)   | M | M | Assigned by NETS :pass-through<br>Echoed back from request.                        |
| txn_identifier       | Transaction Identifier                | String(2000) |   |   | Scanned QR code string.  |
| invoice_ref          | Invoice / ECR Ref #                   | String(16)   | O | O | Invoice reference.<br>Echoed back from request.                                    |
| user_data            | Additional Data                       | String(150)  |   |   | User data received through<br>Payment Advice/Request.                              |
| loyalty_data         | Loyalty Data                          | List of Map  | O |   | For loyalty related data.<br>Parameter from the matched<br>payment advice/request. |
| transaction_id       | Transaction Id                        | Numeric(10)  | M | M | Echoed back from request.  |
| transaction_status   | Transaction Status                    | String(2)    | O |   |  |
| acquirer_id          | Acquirer Id                           | Numeric(4)   | O |   | The acquirer id configured on host.  |
| terminal_acquirer_id | Terminal Acquirer Id                  | Numeric(4)   | O |   | The acquirer id configured on<br>terminal.   |
| rcpt_hdr_one         | Receipt Header one                    | String(99)   | O |   |  |
| rcpt_hdr_two         | Receipt Header Two                    | String(99)   | O |   |  |
| rcpt_hdr_three       | Receipt Header Three                  | String(99)   | O |   |  |
| rcpt_hdr_four        | Receipt Header Four                   | String(99)   | O |   |  |
| payment_type_id      | Payment Type Id                       | String(4)    | M |   |  |
| sof_details          | SOF Details                           | String(30)   | O |   |  |
| pwap_error_msg       | PWAP Error Message                    | String(99)   | O |   |  |
| pwap_error_code      | PWAP Error Code                       | Numeric(4)   | O |   |  |

## 6.8 *Transaction Status Message*

| JSON Field Id             | Field Name                                | Attrib       | Mesaage | Comments   |
|---------------------------|---|--------------|---------|--|
| SOF_uri                   | SOF                                       | String(200)  | O       |  |
| sof_account_id            | Identifier for end user wallet id.        | String(100)  | O       |  |
| amount                    | Amount, Transaction                       | Numeric(12)  | C       | For loyalty redemption, refer the mount from loyalty data. |
| transmission_time         | Transmission Date Time                    | Numeric(10)  | C       | MMDDhhmmss<br>Mandatory for UPI QR.                        |
| stan                      | System Audit Trace Number                 | Numeric(6)   | M       |  |
| transaction_time          | Time, Local Transaction                   | Numeric(6)   | M       |  |
| transaction_date          | Date, Local Transaction                   | Numeric(4)   | M       |  |
| settlement_date           | Date, Settlement                          | Numeric(4)   | O       | MMDD format  |
| institution_code          | Acquiring institution identification code | Numeric(11)  | O       |  |
| condition_code            | Condition Code                            | Numeric(2)   | M       |  |
| retrieval_ref             | Retrieval Reference Number                | String(20)   | M       |  |
| approval_code             | Authorization Id Response                 | String(6)    | O       |  |
| response_code             | Response Code                             | String(2)    | M       |  |
| host_tid                  | Terminal Id                               | String(20)   | M       |  |
| host_mid                  | Card Acceptor Id                          | String(20)   | O       |  |
| acceptor_name             | Merchant Name.                            | String (40)  | O       |  |
| acceptor_location         | Merchant Location.                        | String (15)  | O       |  |
| acquirer_institution_code | Foreign Acquirer Institution Code.        | String(11)   | C       | Mandatory for OBPAYADVICE.                                 |
| user_data                 | Additional Data                           | String(150)  | O       |  |
| transaction_id            | Transaction ID                            | Numeric (10) | O       | Unique txn reference number from gateway                   |
| txn_identifier            | Transaction Identifier                    | String(2000) | O       | Applicable only for dynamic                                |

|                       |  |             |   | QR.   |
|-----------------------|--|-------------|---|---|
| transaction_type      | Transaction Type                       | String(20)  | M | Possible transaction types:<br>PAYADVICE<br>CIPAYADVICE<br>OBPAYADVICE<br>ORDER<br>ORDREVERSAL<br>RETURN(QR refund)<br>REDEMPTION |
| status                | Transaction Status                     | String(2)   | M | 04 - SETTLED<br>01 - OK<br>06 - REVERSED<br>03 - FAILED<br>12 - REVERSAL FAILED<br>15 - ACQUIRER RESPONSE<br>TIMEOUT              |
| payment_type          | Payment Type Id                        | String(8)   | O | The payment type used as<br>SOF.  |
| invoice_ref           | Invoice / ECR Ref #                    | String(16)  | O | Invoice ref from order or<br>inside QR or from payment<br>advice.   |
| loyalty_data          | Loyalty Data                           | list of map | O | For loyalty related data.<br>Refer addendum for details.<br>There should be minimum<br>one loyalty data.                          |
| fx_qualification_data | Foreign Exchange<br>Qualification data | map         | O | FX Qualification Related data.<br>Refer to the below table for<br>field details.  |
| foreign_acquirer_data | Foreign Acquirer Data                  | map         | O | Foreign Acquirer Related<br>data.<br>Refer to the below table for<br>field details.   |

| FX Qualification Data |                                   |              |   |  |
|-----------------------|-----------------------------------|--------------|---|--|
| sell_amount           | Amount in local/SOF<br>currency   | Numeric (12) | M |  |
| sell_currency         | Local/SOF transaction<br>currency | String (3)   | M |  |



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|                            |  |              |   |  |
|----------------------------|--|--------------|---|--|
| buy_amount                 | Amount in foreign currency             | Numeric (12) | M |  |
| buy_currency               | Foreign/FX transaction current         | String (3)   | M |  |
| settlement_amount          | Settlement Amount                      | Numeric(12)  | M |  |
| original_txn_date          | HHMMSS                                 |              | M |  |
| original_txn_time          | MMDD                                   |              | M |  |
| original_txn_posting_date  | MMDD                                   |              | M |  |
| client_txn_reference       | Client's unique transaction reference. | String (80)  | M |  |
| fx_qualification_trace_num | Unique trace number from FX Hub.       | String (40)  | M |  |
| rate_id                    | FX rate identifier                     | String (200) | M |  |

| Foreign Acquirer Data |                       |             |   |                              |
|-----------------------|-----------------------|-------------|---|------------------------------|
| merchant_acq_id       | Merchant Acq Id       | String (10) | M |                              |
| transaction_date_time | Transaction Date Time | String (12) | M | Format: YYMMDDHHMMSS (GMT+8) |
| acq_rrn               | Sender Account Number | String (20) | M |                              |
| acq_proxy             | Acq proxy             | String (20) | M |                              |
| acq_instruction_id    | Acq Instruction Id    | String (40) | M |                              |
| acq_response_code     | Acq Response Code     | String (2)  | M |                              |
| approval_code         | Approval code         | String (6)  | O |                              |

Solace Topic: P101/G/A/SUB/ANY/TRX/CPS/PAY/TXNSTATE/NIL/V1/JSON/{transaction\_type}/{institution\_code}/{status}/{response\_code}/{acquirer\_institution\_code}/{transaction\_id}

## 6.9 *Order Refund*

A request to refund to the customer, based on an existing Order.

Multiple partial refunds are possible, but subjected to the Bank/Source-of-Fund's support.

The refund amount cannot exceed the Order amount.

| JSON Field ID    | Field Name                                | Field Type  | Req    | Resp   | Comments  |
|------------------|---|-------------|--------|--------|---|
| mti              | Message Type Identifier                   | Numeric (4) | 0200   | 0210   |   |
| process_code     | Processing Code                           | Numeric(6)  | 201000 | 201000 |   |
| message_version  | Message version                           | Numeric(2)  | C      |        | Default version is 00.<br>Mandatory for other versions.                           |
| amount           | Amount, Transaction                       | Numeric(12) | M      | M      | Echoed back in response.  |
| stan             | System Audit Trace Number                 | Numeric(6)  | M      | M      | Echoed back in response.  |
| transaction_time | Time, Local Transaction                   | Numeric(6)  | M      | M      | Hhmmss<br>Request contains original transaction time.<br>Echoed back in response. |
| transaction_date | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD<br>Request contains original transaction date.<br>Echoed back in response.   |
| entry_mode       | Contact, Contactless or QR                | Numeric(3)  | M      | M      | Coded as 00   |
| condition_code   | EFTPOS or eCommerce                       | Numeric(2)  | M      | M      | See Addendum Condition Codes  |
| institution_code | Acquiring institution identification code | Numeric(11) | M      | M      | Assigned by NETS.<br>Echoed back in response.                                     |
| retrieval_ref    | Retrieval Reference Number                | String(12)  | M      | M      | Original Retrieval Reference of the Payment Advice tied to the Order.             |
| approval_code    | Authorization Id Response                 | String(6)   |        | C      |   |
| response_code    | Response Code                             | String(2)   |        | M      |   |
| host_tid         | Card Acceptor Terminal                    | String(8)   | M      | M      | Assigned by NETS :pass-through<br>Echoed back in response.                        |



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|                    | Identification                    |             |   |   |   |
|--------------------|-----------------------------------|-------------|---|---|---|
| host_mid           | Card Acceptor Identification Code | String(15)  | M | O | Assigned by NETS :pass-through Echoed back in response.                                       |
| acceptor_name      | Merchant Name                     | String(40)  |   | O | Assigned by NETS  |
| txn_identifier     | Transaction Identifier            | String(170) | C |   | Scanned QR code string  |
| npx_data           | NPX Data                          | Map         | M | M | NPS additional information required.  |
| loyalty_data       | Loyalty Data                      | List of Map | O | O | For loyalty related data  |
| invoice_ref        | Invoice / ECR Ref #               | String(16)  | O | O | Original Invoice Reference of the Order.<br>Echoed back from request.                         |
| user_data          | User metadata with separator " "  | String(150) | O | O | User metadata with separator " "  |
| communication_data | Communication Data                | List        | O |   | Return response back to caller.<br>See Addendum: Communication Data section for more details. |



**6.10 Payment Advice (Consumer Initiated)**

| JSON Field Id     | Field Name                                | Attrib       | Req    | Resp   | Comments   |
|-------------------|---|--------------|--------|--------|--|
| mti               | Message Type Identifier                   | Numeric (4)  | 0120   | 0130   |  |
| process_code      | Processing Code                           | Numeric(6)   | 500000 | 500000 |  |
| message_version   | Message version                           | Numeric(2)   | C      |        | Default version is 00.<br>Mandatory for other versions.  |
| SOF_uri           | SOF                                       | String(200)  | M      |        |  |
| sof_account_id    | Identifier for end user wallet id.        | String(100)  | O      |        |  |
| amount            | Amount, Transaction                       | Numeric(12)  | M      | O      |  |
| transmission_time | Transmission Date Time                    | Numeric(10)  | C      | O      | MMDDhhmmss<br>Mandatory for UPI QR.  |
| stan              | System Audit Trace Number                 | Numeric(6)   | M      | M      |  |
| transaction_time  | Time, Local Transaction                   | Numeric(6)   | M      | M      | Hhmmss   |
| transaction_date  | Date, Local Transaction                   | Numeric(4)   | M      | M      | MMDD   |
| settlement_date   | Date of the settlement                    | Numeric(4)   |        | O      | MMDD   |
| entry_mode        | Entry Mode                                | Numeric(3)   | M      | M      |  |
| condition_code    | POS Condition Code                        | Numeric(2)   | M      | M      |  |
| institution_code  | Acquiring institution identification code | Numeric(11)  | M      | M      |  |
| retrieval_ref     | Retrieval Reference Number                | String(20)   | M      | M      |  |
| approval_code     | Authorization Id Response                 | String(6)    | C      | C      | Mandatory if the response code is 00.  |
| response_code     | Response Code                             | String(2)    | M      | M      |  |
| host_tid          | Terminal Id                               | String (8)   | M      | M      |  |
| host_mid          | Card Acceptor Id                          | String (15)  | M      |        |  |
| txn_identifier    | Transaction Identifier                    | String(3000) | M      |        |  |
| loyalty_token     | Loyalty token                             | String(80)   | O      | O      | For loyalty related data.  |
| invoice_ref       | Invoice / ECR Ref #                       | String(16)   | O      |        | Invoice Ref# in the QR code takes precedence if present. Allows until 20 characters but more than 16 characters will not be reflected in downstream systems. |



|             |                 |             |   |   |                                 |
|-------------|-----------------|-------------|---|---|---------------------------------|
| user_data   | Additional Data | String(150) | O | O | If additional data is available |
| pay_details | Payment Details | String(999) | O |   |                                 |

### 6.11 *Payment Request (Consumer Initiated)*

| JSON Field Id     | Field Name                                | Attrib      | Req    | Resp   | Comments   |
|-------------------|---|-------------|--------|--------|--|
| mti               | Message Type Identifier                   | Numeric (4) | 0200   | 0210   |  |
| process_code      | Processing Code                           | Numeric(6)  | 500000 | 500000 |  |
| message_version   | Message version                           | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions. |
| SOF_uri           | SOF                                       | String(200) | M      |        |  |
| sof_account_id    | Identifier for end user wallet id.        | String(100) | O      |        |  |
| amount            | Amount, Transaction                       | Numeric(12) | M      | O      |  |
| transmission_time | Transmission Date Time                    | Numeric(10) | O      | O      | MMDDhhmmss   |
| stan              | System Audit Trace Number                 | Numeric(6)  | M      | M      |  |
| transaction_time  | Time, Local Transaction                   | Numeric(6)  | M      | M      | Hhmmss   |
| transaction_date  | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD   |
| entry_mode        | Entry Mode                                | Numeric(3)  | M      | M      |  |
| card_seq_number   | Card Sequence Number                      | Numeric(3)  | C      |        | Applicable for card transaction                      |
| condition_code    | POS Condition Code                        | Numeric(2)  | M      | M      |  |
| institution_code  | Acquiring institution identification code | Numeric(11) | M      | O      |  |
| track2_data       | Track 2 Data                              | String(37)  | C      |        | Applicable for card transaction                      |
| retrieval_ref     | Retrieval Reference Number                | String(20)  | M      | M      |  |
| approval_code     | Authorization Id Response                 | String(6)   | C      | C      | Mandatory if the response code is 00.                |
| response_code     | Response Code                             | String(2)   |        | M      |  |
| host_tid          | Terminal Id                               | String (8)  | M      | M      |  |
| host_mid          | Card Acceptor Id                          | String (15) | M      |        |  |
| pin               | PIN Data                                  | Byte(64)    | O      |        |  |



|                |                                       |              |   |   |  |
|----------------|---------------------------------------|--------------|---|---|--|
| icc_data       | ICC Sys Related Data                  | Byte(255)    | C | C | Applicable for card transaction  |
| txn_identifier | Transaction Identifier                | String(3000) | M | M |  |
| npx_data       | Additional Data<br>(gateway specific) | map          | C | C | Applicable NPX acquiring transaction   |
| loyalty_token  | Loyalty token                         | String(80)   | O | O | For loyalty related data.  |
| invoice_ref    | Invoice / ECR Ref #                   | String(16)   | O |   | If Invoice/ECR Ref# is selected. Allows until 20 characters but more than 16 characters will not be reflected in downstream systems. |
| user_data      | Additional Data                       | String(150)  | O |   | If additional data is available  |
| pay_details    | Payment Details                       | String(1500) | C |   | Mandatory for card transaction   |

#### 6.12 *Payment Advice Issuer (Consumer Initiated)*

| JSON Field Id             | Field Name                                       | Attrib      | Req    | Resp   | Comments   |
|---------------------------|--|-------------|--------|--------|--|
| mti                       | Message Type Identifier                          | Numeric (4) | 0120   | 0130   |  |
| process_code              | Processing Code                                  | Numeric(6)  | 600000 | 600000 |  |
| message_version           | Message version                                  | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions.   |
| SOF_uri                   | SOF  | String(200) | M      |        |  |
| sof_account_id            | Identifier for end user wallet id.               | String(100) | O      |        |  |
| amount                    | Amount, Transaction in currency accepted by SOF. | Numeric(12) | M      | M      | The transaction amount that is accepted and debited from the SOF.                                    |
| amount_currency           | ISO alpha currency code of amount                | String(3)   | M      | M      | The currency representing the amount.  |
| original_amount           | Original Amount in original currency             | Numeric(12) | C      | O      | The original amount in the original currency. Mandatory for currency converted transaction           |
| original_amount__currency | ISO alpha currency code of original currency     | String(3)   | C      | O      | The original currency representing the original amount. Mandatory for currency converted transaction |
| transmission_time         | Transmission Date                                | Numeric(10) | C      | O      | MMDDhhmmss   |



|                                   | Time                                   |              |   |   | Mandatory for UPI QR.  |
|-----------------------------------|--|--------------|---|---|--|
| stan                              | System Audit Trace Number              | Numeric(6)   | M | M |  |
| transaction_time                  | Time, Local Transaction                | Numeric(6)   | M | M | Hhmmss   |
| transaction_date                  | Date, Local Transaction                | Numeric(4)   | M | M | MMDD   |
| settlement_date                   | Date of the settlement                 | Numeric(4)   |   | O | MMDD   |
| entry_mode                        | Entry Mode                             | Numeric(3)   | M | M |  |
| condition_code                    | POS Condition Code                     | Numeric(2)   | M | M |  |
| institution_code                  | Issuer institution identification code | Numeric(11)  | M | M |  |
| foreign_acquirer_institution_code | Foreign Acquirer Institution Code      | Numeric (11) | C | C | If the QR code belongs to an accepted foreign acquirer by NPS, then this is required.  |
| retrieval_ref                     | Retrieval Reference Number             | String(20)   | M | M |  |
| approval_code                     | Authorization Id Response              | String(6)    | C | C | Mandatory if the response code is 00.  |
| response_code                     | Response Code                          | String(2)    | M | M |  |
| host_tid                          | Terminal Id                            | String (8)   | M | M | Acquirer TID or Virtual TID  |
| host_mid                          | Card Acceptor Id                       | String (15)  | M | M | Acquirer MID or Virtual MID  |
| txn_identifier                    | Transaction Identifier                 | String(3000) | M |   |  |
| loyalty_token                     | Loyalty token                          | String(80)   | O | O | For loyalty transaction reference.   |
| qualification_token               | FX Qualification Token                 | String(80)   | C | C | The same token received from the Qualification message. Mandatory if the currency conversion was obtained via the Qualification message.                     |
| invoice_ref                       | Invoice / ECR Ref #                    | String(16)   | O |   | Invoice Ref# in the QR code takes precedence if present. Allows until 20 characters but more than 16 characters will not be reflected in downstream systems. |
| user_data                         | Additional Data                        | String(150)  | O | O | If additional data is available  |
| pay_details                       | Payment Details                        | String(999)  | O |   |  |

### 6.13 *Payment Request Issuer (Consumer Initiated)*

| JSON Field Id                         | Field Name                                       | Attrib       | Req    | Resp   | Comments  |
|---------------------------------------|--|--------------|--------|--------|---|
| mti                                   | Message Type Identifier                          | Numeric (4)  | 0200   | 0210   |   |
| process_code                          | Processing Code                                  | Numeric(6)   | 600000 | 600000 |   |
| message_version                       | Message version                                  | Numeric(2)   | C      |        | Default version is 00. Mandatory for other versions.                                  |
| SOF_uri                               | SOF  | String(200)  | M      |        |   |
| sof_account_id                        | Identifier for end user wallet id.               | String(100)  | O      |        |   |
| amount                                | Amount, Transaction in currency accepted by SOF. | Numeric(12)  | M      | M      | The transaction amount that is accepted and debited from the SOF.                     |
| amount_currency                       | ISO alpha currency code of amount                | String(3)    | M      | M      |   |
| The currency representing the amount. |  |              |        |        |   |
| original_amount                       | Original Amount in original currency             | Numeric(12)  | C      | O      | The original amount in the original currency.   |
| transmission_time                     | Transmission Date Time                           | Numeric(10)  | O      | O      | MMDDhhmmss  |
| stan                                  | System Audit Trace Number                        | Numeric(6)   | M      | M      |   |
| transaction_time                      | Time, Local Transaction                          | Numeric(6)   | M      | M      | Hhmmss  |
| transaction_date                      | Date, Local Transaction                          | Numeric(4)   | M      | M      | MMDD  |
| entry_mode                            | Entry Mode                                       | Numeric(3)   | M      | M      |   |
| card_seq_number                       | Card Sequence Number                             | Numeric(3)   | C      |        | Applicable for card transaction   |
| condition_code                        | POS Condition Code                               | Numeric(2)   | M      | M      |   |
| institution_code                      | Issuer institution identification code           | Numeric(11)  | M      | M      |   |
| foreign_acquirer_institution_code     | Foreign Acquirer Institution Code                | Numeric (11) | C      | C      | If the QR code belongs to an accepted foreign acquirer by NPS, then this is required. |
| track2_data                           | Track 2 Data                                     | String(37)   | C      |        | Applicable for card transaction   |
| retrieval_ref                         | Retrieval Reference Number                       | String(20)   | M      | M      |   |
| approval_code                         | Authorization Id Response                        | String(6)    | C      | C      | Mandatory if the response code is 00.   |

|                     |                                       |              |   |   |  |
|---------------------|---------------------------------------|--------------|---|---|--|
| response_code       | Response Code                         | String(2)    |   | M |  |
| host_tid            | Terminal Id                           | String (8)   | M | M | Acquirer TID or Virtual TID  |
| host_mid            | Card Acceptor Id                      | String (15)  | M | M | Acquirer MID or Virtual MID  |
| pin                 | PIN Data                              | Byte(64)     | O |   |  |
| icc_data            | ICC Sys Related Data                  | Byte(255)    | C | C | Applicable for card transaction  |
| txn_identifier      | Transaction Identifier                | String(3000) | M | M |  |
| npx_data            | Additional Data<br>(gateway specific) | map          | C | C | Applicable NPX acquiring transaction   |
| loyalty_token       | Loyalty token                         | String(80)   | O | O | For loyalty related data.  |
| qualification_token | FX Qualification Token                | String(80)   | M | M | The same token received from the Qualification message. Mandatory if the currency conversion was obtained via the Qualification message. |
| invoice_ref         | Invoice / ECR Ref #                   | String(16)   | O |   | If Invoice/ECR Ref# is selected. Allows until 20 characters but more than 16 characters will not be reflected in downstream systems.     |
| user_data           | Additional Data                       | String(150)  | O |   | If additional data is available  |
| pay_details         | Payment Details                       | String(1500) | C |   | Mandatory for card transaction   |

#### 6.14 DCC Qualification Request

| JSON Field ID   | Field Name                  | Field Type  | Req    | Resp   | Comments   |
|-----------------|-----------------------------|-------------|--------|--------|--|
| Mti             | Message Type Identifier     | Numeric (4) | 0600   | 0610   |  |
| process_code    | Processing Code             | Numeric (6) | 600000 | 600000 |  |
| retrieval_ref   | Retrieval Reference Number  | String(20)  | M      | M      | Unique identifier to identify this request. Echoed back in response. |
| amount          | Original Transaction Amount | Numeric(12) | M      | M      | Amount expected by merchant. Echoed back in response.                |
| amount_currency | ISO alpha currency code     | String(3)   | M      | M      | The currency code representing the Original Transaction Amount.      |

|                             |   |              |   |   |   |
|-----------------------------|---|--------------|---|---|---|
| converted_amount            | Amount for converted currency   | Numeric(12)  |   | C | The converted amount in the convert_currency, from the original amount and its corresponding currency. Will be present only for '00' response code. |
| convert_currency            | ISO alpha currency code of converted currency                         | String(3)    | M | M | The currency representing the amount to be converted to. Echoed back in response.   |
| conversion_rate             | The exchange rate used in calculating the currency conversion amounts | Numeric(15)  |   | C | Will be present only for '00' response code.  |
| qualification_token         | FX Qualification Token  | String(80)   |   | C | Will be present only for '00' response code.  |
| qualification_validity_time | Validity of the currency converted amount                             | Numeric(3)   |   | C | In seconds. Will be present only for '00' response code.  |
| institution_code            | Sender Institution Identification Code                                | Numeric (11) | M | M | Assigned by NETS. Echoed back.  |
| acquirer_institution_code   | Foreign Acquirer Institution Code                                     | Numeric(11)  | M |   | Provided in QR query response.  |
| SOF_uri                     | Source of Fund URI  | String(200)  | M |   |   |
| host_tid                    | Terminal Id   | String(20)   | M | M | Taken from QR query response. Returned for success response   |
| host_mid                    | Merchant Id   | String(20)   | M | M | Taken from QR query response. Returned for success response   |
|                             |   |              |   |   |   |

|                    |                        |              |   |   |   |
|--------------------|------------------------|--------------|---|---|---|
| transmission_time  | Transmission Date Time | Numeric (10) | M | M | Encoded as MMDDhhmmss time is GMT+8. Echoed back in response. |
| verification_token | Verification token     | String(80)   | O |   | From QR Query request.  |
| response_code      | Response Code          | String (2)   |   | M | "00" if successful, otherwise it is a failure                 |

### 6.15 *Payment Advice (Order)*

| JSON Field Id     | Field Name                                | Attrib      | Req    | Resp   | Comments   |
|-------------------|---|-------------|--------|--------|--|
| Mti               | Message Type Identifier                   | Numeric (4) | 0120   | 0130   |  |
| process_code      | Processing Code                           | Numeric(6)  | 000000 | 000000 |  |
| message_version   | Message version                           | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions. |
| SOF_uri           | SOF                                       | String(200) | M      |        |  |
| sof_account_id    | Identifier for end user wallet id.        | String(100) | O      |        |  |
| amount            | Amount, Transaction                       | Numeric(12) | M      | O      |  |
| transmission_time | Transmission Date Time                    | Numeric(10) | O      | O      | MMDDhhmmss   |
| stan              | System Audit Trace Number                 | Numeric(6)  | M      | M      |  |
| transaction_time  | Time, Local Transaction                   | Numeric(6)  | M      | M      | Hhmmss   |
| transaction_date  | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD   |
| settlement_date   | Date of the settlement                    | Numeric(4)  |        | O      | MMDD   |
| entry_mode        | Entry Mode                                | Numeric(3)  | M      | M      |  |
| condition_code    | POS Condition Code                        | Numeric(2)  | M      | M      |  |
| institution_code  | Acquiring institution identification code | Numeric(11) | M      | M      |  |
| retrieval_ref     | Retrieval Reference Number                | String(20)  | M      | M      |  |
| approval_code     | Authorization Id                          | String(6)   | C      | C      | Mandatory if the response code is                    |





## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|                |                                       |             |   |   |  |
|----------------|---------------------------------------|-------------|---|---|--|
|                | Response                              |             |   |   | 00.  |
| response_code  | Response Code                         | String(2)   | M | M |  |
| host_tid       | Terminal Id                           | String (8)  | M | M |  |
| host_mid       | Card Acceptor Id                      | String (15) | M |   |  |
| txn_identifier | Transaction Identifier                | String(170) | M |   |  |
| npx_data       | Additional Data<br>(gateway specific) | map         | C | C | Applicable NPX acquiring transaction   |
| loyalty_token  | Loyalty token                         | String(80)  | O | O | For loyalty related data.  |
| invoice_ref    | Invoice / ECR Ref #                   | String(16)  | O |   | If Invoice/ECR Ref# is selected. Allows until 20 characters but more than 16 characters will not be reflected in downstream systems. |
| user_data      | Additional Data                       | String(150) | O | O | If additional data is available  |
| pay_details    | Payment Details                       | String(999) | O |   |  |

**6.16 Payment Request (Order)**

| JSON Field Id     | Field Name                                | Attrib      | Req    | Resp   | Comments   |
|-------------------|---|-------------|--------|--------|--|
| mti               | Message Type Identifier                   | Numeric (4) | 0200   | 0210   |  |
| process_code      | Processing Code                           | Numeric(6)  | 000100 | 000100 |  |
| message_version   | Message version                           | Numeric(2)  | C      |        | Default version is 00. Mandatory for other versions. |
| SOF_uri           | SOF                                       | String(200) | M      |        |  |
| sof_account_id    | Identifier for end user wallet id.        | String(100) | O      |        |  |
| amount            | Amount, Transaction                       | Numeric(12) | M      | O      |  |
| transmission_time | Transmission Date Time                    | Numeric(10) | O      | O      | MMDDhhmmss   |
| stan              | System Audit Trace Number                 | Numeric(6)  | M      | M      |  |
| transaction_time  | Time, Local Transaction                   | Numeric(6)  | M      | M      | Hhmmss   |
| transaction_date  | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD   |
| entry_mode        | Entry Mode                                | Numeric(3)  | M      | M      |  |
| card_seq_number   | Card Sequence Number                      | Numeric(3)  | C      |        | Applicable for card transaction                      |
| condition_code    | POS Condition Code                        | Numeric(2)  | M      | M      |  |
| institution_code  | Acquiring institution identification code | Numeric(11) | M      | M      |  |
| track2_data       | Track 2 Data                              | String(37)  | C      |        | Applicable for card transaction                      |
| retrieval_ref     | Retrieval Reference Number                | String(20)  | M      | M      |  |
| approval_code     | Authorization Id Response                 | String(6)   | C      | C      | Mandatory if the response code is 00.                |
| response_code     | Response Code                             | String(2)   |        | M      |  |
| host_tid          | Terminal Id                               | String (8)  | M      | M      |  |
| host_mid          | Card Acceptor Id                          | String (15) | M      |        |  |
| pin               | PIN Data                                  | Byte(64)    | O      |        |  |
| icc_data          | ICC Sys Related Data                      | Byte(255)   | C      | C      | Applicable for card transaction                      |
| txn_identifier    | Transaction Identifier                    | String(170) | M      | M      |  |
| npx_data          | Additional Data (gateway specific)        | map         | C      | C      | Applicable NPX acquiring transaction                 |
| loyalty_token     | Loyalty token                             | String(80)  | O      | O      | For loyalty related data.                            |
| invoice_ref       | Invoice / ECR Ref #                       | String(16)  | O      |        | If Invoice/ECR Ref# is selected.                     |

|             |                 |              |   |   |   |
|-------------|-----------------|--------------|---|---|---|
|             |                 |              |   |   | Allows until 20 characters but more than 16 characters will not be reflected in downstream systems. |
| user_data   | Additional Data | String(150)  | O | O | If additional data is available   |
| pay_details | Payment Details | String(1500) | C |   | Mandatory for card transaction  |

### 6.17 *Payment Transaction Query*

| JSON Field ID    | Field Name                                | Field Type  | Req    | Resp   | Comments  |
|------------------|---|-------------|--------|--------|---|
| mti              | Message Type Identifier                   | Numeric (4) | 0100   | 0110   |   |
| process_code     | Processing Code                           | Numeric(6)  | 330000 | 330000 | Coded as 330000.  |
| SOF_uri          | Sof                                       | String(200) | M      | M      | Mandatory for payment enquiry   |
| stan             | System Audit Trace Number                 | Numeric(6)  | M      | M      | STAN from the original payment request.<br>Echoed back in response.                     |
| transaction_time | Time, Local Transaction                   | Numeric(6)  | M      | M      | hhmmss.<br>Echoed back in response.   |
| transaction_date | Date, Local Transaction                   | Numeric(4)  | M      | M      | MMDD.<br>Echoed back in response.   |
| settlement_date  | Date of the settlement                    | Numeric(4)  |        | O      | MMDD  |
| entry_mode       | Contact, Contactless or QR                | Numeric(3)  | M      | M      | Coded as 000.<br>Echoed back in response.   |
| condition_code   | EFTPOS or eCommerce                       | Numeric(2)  | M      | M      | See Addendum Condition Codes.   |
| institution_code | Acquiring institution identification code | Numeric(11) | M      |        | Assigned by NETS.   |
| retrieval_ref    | Retrieval Reference Number                | String(20)  | M      | M      | Unique payment identifier to identify this payment request.<br>Echoed back in response. |
| loyalty_token    | Loyalty token                             | String(80)  | O      | O      | For loyalty transaction enquiry.  |



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|               |                                       |            |   |   |                                |
|---------------|---------------------------------------|------------|---|---|--------------------------------|
| response_code | Response Code                         | String(2)  |   | M |                                |
| host_tid      | Card Acceptor Terminal Identification | String(8)  | M | M | Assigned by NETS :pass-through |
| host_mid      | Card Acceptor Identification Code     | String(15) | M |   | Assigned by NETS :pass-through |

**6.18 QR Query**

| JSON Field ID                     | Field Name                             | Field Type                    | Req    | Resp   | Comments  |
|-----------------------------------|--|-------------------------------|--------|--------|---|
| mti                               | Message Type Identifier                | Numeric (4)                   | 0300   | 0310   |   |
| process_code                      | Processing Code                        | Numeric (6)                   | 300000 | 300000 |   |
| transmission_time                 | Transmission Date Time                 | Numeric (10)                  | M      | M      | MMDDhhmmss  |
| retrieval_ref                     | Retrieval Reference Number             | String(20)                    | M      | M      | Unique identifier to identify this request.<br>Echoed back in response.   |
| acceptor_name                     | Payment Acceptor Name                  | String (40)<br>UTF-8 encoded. |        | C      | Returned for success response.  |
| amount                            | Transaction Amount                     | Numeric(12)                   |        | O      | Amount in currency indicated by amount_currency.<br>Applicable only if amount information is encoded in the QR. |
| amount_currency                   | Transaction Amount's Currency          | String(3)                     |        | M      | Amount's currency in ISO alpha currency code.   |
| host_tid                          | Terminal Id                            | String(8)                     |        | C      | Returned for success response   |
| host_mid                          | Merchant Id                            | String(15)                    |        | C      | Returned for success response   |
| SOF_uri                           | Source of Fund URI                     | String(200)                   | M      |        |   |
| institution_code                  | Sender Institution Identification Code | Numeric (11)                  | M      | M      | Assigned by NETS.<br>Echoed back.   |
| foreign_acquirer_institution_code | Foreign Acquirer Institution Code      | Numeric (11)                  |        | C      | If the QR code belongs to an accepted foreign acquirer by NPS, then it is returned.                             |

|                |                           |              |   |   |  |
|----------------|---------------------------|--------------|---|---|--|
|                |                           |              |   |   | Assigned by NETS.                              |
| txn_identifier | Transaction Identifier    | String(2000) | M |   | Scanned QR code string.                        |
| response_code  | Response Code             | String (2)   |   | M | "00" if successful, otherwise it is a failure  |
| cryptogram     | Security Cryptogram Token | String(20)   |   | O | Applicable only if scanned QR is a foreign QR. |

#### 6.19 *Health Check*

| JSON Field ID     | Field Name                                | Field Type   | Req    | Resp   | Comments                                      |
|-------------------|---|--------------|--------|--------|---|
| mti               | Message Type Identifier                   | Numeric (4)  | 0800   | 0810   |   |
| process_code      | Processing Code                           | Numeric (6)  | 990000 | 990000 |   |
| transmission_time | Transmission Date Time                    | Numeric (10) | M      | M      | Echoed back.<br>MMDDhhmmss                    |
| institution_code  | Acquiring Institution Identification Code | Numeric (11) | O      | O      | Assigned by NETS.<br>Echoed back.             |
| message           | Message                                   | String(200)  |        | O      | Advanced Notification for system Status.      |
| response_code     | Response Code                             | String (2)   |        | M      | "00" if successful, otherwise it is a failure |

#### 6.20 *Get Loyalty Token*

| JSON Field ID     | Field Name                              | Field Type   | Req    | Resp   | Comments   |
|-------------------|---|--------------|--------|--------|------------|
| mti               | Message Type Identifier                 | Numeric (4)  | 0304   | 0314   |            |
| process_code      | Processing Code                         | Numeric (6)  | 000000 | 000000 |            |
| transmission_time | Transmission Date Time                  | Numeric (10) | M      |        | MMDDhhmmss |
| institution_code  | Loyalty institution identification code | Numeric(11)  | M      | M      |            |
| host_tid          | Terminal Id                             | String(8)    | M      | M      |            |
| host_mid          | Merchant Id                             | String(15)   | M      |        |            |

|                    |                                    |              |   |   |   |
|--------------------|------------------------------------|--------------|---|---|---|
| retrieval_ref      | Retrieval Reference Number         | String(20)   | M | M |   |
| approval_code      | Authorization Id Response          | String(6)    | M | M | Echoed back.  |
| SOF_uri            | Loyalty provider SOF URI           | String(200)  | M |   | SOF URI of the loyalty provider   |
| sof_account_id     | Identifier for end user wallet id. | String(100)  | O |   |   |
| txn_identifier     | Transaction Identifier             | String(2000) | M |   | Scanned QR code string.   |
| loyalty_data       | Loyalty Data                       | list of map  | M | O | For loyalty related data. Refer addendum for details. There should be minimum one loyalty data. |
| loyalty_token      | Loyalty token                      | String(80)   |   | O | For loyalty related data.   |
| communication_data | Communication Data                 | Json List    | O |   | Return response back to caller.   |
| response_code      | Response Code                      | String (2)   |   | M | "00" if successful, otherwise it is a failure   |

#### 6.21 *Loyalty Transaction status notification*

| JSON Field ID    | Field Name                | Field Type  | Req    | Res    | Comments                            |
|------------------|---------------------------|-------------|--------|--------|-------------------------------------|
| mti              | Message Type Identifier   | Numeric (4) | 0340   | 0350   |                                     |
| process_code     | Processing Code           | Numeric (6) | 500000 | 500000 |                                     |
| transaction_time | Time, Local Transaction   | Numeric(6)  | M      |        | hhmmss.<br>Echoed back in response. |
| transaction_date | Date, Local Transaction   | Numeric(4)  | M      |        | MMDD.<br>Echoed back in response.   |
| stan             | System Audit Trace Number | Numeric(6)  | M      |        |                                     |
| SOF_uri          | Loyalty provider SOF      | String(200) |        | M      |                                     |



# NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|                  | URI                                     |             |   |   |   |
|------------------|---|-------------|---|---|---|
| settlement_date  | Date of the settlement                  | Numeric(4)  | O |   | MMDD  |
| institution_code | Loyalty institution identification code | Numeric(11) | M | M |   |
| host_tid         | Terminal Id                             | String(8)   | M | M |   |
| host_mid         | Merchant Id                             | String(15)  | M |   |   |
| retrieval_ref    | Retrieval Reference Number              | String(20)  | M | M |   |
| sof_account_id   | Identifier for end user wallet id.      | String(100) | O |   |   |
| loyalty_token    | Loyalty token                           | String(80)  | M | M | For loyalty related data.                             |
| loyalty_data     | Loyalty Data                            | list of map | M |   | For loyalty related data. Refer addendum for details. |
| response_code    | Response Code                           | String (2)  | M |   | "00" if successful, otherwise it is a failure         |



## 6.22 *Terminal Batch Close*

| JSON Field Id                | Field Name                                      | Attrib      | Req              | Resp             | Comments   |
|------------------------------|---|-------------|------------------|------------------|--|
| mti                          | Message Type Identifier                         | Numeric (4) | 0500<br>0501     | 0510             | - 500 used for batch close and pre-batch close<br>- 501 used for batch close retry             |
| process_code                 | Processing Code                                 | Numeric(6)  | 000000<br>330000 | 000000<br>330000 | 000000 – Batch close<br>330000 – Pre-Batch close   |
| message_version              | Message version                                 | Numeric(2)  | C                |                  | Default version is 00. Mandatory for other versions.   |
| stan                         | System Audit Trace Number                       | Numeric(6)  | M                | M                |  |
| transaction_time             | Time, Local Transaction                         | Numeric(6)  | M                | M                |  |
| transaction_date             | Date, Local Transaction                         | Numeric(4)  | M                | M                |  |
| condition_code               | EFTPOS or eCommerce                             | Numeric(2)  | M                | M                | See Addendum Condition Codes. Echoed back in response.   |
| response_code                | Response Code                                   | String(2)   |                  | M                |  |
| host_tid                     | Terminal Id                                     | String (8)  | M                | M                |  |
| host_mid                     | Card Acceptor Id                                | String (15) | M                |                  |  |
| acceptor_name                | Card Acceptor Name                              | String (40) |                  | O                |  |
| npx_data                     | NPX Related Data                                | Map         | M                | M                |  |
| batch_number                 | Batch Number                                    | String (12) | M                | M                | Settlement Batch Number.   |
| batch_close_data_by_currency | Batch close data for the current terminal batch | List        |                  | C                | Mandatory if the settlement is successful. Refer the below section for settlement data format. |



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

| JSON Field Id                | Field Name                                      | Attrib      | Req | Resp | Comments   |
|------------------------------|---|-------------|-----|------|--|
| batch_close_data_by_currency | Batch close data for the current terminal batch | List        |     | M    | Parent Tag minimum one element will present.   |
| grand_total_amount           | Total batch close amount                        | Numeric(12) |     | M    | There will be – sign in the front to indicate if the total amount is in negative (i.e) refund more than sale amount. |
| grand_total_count            | Batch close transaction count                   | Numeric(4)  |     | M    |  |
| grand_total_currency         | Settlement currency                             | String (3)  |     | M    |  |
| grand_total_display_text     | Display text for totals                         | String (15) |     | M    |  |
| sof_summary                  | List of summary details by each SOF             | List        |     | O    | Parent tag   |
| payment_type_id              | Payment type id                                 | String (20) |     |      |  |
| total_display_text           | Display text for totals                         | String (15) |     |      |  |
| total_amount                 | Settlement amount for the SOF                   | Numeric(12) |     |      |  |
| total_count                  | Settlement transaction count for the SOF        | Numeric(4)  |     |      |  |
| trans_type_details           | Summary by trans type for the SOF               | List        |     |      | Parent tag   |
| name                         | Name of the trans type                          | String (25) |     |      |  |
| count                        | Transaction count by                            | Numeric(4)  |     |      |  |



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

|                    |   |             |  |  |             |
|--------------------|---|-------------|--|--|-------------|
|                    | trans type  |             |  |  |             |
| amount             | Settlement amount by trans type                   | Numeric(12) |  |  |             |
| trans_type_summary | Settlement summary by transaction type across SOF | List        |  |  | Parent tag. |
| name               | Name of the trans type                            | String (25) |  |  |             |
| count              | Transaction count by trans type                   | Numeric(4)  |  |  |             |
| amount             | Settlement amount by trans type                   | Numeric(12) |  |  |             |

## 7 Addendum

### 7.1 NPX Data

NPX data contains information that is needed by the NPX for each transaction type. Please refer to the transaction type's message specification for the list of information required.

#### 7.1.1 NPX Data Field Descriptions

| Tag  | Description                    | Attrib       | Sample / Comments  |
|------|--------------------------------|--------------|--|
| E103 | POS ID                         | Numeric(8)   | "000102"   |
| E104 | Transaction ID                 | Numeric (10) | "0000010203"<br>unique txn reference number from gateway   |
| E107 | EDC Batch Number               | Numeric (6)  | EDC Batch Number<br>Eg. "06123456"   |
| E201 | Source Amount                  | Numeric (12) | Eg. "000000000200" means \$2.00<br>Fixed 2 decimals places.  |
| E202 | Source Currency                | String (3)   | E.g. "SGD"   |
| E204 | Target Currency                | String (3)   | E.g. "SGD"<br>If absent, will assume target=source currency.   |
| E501 | EDC Unique Settle ID           | Numeric (12) | Eg. "201012031526"   |
| F101 | Transaction ID                 | Numeric (10) | "0000010203"<br>unique txn reference number from gateway   |
| F102 | Transaction Type               | String (99)  | "04SALE"   |
| F103 | Transaction Status             | String(99)   |  |
| F104 | Transaction Timestamp          | String(20)   | "2010-12-05 15:20:00"  |
| F111 | Original Source Amount         | Numeric (12) | "000000012300" = \$123.00  |
| F112 | Source Currency                | String (3)   | E.g. "SGD"   |
| F113 | Original Target Amount         | Numeric (12) | "000000012300" = \$123.00  |
| F114 | Target Currency                | String (3)   | E.g. "SGD"   |
| F116 | Target Currency<br>(Long Text) | String (99)  | "16Singapore Dollar"   |
| F117 | Conversion Rate                | Numeric (19) | "0000000100000250002"<br>NNNNNNNNNNNNRRRRRRX<br>Where<br>NNNNNNNNNNNN is the exchange rate (n-12, with<br>implicit 4 decimal minor unit, e.g. 000000012000<br>means 1.2000)<br>RRRRRR is the Margin Rate Percentage (n-6, with 4<br>decimal minor unit, e.g. 025000 means 2.5000%)<br>X is the number of decimal minor unit indicator for<br>the currency (e.g. 0/2/3) |
| F121 | Source Amount                  | Numeric (12) | "000000012300" = \$123.00  |
| F122 | Target Amount                  | Numeric (12) | "000000012300" = \$123.00  |
| F200 | No of Currency Groups          | Numeric (2)  | For txn, will be always 1 group  |
| F201 | Target Currency                | String (99)  | "03SGD" (group seperator by comma)   |
| F202 | Target Currency<br>(Long Text) | String (999) | "017Singapore Dollars"   |

|      |                               |               |   |
|------|-------------------------------|---------------|---|
| F203 | Target Currency<br>(ISO Code) | Numeric (99)  | "03702"   |
| F204 | Exchange Rate<br>(S->T)       | Numeric (999) | "0310000000100000000000002000250002"<br>NNNNNNNNNNNNNNMMMMMMMMMMMMMMMMRRRRRRX<br>Where<br>NNNNNNNNNNNN is the exchange rate (n-12, with<br>implicit 4 decimal minor unit, e.g. 000000012000<br>means 1.2000)<br>MMMMMMMMMMMMMM is the converted amount in<br>target currency (n-12, with implicit 2 decimal minor<br>unit)<br>RRRRRR is the Margin Rate Percentage (n-6, with 4<br>decimal minor unit, e.g. 025000 means 2.5000%)<br>X is the number of decimal minor unit indicator for<br>the currency (e.g. 0/2/3) |
| F209 | Receipt Header one            | String (99)   | Contains receipt header text  |
| F210 | Receipt Header Two            | String (99)   | Contains receipt header text  |
| F211 | Receipt Header Three          | String (99)   | Contains receipt header text  |
| F212 | Receipt Header Four           | String (99)   | Contains receipt header text  |
| F217 | Payment Type Id               | String (4)    | The payment type used as SOF.<br>If an Order Request is a success, the payment type<br>will be returned via the response.   |
| F218 | SOF Details                   | String (30)   | E.g. Masked mobile number or PAN.<br>Space-filled if empty.   |
| F219 | Bank Retrieval Ref#           | String (99)   | This field is used to send the bank retrieval ref #   |
| F800 | Marketing Message             | String (99)   | Marketing message to be printed on the receipt.   |
| F998 | PWAP Error Message            | String (99)   | "27Invalid Username / Password"<br>Will return this tag if DE39 = "***"   |
| F999 | PWAP Error Code               | Numeric (4)   | "0001"<br>Will return this tag if DE39 = "***"  |

7.1.2 NPX Data Details for Request

| Tag  | Transaction Query | Order Refund | Order Request | Payment Advice (OR) | Payment Advice (CI) | Payment Request (OR) | Payment Request (CI) | Void | Reversal | Device Logon | Device Logoff | Batch close |
|------|-------------------|--------------|---------------|---------------------|---------------------|----------------------|----------------------|------|----------|--------------|---------------|-------------|
| E101 |                   |              |               |                     |                     |                      |                      | C13  |          |              |               |             |
| E102 |                   |              |               |                     |                     |                      |                      | C13  |          |              |               |             |
| E103 | M                 | M            | M             |                     |                     |                      |                      | M    | M        | M            | M             | M           |
| E104 |                   | M            |               |                     |                     |                      |                      | M    | O        |              |               |             |
| E107 |                   | O            | O             |                     |                     |                      |                      | O    |          |              |               |             |
| E201 | M                 | M            | M             |                     |                     |                      |                      |      |          |              |               |             |
| E202 | M                 | M            | M             |                     |                     |                      |                      |      |          |              |               |             |
| E204 |                   | O            | O             |                     |                     |                      |                      |      |          |              |               |             |
| E501 |                   |              |               |                     |                     |                      |                      |      |          |              |               | M           |
| E601 |                   | C07          |               |                     |                     |                      |                      | C07  |          |              |               |             |

7.1.3 NPX Data Details for Response

| Tag  | Transaction Query | Order Refund | Order Request | Payment Advice (OR) | Payment Advice (CI) | Payment Request (OR) | Payment Request (CI) | Void | Reversal | Device Logon | Device Logoff |
|------|-------------------|--------------|---------------|---------------------|---------------------|----------------------|----------------------|------|----------|--------------|---------------|
| F101 | C                 | C            | C             |                     |                     |                      |                      | M    | C        |              |               |
| F200 | C                 | C            | C             |                     |                     |                      |                      | M    |          |              |               |
| F201 | C                 | C            | C             |                     |                     |                      |                      | M    |          |              |               |
| F202 | C                 | C            | C             |                     |                     |                      |                      | M    |          |              |               |
| F203 | C                 | C            | C             |                     |                     |                      |                      | M    |          |              |               |
| F204 | C                 | C            | C             |                     |                     |                      |                      | M    |          |              |               |
| F209 |                   |              |               |                     |                     |                      |                      | O    |          |              |               |
| F210 |                   |              |               |                     |                     |                      |                      | O    |          |              |               |
| F211 |                   |              |               |                     |                     |                      |                      | O    |          |              |               |
| F212 |                   |              |               |                     |                     |                      |                      | O    |          |              |               |
| F215 |                   |              |               |                     |                     |                      |                      | O    |          |              |               |
| F216 |                   |              |               |                     |                     |                      |                      | O    |          |              |               |
| F217 | C                 | C            | C             |                     |                     |                      |                      |      |          |              |               |
| F218 |                   |              |               |                     |                     |                      |                      |      |          |              |               |
| F219 | O                 |              | O             |                     |                     |                      |                      |      |          |              |               |
| F710 |                   |              |               |                     |                     |                      |                      |      |          |              | M             |
| F800 | O                 | O            | O             |                     |                     |                      |                      | O    | O        | O            | O             |
| F998 | O                 | O            | O             |                     |                     |                      |                      | O    | O        | O            | O             |
| F999 | O                 | O            | O             |                     |                     |                      |                      | O    | O        | O            | O             |

## 7.2 Communication Data

| JSON Field ID      | Field Name               | Field Type  | Req | Sample / Comments  |
|--------------------|--------------------------|-------------|-----|--|
| <b>type</b>        | Communication Type       | String(20)  | M   | Communication protocol identifier.<br>Supported values are: <ul style="list-style-type: none"> <li>• http</li> <li>• sms</li> <li>• solace</li> <li>• https_proxy</li> </ul>   |
| <b>category</b>    | Communication Category   | String(20)  | M   | Communication channel/method.<br>Supported values are: <ul style="list-style-type: none"> <li>• URL</li> <li>• MobileNumber</li> <li>• Model</li> <li>• AppleNotify</li> <li>• AndroidNotify</li> </ul>                              |
| <b>destination</b> | Notification Destination | String(500) | M   | Valid values for the various categories: <ul style="list-style-type: none"> <li>• URL – Fully qualified URL, including protocol and port.</li> <li>• MobileNumber – Numeric, prefixed with +, country and province codes.</li> </ul> |
| <b>addon</b>       | Add-on Parameters        | Map         | O   | Valid add-on parameters: <ul style="list-style-type: none"> <li>• external_API_keyID – The API KeyID to be used by API Gateway in communication to the external party.</li> </ul>  |

Sample:

```
"communication_data":[{
  "type": "http",
  "category": "URL",
  "destination": "http://10.101.122.1:8800",
  "addon": {"external_API_keyID": "xxxxxxx", "sample_field": "1234"}
},{
  "type": "sms",
  "category": "MobileNumber",
  "destination": "+6512345678"
}]
```

### Important Notes:

- If the receiving party of the message is hosted outside of NETS network, the listening service should be implementing TLS 1.2.



### 7.3 *Verification Data*

| JSON Field ID    | Field Name      | Field Type  | Req | Sample / Comments   |
|------------------|-----------------|-------------|-----|---|
| <b>parameter</b> | Parameter name  | String(20)  | M   | Supported values are: <ul style="list-style-type: none"> <li>• phone</li> <li>• mobile</li> </ul> |
| <b>value</b>     | Parameter value | String(200) | M   | Value to be verified.   |

*Sample:*

```
"verification_data":[{
  "parameter": "mobile",
  "value": "+6512345678"
}]
```

## 7.4 Loyalty Data Details

### 7.4.1 Loyalty Data Field Descriptions

| Tag               | Description                                      | Attribute   | Comments   |
|-------------------|--|-------------|--|
| original_amount   | Original Amount                                  | Numeric(12) | Original credit sales amount.  |
| redemption_amount | Redemption Amount                                | Numeric(12) | Redemption amount.   |
| program_id        | Program Identifier                               | String (20) | If Loyalty provider supports multiple programs/products, specify the identifier or code.         |
| institution_code  | Loyalty provider institution identification code | Numeric(11) | The institution identification code assigned to the Loyalty Provider.                            |
| approval_code     | Approval Code                                    | String(6)   | The approval code provided by the Loyalty Provider for authorized redemption requests.           |
| retrieval_ref     | Retrieval Reference Number                       | String(20)  | The unique reference number to the Loyalty transaction under the Loyalty Provider.               |
| payment_type_id   | Payment type id of the loyalty provider          | String(4)   | Payment type id of the loyalty provider. This field should be used to identify loyalty provider. |

### 7.4.2 Post-authorized Loyalty

For loyalty redemptions that are already authorized by the Loyalty Provider, and the subsequent transactions are for outstanding amounts.

| Tag               | Order Request |     | Order Query |     | Get Loyalty Token Request |     | Loyalty status notification |     | Notificati on | Transacti on status |
|-------------------|---------------|-----|-------------|-----|---------------------------|-----|-----------------------------|-----|---------------|---------------------|
|                   | Req           | Res | Req         | Res | Req                       | Res | Req                         | Res | Req           | Req                 |
| original_amount   | O             | O   | O           | O   | M                         |     | M                           |     | O             | M                   |
| redemption_amount | O             | O   | O           | O   | M                         |     | M                           |     | O             | M                   |
| program_id        | O             | O   | O           | O   | O                         |     | O                           |     | O             | O                   |
| approval_code     | O             | O   | O           | O   |                           |     |                             |     | O             |                     |
| retrieval_ref     | O             | O   | O           | O   |                           |     |                             |     | O             |                     |
| payment_type_id   |               | O   |             | O   |                           |     |                             |     | O             |                     |



7.5 *Condition Codes*

| Entity                | Code | Remarks              |
|-----------------------|------|----------------------|
| EFTPOS terminal       | 83   |                      |
| eNets / Online QR     | 85   | eCommerce, Pay@Table |
| static QR             | 86   |                      |
| Reserved              | 87   | Reserved             |
| Secure Environment QR | 88   | Nets Wallet          |

**7.6 Response Codes from NPS**

| Code      | Description                       | Condition | Explanation  |
|-----------|-----------------------------------|-----------|--|
| <b>00</b> | Approved.                         | Success   | A successful transaction.  |
| <b>01</b> | Close                             | Fail      | System is under Maintenance , Do not process transactions.   |
| <b>03</b> | Invalid Expiry date               | Fail      | If the source of fund for this transaction has an expiry date, and the expiry date has a wrong format or is already past the current date. |
| <b>03</b> | Invalid institution code          | Fail      | Institution code is not recognized.  |
| <b>05</b> | Do not honor.                     | Fail      | The authority for the source of fund has refused to authorize the transaction and advised us not to honor the transaction.                 |
| <b>06</b> | Error                             | Fail      |  |
| <b>09</b> | Request in progress               | Success   | This response code is returned to a Transaction Query, if the corresponding Sale or Order is still in progress.                            |
| <b>12</b> | No matching transaction found.    | Fail      | This response code is returned to a Transaction Query, if the corresponding Sale or Order is not found.                                    |
| <b>13</b> | Invalid amount.                   | Fail      | Transaction amount is invalid due to format errors or amount exceeding the limits.   |
| <b>15</b> | SOF not found.                    | Fail      | If the transaction's associated acquirer, bank or source-of-fund is not configured for the merchant, or is not configured in NPS.          |
| <b>30</b> | Message Format Error.             | Fail      | The message is not conforming to the NPS message specifications.   |
| <b>55</b> | Incorrect Pin.                    | Fail      | If the acquirer/bank/source-of-fund, requires the PIN, and the PIN is found to be incorrect.   |
| <b>58</b> | SOF not enabled for the Terminal. | Fail      | If the acquirer/bank/source-of-fund requires a Bank MID/TID to the transaction, and the merchant is not configured with the Bank MID/TID.  |
| <b>58</b> | Scheme Payload not found.         | Fail      | If the Scheme Payload not found inside SGQR Payload.   |
| <b>63</b> | Invalid Signature.                | Fail      | The signature accompanying to the message is invalid.  |
| <b>68</b> | Transaction timed out.            | Fail      | NPS did not receive any response from acquirer/bank/source-of-fund, and timed out.   |
| <b>76</b> | Transaction not found.            | Fail      | Based on the information provided, the transaction could not be found on the   |

|           |                            |      |  |
|-----------|----------------------------|------|--|
|           |                            |      | system.  |
| <b>92</b> | No route found to bank.    | Fail | Due to network issue or misconfiguration, the route to the acquirer/bank/source-of-fund cannot be established.                           |
| <b>94</b> | Order already exists.      | Fail | The QR code provided in the Order Request is not unique, and an Order Request with the same QR code already exists within NPS.           |
| <b>96</b> | Invalid order state.       | Fail | The matching Order to the Payment Advice/Request is found to be either expired or failed. The Payment Advice/Request cannot be accepted. |
| <b>99</b> | System Error               | Fail | Due to systematic Error or Database Error (slowness or other DB issue)   |
| <b>U9</b> | Pin Required.              | Fail | The acquirer/bank/source-of-fund, requires a PIN for the transaction.  |
| <b>ZZ</b> | Transaction Not Supported. | Fail | NPS does not accept the transaction due to invalid MTI and Processing Code.  |

**7.7 Response Codes from API Gateway**

| HTTP Status  | X-Status | Error Message                        | Condition  | Description   |
|--------------|----------|--------------------------------------|--|---|
| <b>*/200</b> | OK       |                                      | Sync Call OK   | Http Status will return whatever the client / 3rd party returns. If 3rd party does not provide HTTP Status, it will default to 200.   |
| <b>202</b>   | OK       |                                      | Async Call OK  |   |
| <b>500</b>   | E00      | Internal Server Error                | General Error  |   |
| <b>401</b>   | E01      | Invalid Key/Secret                   | Security Failure - KeyId / Secret Error                  |   |
| <b>401</b>   | E02      | Signature Error                      | Signature Encryption Error                               |   |
| <b>400</b>   | E03      | Malform Payload                      | Malform Payload  |   |
| <b>403</b>   | E04      | Signature Validation Error           | Signature does not match                                 |   |
| <b>500</b>   | E05      | Missing Required Parameter           | Missing required parameter                               |   |
| <b>500</b>   | E06      | Threatening Content Detected         | Threatening Content filter found a "threatening content" |   |
| <b>421</b>   | E11      | Remote Service Unavailable           | Unable to hit Remote Server                              |   |
| <b>421</b>   | E12      | Transport Message Error              | JMS Error  | If process took more than 20s, means response timeout when reading response from JMS (Solace)<br>else if process took less than 20s, means API GW unable to send message to JMS (Solace)                            |
| <b>500</b>   | E13      | Message Read Error                   | JMS Message Error  | If process took more than 10s, means timeout reading response from JMS.<br>Else if process took less than 10s, means received Response from JMS, but unable to read / process the message or invalid response data. |
| <b>500</b>   | E14      | Invalid Response Message from Client | Response Error   |   |
| <b>500</b>   | E15      | Internal Security Error              | Error Generating Security/validation                     | Error when generating security / hash / key when forwarding request to backend  |

|              |      |                                  |   |   |
|--------------|------|----------------------------------|---|---|
|              |      |                                  | data for Backend Services                       | application.  |
| <b>500</b>   | E16  | Internal Security Response Error | Error validating security from backend services | Response received from backend application, with invalid security / hash / key.   |
| <b>501</b>   | E20  | Not Implemented                  | Not Implemented                                 | API Not ready to be consumed. Implementation not done.  |
| <b>403</b>   | E21  | Invalid Parameter                | Invalid Parameter                               |   |
| <b>*/200</b> | OK   |                                  | OK  | Http Status will return whatever the client / 3rd party returns. If 3rd party does not provide HTTP Status, it will default to 200. |
| <b>500</b>   | E900 | Internal Server Error            | General Error                                   |   |
| <b>404</b>   | E901 | Resource Not Found               | Method / URL Not Found                          |   |
| <b>403</b>   | E902 | Forbidden                        | API Key Not Present in Request                  |   |
| <b>403</b>   | E903 | Forbidden                        | API Key Does Not Exist                          |   |
| <b>403</b>   | E904 | Forbidden                        | API Key is Not Authorized                       | API Key is not authorized to access the requested Method / URL  |
| <b>400</b>   | E905 | Malform Payload                  | Payload Error                                   | Unable to parse JSON payload for RSA/AES decryption   |
| <b>400</b>   | E906 | Security Error                   | RSA Decryption Error                            |   |
| <b>400</b>   | E907 | Security Error                   | AES Decryption Error                            |   |
| <b>503</b>   | E908 | Service Unavailable              | Backend Service Unavailable                     | Backend Service unavailable / Unreachable   |
| <b>500</b>   | E909 | No Response                      | Gateway (backend) Timeout.                      |   |
| <b>500</b>   | E910 | Signature Error                  | Signature Error                                 | Error Generating Signature, or Error validating Signature   |



## 7.8 Message Samples

### 7.8.1 Order (with NPS generated QR)

#### Request:

```
{
  "mti": "0200",
  "process_code": "990000",
  "amount": "000000000100",
  "stan": "001002",
  "transaction_time": "084356",
  "transaction_date": "0206",
  "entry_mode": "000",
  "condition_code": "83",
  "institution_code": "200000000001",
  "retrieval_ref": "206026360706",
  "host_tid": "39067101",
  "host_mid": "11139067100",
  "getQRCode": "Y",
  "communication_data": [{
    "type": "https_proxy",
    "category": "URL",
    "destination": "https://netspay.uat.net:8801/secapi/notify/dynamic",
    "addon": {
      "external_API_keyID": "8bc63cde-2647-4a78-ac75-d5f534b56047"
    }
  }],
  "npx_data": {
    "E103": "39067101",
    "E201": "000000000100",
    "E202": "SGD"
  },
  "invoice_ref": "100000020180206026360706"
}
```

#### Response:

```
{
  "mti": "0210",
  "txn_identifier": "NETSQPAY039067101####111390671000010022b737ae6000000010000010ed945368WX-TESTING NPS2-W4680",
  "process_code": "990000",
  "amount": "000000000100",
  "stan": "001002",
  "transaction_time": "084356",
  "transaction_date": "0206",
  "entry_mode": "000",
  "condition_code": "83",
  "institution_code": "200000000001",
  "response_code": "00",
  "host_tid": "39067101",
  "invoice_ref": "100000020180206026360706",
}
```



"qr\_code":

```
"iVBORw0KGgoAAAANSUHEUgAAAPoAAAD6CAYAAACI7Fo9AAAMdUIEQVR42u3d7ZWIMBQAUPrxp7XYgnVMG7YwtfB3
6nFlxp1BCCpKkofed84cXL8WITeBRxKaOXDi5aOxCYQAXQgBuhACdCEE6EII0IUQoAshQBdCgC4E6EII0IUQoAshQBdCgC6EA
F0IAboQAnQhQBdCgH7HlzVN0b9b///c9Xv2/c9uj7m/J/f/n3v/Pvt7c78/WvkGHXTQQQcddNBBBx100EF/ZkMsnlBYGHR2BE
gwqLkrxtwVa+7vi16+QQcddNBBBx100EEHHTQSxacc2sm2aMmf2hVj6Yo3d0WSe3/WT6CDJroolMOOuibgw466KBH3hD
RYZZOFpV0juXuoJR7+4AOOuibgw466KCDDJroolOeb8dGT97k3p7R4NYedLP28g066KCDDJroolMOOuibgw14zmVV6UETuZF
bpgpS7Yqq9f3OXT4NaQAcddNBBBx100EEHHTQ1Q48+OaTxvR45+Qm6guZ10EH3utdBB93Xgd9zVF68sC1TbRROlIve/1LQ
gpvA3TQQQcddNBBBx100EEH/c1g1Z4oIVoyqHQHprJt8gVEigggw466KCDDJroolMOevTkSLTkWLTJKZdO5tUuD6UrttKfBx
100EEHHTTQQQcddNBBXzL5sTTE6JMLi4Yrz7RRu1BUJErdbBBx100EEHHTTQQQcd9NIdUKINillbQYp2Q4fSfDxaksmggw4
66KCDDJroolMOOuhLwq99k8PSycfagzhyb6/aEKP/npovBeigggw466KCDDJroolIP+ftDXPqgh+kQJ0ZKjtZNzpfD/tloSdNBBBx1
00EEHHTTQQQe9ZEGOdppF0usbPdmZuzyU3p/Rkquggw466KCDDJroolMOOuglo/bEDqUn6M+dHlp208Jog0LeKfGGOuibg
w466KCDDJroolNeeyKfTd+ksXZBLT05ZumCH33iDtBBBx100EEHHTTQQQcd9EjJuGj/f+IBL7kLzu0ORaWTmbmTlaUrEtBBBx
100EEHHTTQQQcd9Mg7MtqjdoFtfQgjtrbo3SyN3rDBTroolMOOuibgw466KCDvuaOPXFB7WRc6UEvOW+6ubabailOOuibg
w466KCDDJrooOeElTVZUroiWPvklTertlTe+SuaEEHHTTQQQcddNBBBx100HPCqH0Tw+g7snRFUTu5trb1iTyOCfQANaaof9
UEdNBBBx100AXooFdLztWeTFK8VkuQRbyaYQZ0ATrooAvQQQddgB45Gvc7GXLX5z8Op7/9eXn+2+0f32i972tPf/vP9rj/al+
H87L792Gw7L9+7X1tfx2H67yWf59+R9TyFy35B/pSzn+Bbrvl6a9ttufl3+O50W72v99xPH/Hvtfkm81hkb/t6e94ZX27Zf/3jB9
vz++fepz6zjff+y21VclOulioG/PBXF7xrn9LZjff+FEZjv6v2pQDe79gfraNkBggl6ff9h55a57U9/I9JflfyoINeBnrTK4QDSHMO
4zf7Xmvea9EvwB4SsA8J2OP3bXeH0bqOHZfjyuricdODI3pc8vvPn/s8gB4pGfdyEwfs9skWclSw7z2v3AxbS0anRb96SN7eej
e9g7d+4fKicpp8jelXm/ueP6Zz6e/Z/TcsfxNNSPFRBH0BQtC+w19CvjguVmH7n8F/nCC3iXxth/txPJw4/W/5ff6dkch5+Xw7+L
5Eb7m7whl4nvSnx+jnVqH9ta++f0g6OA7nwdNALT0jpluni8Z3JulsK4vNqPSC0u791+V2fj/vXpb9NHvn89YKUqEhP3w066
Nmgt8PCfII5BntufTbbWYfui+KYG6NEYzmv35A4HbiVJZ+/bs1FLgT0IMm4ZzdsuA4Sfxiaixa4nTqEv9JC/11e2/5eBqsGPXEa0
T7Qol9sn6V+y8d+cPh+X4teu/y9TYeZ14Q+cXj6dfwrhL3X22st2yaRbArQov+CmtWipy6PnfManwu07F2Fuet1qDkeQQc9H/
TRexkfZte7bdCy97Pet1vr5jsZ11026y6Nbe9epl+bBz1xNLKb0aJ/HMAJvltt1SRen1qeP9dtnysVBeigZ2/R+0mh6Wvj4m725f
Xtn+X13bP94ybd+ieOA/+2M/dYOOjgquX7VLLqevv56MD00MI43JXFMVr+NRlpNQ5+QBHIQKI+foqQ4zg95vo8fnZb/jzK5
9DHqqEtvN/l6uf/1UrilZSWbweb65cvm4uio9qCVmnBBzwx91OJMnVMnD0cHnWk245bvp0XvoZ58PGj1h73kZkLvX177X
d9HBut0+YiJnm/pTJBTHWSufG6zBR30wi36FPR6zY6V73Zoi8zqOWXQ/d+/uGJUXkd+MRVivFyO/F8c6XCaEAHPSf0xOHkts
z5b8UwPiz9gZ7o3nn6zOhr+D38tP08Lb+6oain93bDTy+en3jP5/n5r/lZ9xGm3aFugegqi80+fY1+dwA9SjJubTeiv+/QfTurJ1u
7mThXHTzXPza88xoE/3uZ0HvOg7N7Bk477RiOKonOxsEvWGHgY2bdXxf6TJg3B41cyeKXikTvs3bGoXs6H7HQb0kk+brzdNB
BzwZ9hPYemF/H8aW2qWvH1XrGPZl136Q6yyzVM+6QOK3QooOeCXo7JxmXPLTttZajiSv+t+j7OtBtVf7mZNOxup/b59n+r
x3VylSk2eAHjcZV3qQwelbejFoks86PB1hGveiWzLrvt0dHoDav3Q4A/rX9DX0YT/1Oc+3U5NZ3NGtNtqgqprJotBnQh/14Jp7
qD15jbgZQE/NHjNjeX58fzJuPGR29qH3zXH683vlpSefaB4qb6CD/ICL/miWPH2u3pthZjhHXL9DTH/OuKnn/88ZN6tFT3Rk2T
3y25rJtJHJbsHDI6QbvermbHPQQX8Q+kJZ8q92ctLGQ7NPIL+v9X6mRT8OhszOPkcftOyXh+PbGVNVXesnP6/yAb1QMq50Z
N/Qv9nfXu+tRxnNv8m5y++7a764Zmr+uLb32rwRbO3nYXze/GwSbdMbP36z91szeG9i1NvM6Z5LJ8tqT4YK+kruptoeRckjRt
BBF6CDDroAHfRikzWWTraldcPPfZPE3DcNBR10ATroolMOOuibgw76mndM7UE2InYyrnRyruq2AR100EEHHTTQQX9v6Gu
bxz56zgT0F4We+6aJpScaqJ3My11xrB1S6Yo+UkUAOuibgw466KCDDJrool8f9KV3dOIBctGSSWvqkFGjoqrddwap2RQC66KC
DDJroolMOOuibgw54zuROtIEdPFpbuMBT9/yudXMvdkIEOOuibgw466KCDDJroolNdMxuXekKU7heQf9BEt+RmtoXilOZGggw4
66KCDDJroolMOOujRk2Glf1+0iR9yJ6uibZ/SyRlg55ABx100EEHHTTQQQcd9PeDXntD5E4mla7lSkfp5Fnt9Y82iOhlBrWADjr
oolMOOuibgw466C8BPTeMaDdwLZ+OZKHpZNZpTvUvG0yDnTQQQcddNBBBx100EEvAr32DQtKF6TSN4BYW7lRwvKx9M
QYkQJ00EEHHTTQQQcddNBBfz/opTds7oIUbfLH6MnG3P/f2mDLuoMOOuibgw466KCDDJrokaCX3tHRJgeMXjGtrWKJnix+2
0EtoIMOuibgw466KCDDnpl6GsbFBB90Enu/VG7Ylm6PCy9v9Ze8YAOOuibgw466KCDDJro7w299laLpNF6YJdu+CWrljTS
RiUAvoolMOOuibgw466KCDHhL6NKhLF4TSya7cFuftipqD0CKtr1ABx100EEHHTTQQQcddNDXHK+W7CudLiw2UuftQUq1
tx/oolMOOuibgw466KCDVqSMGonL0rvyNldQI7tJojRjXotPZkn6KCDDJroolMOOuibgw56lGRcJg0ZfYL/3AUtGrRo5SFa+Qc
ddNBBBx100EEHHTTQQS+ZrCqdvCq9o99tkErp8pE7ObfmQS6ggw466KCDDJroolMOOujRoJf+Pbm3T+5kYO3vK52My70/J
ONABx100EEHHTTQQQcddNDjdVBYW4eSaMm4V7+JJeigggw466KCDDJroolMOek7opb+/dgeY3B1ASicPSyfrSu+v2uUDdNB
BBx100EEHHTTQQQe9ZnKi9mSD0TtE1P79tSvO6IOUisMGHXTQQQcddNBBBx100EEXQsQM0IUAXQgBuhACdCEE6EII0IU
QoAshQBdCgC4E6EII0IUQoAshQBdCgCEAF0IAboQAnQhQBdCvGr8A8M/pdhRFAeAAAAAEIFtKSuQmCC"
```



### 7.8.2 Order (self generated NPS QR)

**Request:**

```
{
  "npx_data": {
    "E103": "37055001",
    "E201": "00001800",
    "E202": "SGD",
    "E601": "03CUP"
  },
  "mti": "0200",
  "txn_identifier":
"NETSQPAY037055001####111351197000028572B73F796010000180000010582A31A8eNETS QR    4f02",
  "process_code": "990000",
  "amount": "1800",
  "stan": "002857",
  "transaction_time": "093830",
  "entry_mode": "000",
  "condition_code": "83",
  "institution_code": "20000000001",
  "transaction_date": "0206",
  "host_tid": "37055001",
  "host_mid": "11135119700",
  "invoice_ref": "20180206093830275"
}
```

**Response:**

```
{
  "retrieval_ref": "82382527000000000375",
  "mti": "0210",
  "txn_identifier":
"NETSQPAY035119901####111351199000003752B73FC8C010000850000010578EB6ECNETSDEV03    4804",
  "process_code": "990000",
  "amount": "8500",
  "stan": "000375",
  "transaction_time": "095940",
  "transaction_date": "0206",
  "entry_mode": "000",
  "condition_code": "83",
  "institution_code": "20000000001",
  "response_code": "00",
  "approval_code": "341449",
  "host_tid": "35119901",
  "invoice_ref": "20180206095940286",
  "npx_data": {
    "F101": "10524331",
    "F200": "01",
    "F201": "SGD",
    "F202": "Singapore Dollar",
    "F203": "702",
    "F204": "00000001000000000000085000000000",
  }
}
```



```
        "F217": "NETS"
    }
}
```

### 7.8.3 Order Reversal

#### Request:

```
{
  "npx_data": {
    "E103": "37055001"
  },
  "mti": "0400",
  "retrieval_ref": "020518551027",
  "txn_identifier": "NETSQPAY037055001####111351197000028562B73288E0100001800000103CAFF9B7eNETS
QR 78e6",
  "process_code": "990000",
  "amount": "1800",
  "stan": "002856",
  "transaction_time": "185510",
  "entry_mode": "000",
  "condition_code": "83",
  "institution_code": "20000000001",
  "transmission_time": "0205190014",
  "transaction_date": "0205",
  "host_tid": "37055001",
  "host_mid": "11135119700",
  "invoice_ref": "20180205185510277"
}
```

#### Response:

```
{
  "retrieval_ref": "020518551027",
  "mti": "0410",
  "txn_identifier": "NETSQPAY037055001####111351197000028562B73288E0100001800000103CAFF9B7eNETS
QR 78e6",
  "process_code": "990000",
  "amount": "1800",
  "stan": "002856",
  "transaction_time": "185510",
  "transaction_date": "0205",
  "entry_mode": "000",
  "condition_code": "83",
  "institution_code": "20000000001",
  "response_code": "00",
  "host_tid": "37055001",
  "host_mid": "11135119700",
  "transmission_time": "0205190014"
}
```



#### 7.8.4 Order Enquiry

##### Request:

```
{
  "mti": "0100",
  "txn_identifier":
"NETSQPAY099998888#####23976000332d0fa8014010000090000010B796AB5F      enet",
  "process_code": "330000",
  "stan": "000332",
  "entry_mode": "000",
  "condition_code": "00",
  "institution_code": "20000000001",
  "host_tid": "99998888",
  "host_mid": "000000000023976",
  "invoice_ref": "20170511152114446",
  "npx_data": {
    "E103": "99998888"
  }
}
```

##### Response:

```
{
  "mti": "0110",
  "txn_identifier":
"NETSQPAY099998888#####23976000332d0fa8014010000090000010B796AB5F      enet",
  "process_code": "330000",
  "stan": "000332",
  "entry_mode": "000",
  "condition_code": "00",
  "institution_code": "20000000001",
  "response_code": "00",
  "host_tid": "99998888",
  "invoice_ref": "20170511152114446",
  "npx_data": {
    "F101": "138745",
    "F102": "22",
    "F103": "12",
    "F104": "",
    "F111": "9.0000",
    "F112": "SGD",
    "F113": "9.0000",
    "F114": "SGD",
    "F116": "Singapore Dollar",
    "F117": "00000001000000000002",
    "F121": "9.0000",
    "F122": "9.0000"
  }
}
```



#### 7.8.5 Notification

**Request:**

```
{
  "retrieval_ref": "98446753000000105398",
  "mti": "0340",
  "process_code": "000000",
  "amount": "000000001200",
  "stan": "533747",
  "transaction_time": "104045",
  "transaction_date": "0205",
  "response_code": "00",
  "host_tid": "35036103",
  "host_mid": "11135036100",
  "SOF_uri": "http://netspay.com/",
  "currency_code": "SGD",
  "payment_type_id": "NETS",
  "transaction_id": "10524102",
  "transaction_status": "04"
}
```

**7.8.6 Logon****Request:**

```
{
  "mti": "0800",
  "process_code": "930000",
  "stan": "000083",
  "transaction_date": "0131",
  "transaction_time": "030422",
  "nii": "002",
  "host_tid": "35039103",
  "host_mid": "11135039100",
  "npx_data": {
    "E103": "35039103"
  },
  "communication_data": [{
    "type": "http",
    "category": "URL",
    "destination": "http://10.101.254.121:8800"
  }]
}
```

**Response:**

```
{
  "mti": "0810",
  "process_code": "930000",
  "stan": "000083",
  "transaction_time": "030422",
  "transaction_date": "0131",
  "response_code": "58",
  "host_tid": "35039103",
  "nii": "002"
}
```

#### 7.8.7 Transaction search

##### Request:

```
{
  "mti": "0100",
  "process_code": "500000",
  "search_count": "1",
  "host_tid": "35036103",
  "host_mid": "11135036100"
}
```

##### Response:

```
{
  "mti": "0110",
  "process_code": "500000",
  "host_tid": "35036103",
  "transactions": [{
    "amount": "8000",
    "currency": "SGD",
    "approval_code": "",
    "response_code": "00",
    "transaction_date": "0130",
    "transaction_time": "191653",
    "stan": "533232",
    "retrieval_ref": "20180130010000017528",
    "payment_type": "NETW"
  }]
}
```

#### 7.8.8 Terminal batch close

##### Request:

```
{
  "mti": "0500",
  "process_code": "000000",
  "stan": "000509",
  "transaction_time": "112640",
  "transaction_date": "0903",
  "host_tid": "99998888",
  "host_mid": "11139067100",
  "batch_number": "000003",
  "npx_data": {
    "E103": "39067101",
    "E501": "201012031526"
  }
}
```

##### Response:

```
{
  "mti": "0510",
  "process_code": "000000",
}
```



```
"stan": "000604",
"transaction_time": "175225",
"transaction_date": "0918",
"condition_code": "83",
"response_code": "00",
"host_tid": "99998888",
"batch_number": "000008",
"batch_close_data_by_currency": [{
  "grand_total_amount": 97.69,
  "grand_total_count": 5,
  "grand_total_currency": "SGD",
  "grand_total_display_text": "TOTALS",
  "sof_summary": [{
    "payment_type_id": "NETS",
    "total_amount": 97.69,
    "total_display_text": "TOTALS",
    "total_count": 5,
    "trans_type_details": [{
      "name": "SALES",
      "count": 5,
      "amount": 97.69
    }]
  }],
  "trans_type_summary": [{
    "name": "SALES",
    "count": 5,
    "amount": 97.69
  }]
}]
}
```

#### 7.8.9 Health Check

##### Request:

```
{
  "mti": "0800",
  "process_code": "990000",
  "transmission_time": "0205190014"
}
```

##### Response:

```
{
  "mti": "0810",
  "process_code": "990000",
  "transmission_time": "0205190014",
  "message": "system will be under maintenance from 2 to 6 am ",
  "response_code": "00"
}
```