



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

**NPS**

**Message Specification in JSON**

V2.4

**Change History**

<b>Version No.</b>	<b>Revision No.</b>	<b>Description</b>	<b>Approval Date</b>
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 Added Loyalty token to payment query Removed mandatory for retrieval_ref in loyalty data for Get Loyalty token request 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 Added new parameter Message Added Message Sample For Health Check	09 Nov 2018
1	7	Added new Response code Updated pay_details length	12 Nov 2018
1	8	Added SOF account id in get loyalty token and transaction status message. Added loyalty fields in transaction status message Condition code added to transaction state message. Removed loyalty data in response for Get token request Minor updates in verify QR. 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. Transmission time mandatory CI pay advice for UPI QR	10 Dec 2018
2	0	Added loyalty transaction status notification message Added loyalty data list to Transaction status, Transaction search, static notification and order query 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



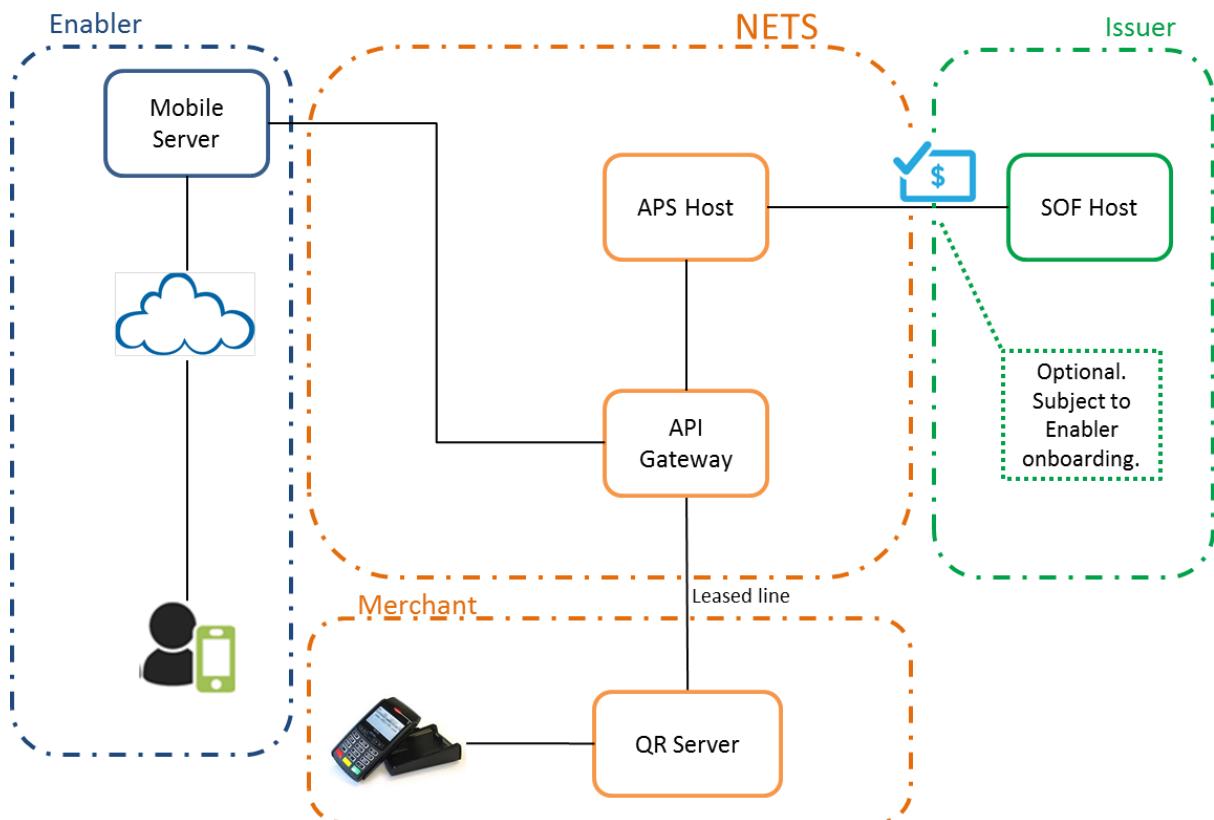
5.2.13	Entry Mode.....	22
5.2.14	Condition Code.....	22
5.2.15	Acquiring Institution Identification Code .....	22
5.2.16	Retrieval Reference Number.....	22
5.2.17	Original Request Type .....	23
5.2.18	Approval Code.....	23
5.2.19	Response Code .....	23
5.2.20	Card Acceptor Terminal Identification (TID) .....	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

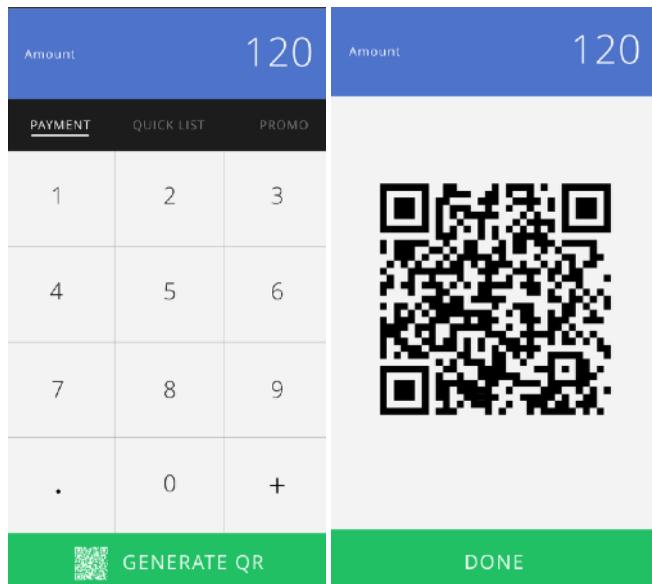
This document defines the acquiring interface specifications provided for the integration with NETS Alternate Payment Service.



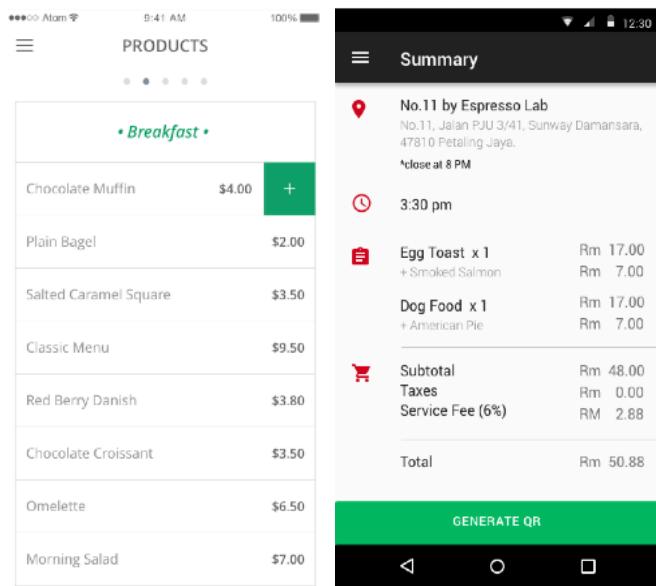
## 2 Payment Flow

### 2.1 Virtual Terminal Screen Flow

Merchants could enter amount to generate QR



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

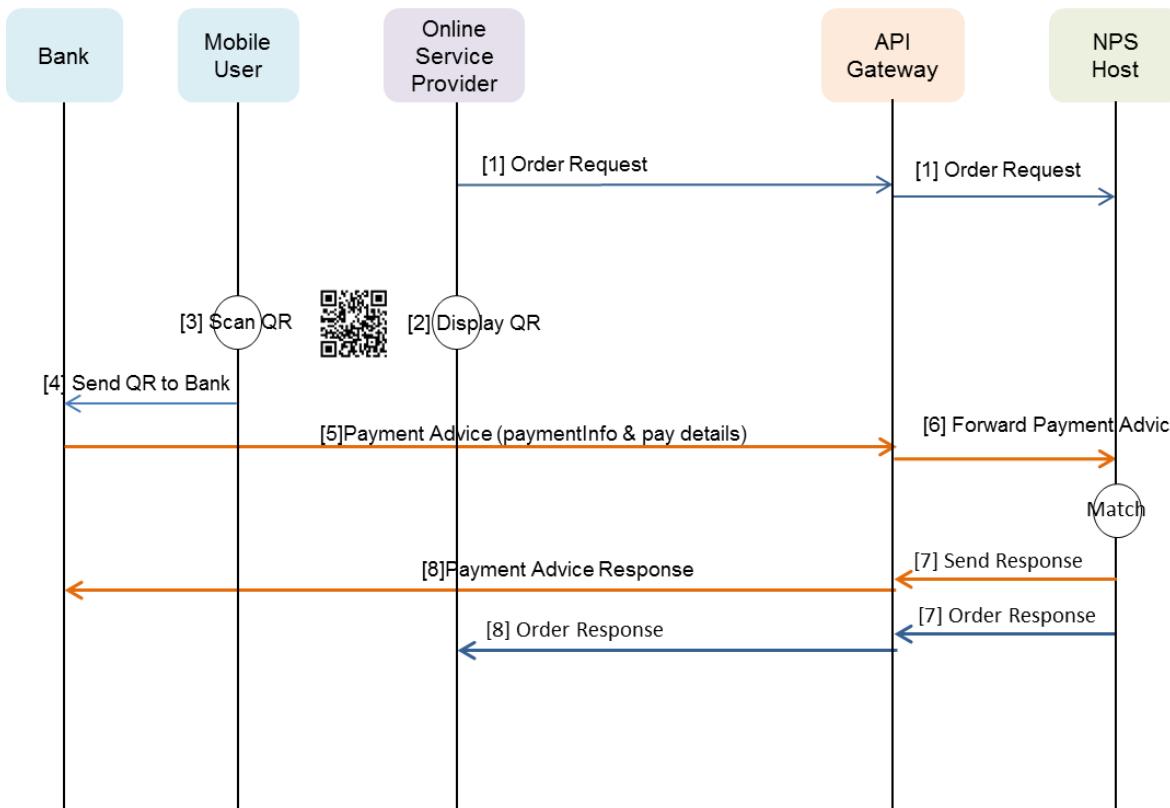


## 2.2 Order request/response flow (Online Services model)

### 2.2.1 Order Request with Get QR

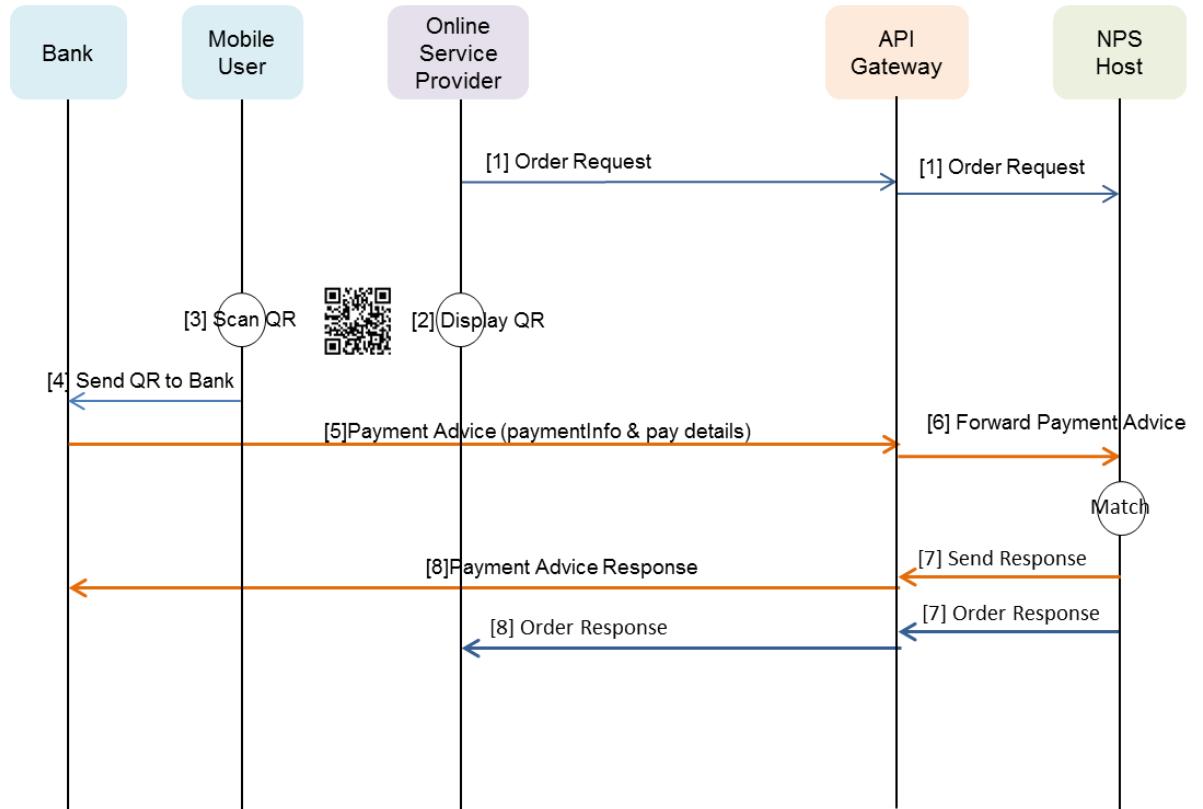
The high-level payment flow is as shown below.

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. 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. The mobile server/bank then sends Payment Advice Request to NPS via NETS API Gateway. 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

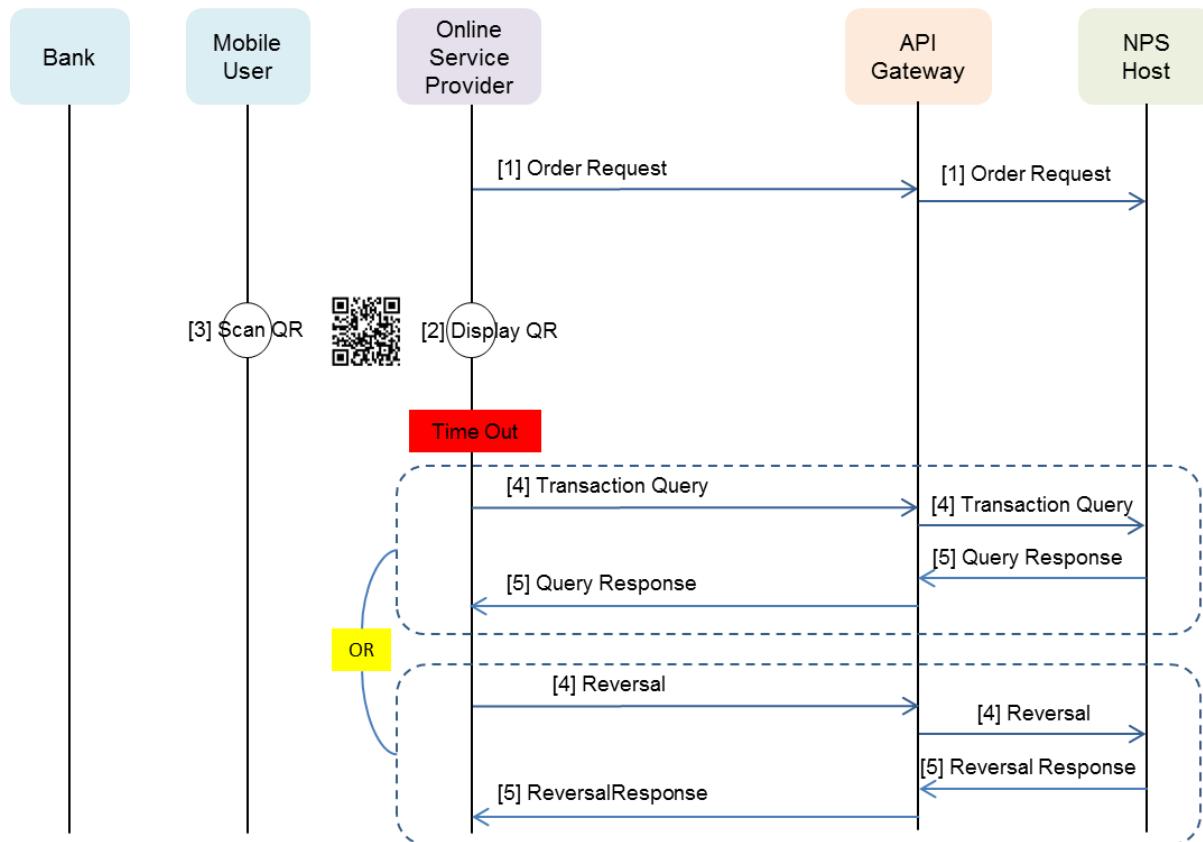


Step	Description
1	The Online Service Provider self generates a QR and sends an Order request to NPS Host via NETS API Gateway.
2	The Online Service Provider displays the QR.
3	User scans the QR code using a mobile client. The mobile client sends a payment request to its mobile server/bank.
4	The mobile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

### 2.2.3 Time Out Scenario

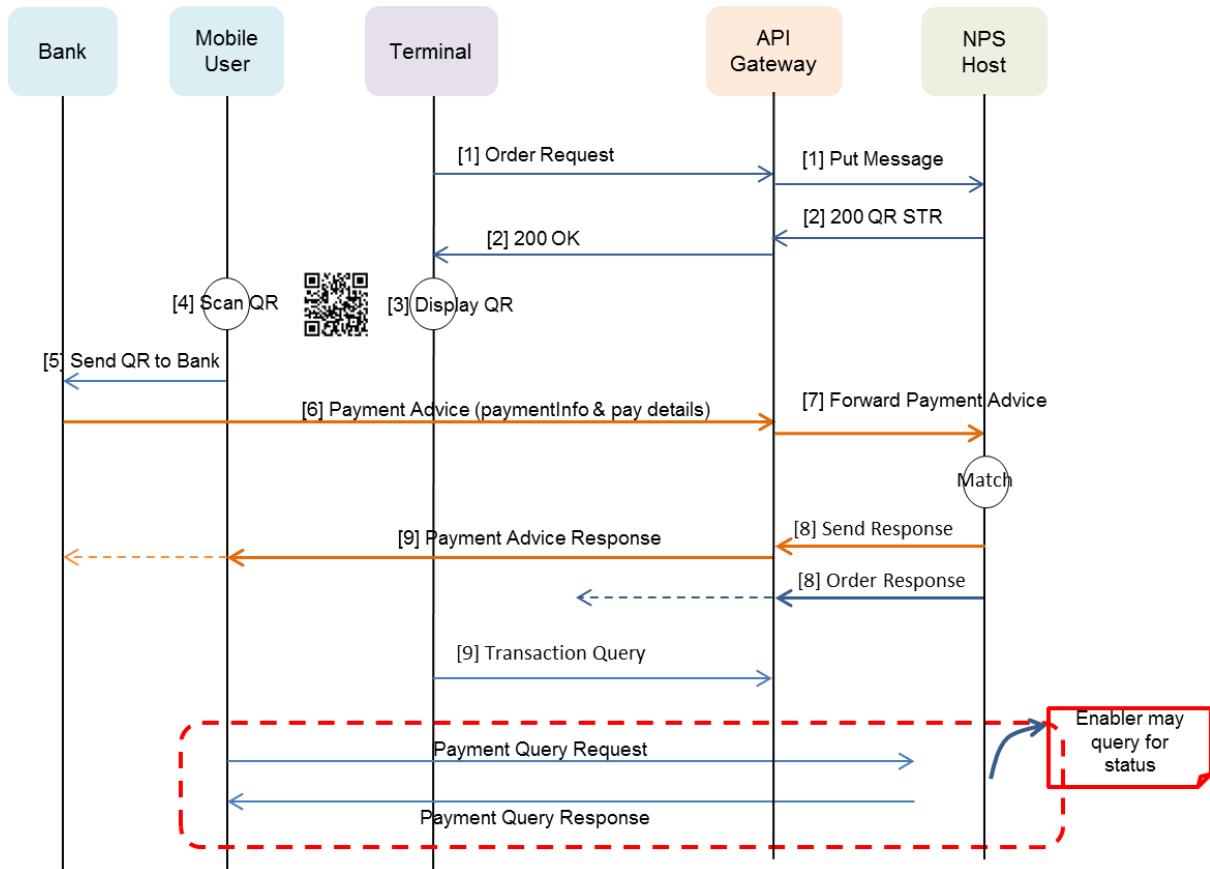
In the event of sending an Order Request and a time out occurs while waiting for the Order Response, the Online Service Provider can do:

- 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.



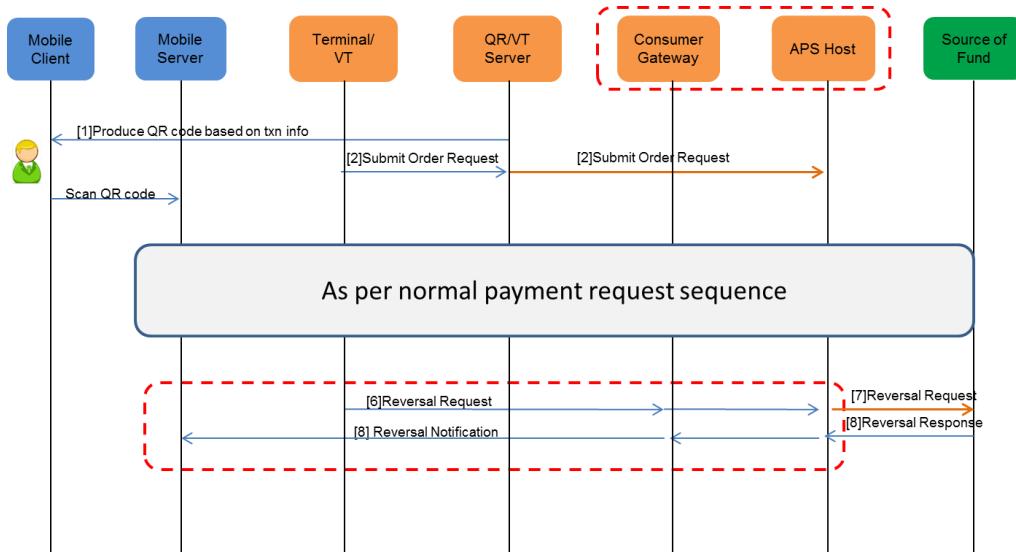
### 2.3 Order request/response flow (Terminal model)

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. 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. The mobile server then sends Payment Advice Request to NPS via NETS API Gateway with positive response '00' or negative response '05'. 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.

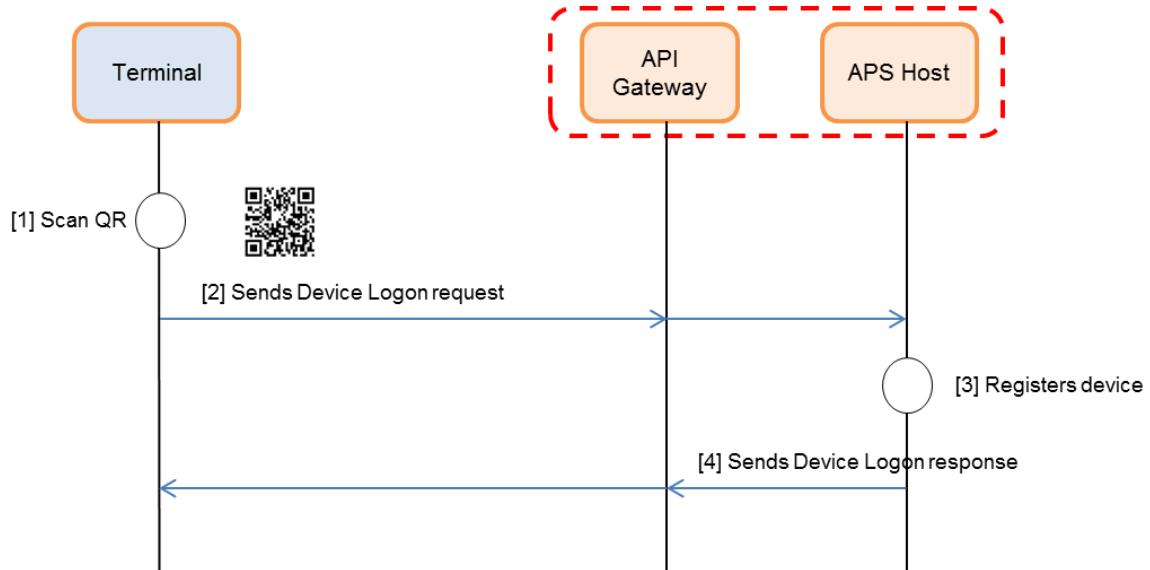
## 2.4 Payment reversal flow



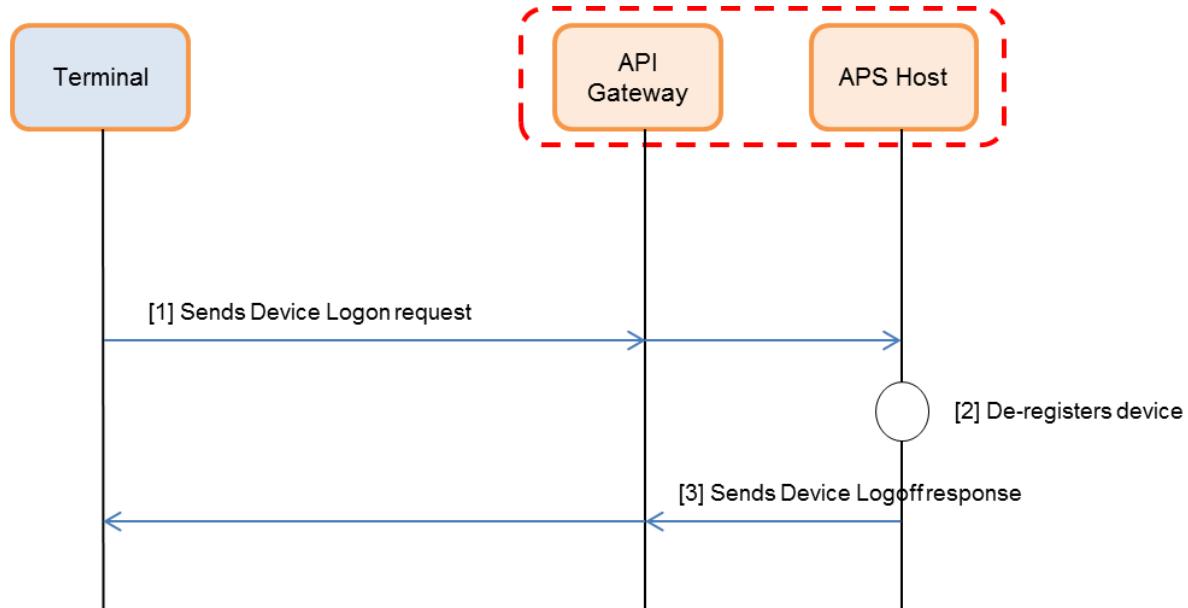
Step	Description
1-5	As per normal payment sequence, i.e. transaction is approved.
6	The Terminal/VT or QR/VT server may initiate a reversal because the transaction cannot be completed due to unable to connect to the Terminal/VT.  The QR/VT server sends a reversal to NPS. Reversal can be sent after 5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

## 2.5 Device Logon

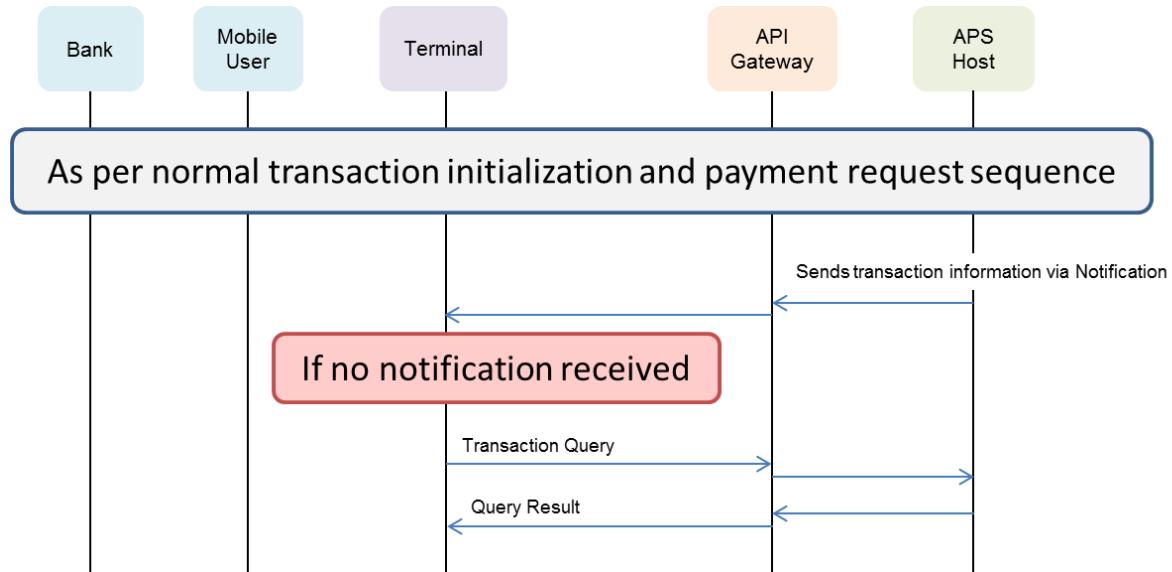
This flow is applicable for Static QR Code only.



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

SIT	<a href="https://uat-api.nets.com.sg:9065/sit/merchantservices">https://uat-api.nets.com.sg:9065/sit/merchantservices</a>
UAT	<a href="https://uat-api.nets.com.sg:9065/uat/merchantservices">https://uat-api.nets.com.sg:9065/uat/merchantservices</a>
Production	<a href="https://api.nets.com.sg/merchantservices">https://api.nets.com.sg/merchantservices</a>

#### 3.2 Service Paths

##### For generic merchant services

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

##### For Dynamic QR Codes

Order Request	/qr/dynamic/v1/order/request
Transaction Query	/qr/dynamic /v1/transaction/query
Order Reversal	/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":"00000000123","stan":"100001","transaction_time":"180647","transaction_date":"0313","entry_mode":"000","condition_code":"85","institution_code":"2000000001","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



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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

*YTVmMWVkM2RiNzY0NTU5ZTQyN2Q0NThmYTk0ZTJmNTk3MGI1OWQ3ZmQyZWZiMDNIYmEyYjAwM2M0NDQ1NGZkNw==*

## 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> Each data element represents 1 byte
an	<b>Alpha-numeric characters (1-9, a-z, A-Z)</b> Each data element represents 1 byte
ans	<b>Alpha-number and special characters (All characters)</b> Each data element represents 1 byte
b	<b>Binary data</b> Each data element represents 1 bit. (8 data elements = 1 byte)
n	<b>Numeric data</b> Each data element represents 1 nibble (2 data elements = 1 byte)
ns	<b>Numeric and special characters</b> Each data element represent 1 byte
z	<b>Track 2 data, as read from the magnetic stripe.</b> 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. 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\_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. 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. 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 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. Echoed back in response.
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.
approval_code	Authorization Id Response	String(6)		O	Echo of the same parameter from the matched payment advice/request.



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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. Echoed from request.
transaction_time	Time, Local Transaction	Numeric(6)	M	M	hhmmss. Echoed from request.
transaction_date	Date, Local Transaction	Numeric(4)	M	M	MMDD. 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 Echoed from request.
host_mid	Card Acceptor Identification Code	String(15)	M		Assigned by NETS :pass-through Echoed from request.
npx_data	NPX Data	Map	M		NPS additional information required. See NPX Data section for more details.
communication_data	Communication Details	List	C		Applicable for Notification. See Addendum: Communication Data section for more details.
verification_data	Verification Details	Map	C		Applicable for verification purposes. 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. 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. Echoed from request.
transaction_time	Time, Local Transaction	Numeric(6)	M	M	hhmmss. Echoed from request.
transaction_date	Date, Local Transaction	Numeric(4)	M	M	MMDD. 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 Echoed from request.
host_mid	Card Acceptor Identification Code	String(15)	M	M	Assigned by NETS :pass-through 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. 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



					response code.
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.
txn_identifier	Transaction Identifier	String(2000)			Scanned QR code string.
invoice_ref	Invoice / ECR Ref #	String(16)	O	O	Invoice reference. Echoed back from request.
user_data	Additional Data	String(150)			User data received through Payment Advice/Request.
loyalty_data	Loyalty Data	List of Map	O		For loyalty related data. Parameter from the matched 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 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 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



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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

FX Qualification Data				
sell_amount	Amount in local/SOF currency	Numeric (12)	M	
sell_currency	Local/SOF transaction 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 currenct	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_tracenum	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. 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 Request contains original transaction time. Echoed back in response.
transaction_date	Date, Local Transaction	Numeric(4)	M	M	MMDD Request contains original transaction date. 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. 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 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. 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. 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. 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 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 (gateway specific)	map	C	C	Applicable NXP 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



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

	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)



## NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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 (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.



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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 (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	Hmmss
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. 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.
settlement_date	Date of the settlement	Numeric(4)		O	MMDD
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		Assigned by NETS.
retrieval_ref	Retrieval Reference Number	String(20)	M	M	Unique payment identifier to identify this payment request. 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. Echoed back in response.
acceptor_name	Payment Acceptor Name	String (40) UTF-8 encoded.		C	Returned for success response.
amount	Transaction Amount	Numeric(12)		O	Amount in currency indicated by amount_currency. 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. 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.



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

					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. MMDDhhmmss
institution_code	Acquiring Institution Identification Code	Numeric (11)	O	O	Assigned by NETS. 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. Echoed back in response.
transaction_date	Date, Local Transaction	Numeric(4)	M		MMDD. 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		O		
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 0501	0510	- 500 used for batch close and pre-batch close - 501 used for batch close retry
process_code	Processing Code	Numeric(6)	000000 330000	000000 330000	000000 – Batch close 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" unique txn reference number from gateway
E107	EDC Batch Number	Numeric (6)	EDC Batch Number Eg. "06123456"
E201	Source Amount	Numeric (12)	Eg. "000000000200" means \$2.00 Fixed 2 decimals places.
E202	Source Currency	String (3)	E.g. "SGD"
E204	Target Currency	String (3)	E.g. "SGD" If absent, will assume target=source currency.
E501	EDC Unique Settle ID	Numeric (12)	Eg. "201012031526"
F101	Transaction ID	Numeric (10)	"0000010203" 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 (Long Text)	String (99)	"16Singapore Dollar"
F117	Conversion Rate	Numeric (19)	"0000000100000250002" NNNNNNNNNNNNRRRRRX Where NNNNNNNNNNNN is the exchange rate (n-12, with implicit 4 decimal minor unit, e.g. 000000012000 means 1.2000) RRRRRX is the Margin Rate Percentage (n-6, with 4 decimal minor unit, e.g. 025000 means 2.5000%) X is the number of decimal minor unit indicator for 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 separator by comma)
F202	Target Currency (Long Text)	String (999)	"017Singapore Dollars"



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

F203	Target Currency (ISO Code)	Numeric (99)	"03702"
F204	Exchange Rate (S->T)	Numeric (999)	"0310000000100000000000002000250002" NNNNNNNNNNNNMMMMMMMMMMRRRRRX Where NNNNNNNNNNNN is the exchange rate (n-12, with implicit 4 decimal minor unit, e.g. 000000012000 means 1.2000) MMMMMMMMMMMM is the converted amount in target currency (n-12, with implicit 2 decimal minor unit) RRRRRR is the Margin Rate Percentage (n-6, with 4 decimal minor unit, e.g. 025000 means 2.5000%) X is the number of decimal minor unit indicator for 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. If an Order Request is a success, the payment type will be returned via the response.
F218	SOF Details	String (30)	E.g. Masked mobile number or PAN. 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" Will return this tag if DE39 = "***"
F999	PWAP Error Code	Numeric (4)	"0001" Will return this tag if DE39 = "***"



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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					



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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	<p>Communication protocol identifier. Supported values are:</p> <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	<p>Communication channel/method. Supported values are:</p> <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	<p>Valid values for the various categories:</p> <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	<p>Valid add-on parameters:</p> <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": "xxxxxx", "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		Notification	Transaction status
	Req	Res	Req	Res	Req	Res	Req	Res		
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	



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

#### 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



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

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) 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. 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/secaapi/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",
    "txnid": "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":

"iVBORw0KGgoAAAANSUhEUgAAAPoAAAD6CAYAACI7Fo9AAAMdUIEQVR42u3d7ZWiMBQAUPrxp7XYgnVMG7YwtfB36nFlxp1BCCPkofed84cXL8WITeBRxKaoxDi5aOxCYQAXQgBuhACdCEE6EII0IUQoAshQBdCgC4E6EII0IUQoAshQBdCgC6EAFOIAboQAnQhQBdCgH7HlzVN0b9b///c9Xv2/c9uj7m/J/f/n3v/Pvt7c78/WvkGHXTQQQcdNBbbx100EF/ZkMsnlBYGhr2BEgwqLkrxtwVa+7vi16+QQcddNBBbx100EEHHXTQSxac2sm2aMmf2hVj6Yo3d0WSe3/WTr6CDjrooIMOOuiggw466KBH3hDRYZZOfpVOjuXuoJR7+4AOOUiggw466KCDDjrooIob8dGT97k3p7R4NYedLP28g066KCDDjrooIMOOuigg14zmVV6UETuZFbpgpS7Yqq9f3OXT4NaQAcddNBBbx100EEHHfQ1Q48+OaTxvR45+Qm6guZ10EH3utdB93rXgd9zVF68sC1TbRROIIVe/1LQgpvA3TQQQcddBbbx100EEH/c1g1Z4oIVoyqHQHptrJt8gVEeiggw466KCDDjrooIMOOevTkSLTkWLTJKZdO5tUuD6UrktKfbx100EEHHXTQQQcddBbbxL5sTTE6JMLij4Yrz7RRu1BUJErdtBBbx100EEHHXTQQQcd9NIdUKINIIlbQYp2Q4fSFdxaksmsgw466KCDDjrooIMOOuhLwq99k8PSycfagzhyb/aEKP/npoVBeiggw466KCDDjrooIP+ftDXPqgh+kQJ0ZKjtZNzpf/tloSdNBBbx100EEHHXTQQQcd9EJJuGj/f+IBL7kLzu0RaWTmbmTlaUrEtBBbx100EEHHXTQQQcd9Mg7MtqjdoFtfQgjtrbo3SyN3rDBTrooIMOOuiggw466KCdvaoPXFB7WRc6UEv0W+6ubaballOOuiggw466KCDDjrooOeElTvZUroiWPvklErstlTe+SuaEEHHXTQQQcddBbbx100HPCqH0Tw+g7snRFUTu5trb1iTYoCfQANaaof9UEdnBBbx100AXooFdLztWeTFK8VkuQrbyaYQZ0ATrooAvQQQddgB45Gvc7GXLX5z8Op7/9eXn+2+0f32i972tPf/vP9rj/al+H87L792Gw7L9+7X1txf2H67yWf59+R9TyFy35B/pSzn+Bbrvl6a9ttufl3+O50W72v99xPH/Hvtkfm81hkb/t6e94ZX27zf/3jb9vz++fepz6zjzff+y21VcLOuiloGPBXF7xrn9Lzjfj+fEZjv6vv2pQDe79gfraNkBbgl6ff9h55a57U9/l9JfLfyoINeBnrTK4QDSHMO4zf7Xmvea9EvwB4SsA8J2OP3bXeH0bqOHzfjyuricdODl3pc8vvPn/s8gB4pGfdyEwf9skWclSw7z2v3AxbsOanRb96SN7eeeje9g7d+4fKicpp8jelXm/ueP6Zz6e/Z/TcsfxNNSPfRBH0BQtC+w19CvijuVmH7n8F/nCC3IXXth/txPJw4/W/5ff6dkch5+Xw7+L5Eb7m7whl4nvSnx+jnVqH9ta/++fog60A7hwddNALtOjpluni8Z3JulsK4vNQpSC0u791+V2fj/vXpb9NHvn89YKUqEhP3w066Nmgt8PCfll5BntufTbbWYfui+KYG6NEYzVm35A4HbiVJZ+/bs1FLgT0IMm4ZzdsuA4SFxiaixa4nTqEv9JC/11e2/5eBqsGPXEa0T7Qo19sn6V+y8d+cPh+X4teu/y9TYeZ14Q+cXj6dfwrhL3X22st2yaRbArQov+CmtWipy6PnfManwu07F2Fuet1qDkeQqC9H/TRExkfZte7bdCy97PEt1vR5jsZ11026y6Nbe9epi+bBz1xNLkb0aj/HMaJvltt1SRen1qeP9dtntsVBegZ2/R+0mh6Wvj4m725fXtn+X13bP94ybd+ieOA/+2M/dYOjgquX7VLLqevv56MD0OMI43JXFMR+NRlpNQ5+FQBHQIKl+foqQ4zg95vo8fnZb/jzK59DHqqEtVn/l6uf/1UriLZSWbcweb65cvm4uio9qCVmnBBzwx910JMnVmD0cHnWk245bvp0XvoZ58PGj1h73kZkLvX177Xd9HBut0+YiJnm/pTjBTHWSufG6zBR30wi36FPR6zY6V73Zoi8zqOWxQ/d/uUGJUxkd+MRVivFyO/F8c6XCaEAHPSf0xOHktSz5b8UwPiz9gZ7o3nn6zOHr+D38tP08Lb+6oain93bDTy+en3jP5/n5r/lZ9xGm3aFugegqi80+fY1+dwA9SjJubTeiv+/QfTurJ1u7mThXHXTzXPza88xoE/3uZ0HvOg7N7Bk477Ri0KonOsxEvwHGy2bdXxf6TJg3B41cyekTvs3bGoXs6H7HQb0kk+brzdNB BzwZ9hPYemF/H8aW2qWvH1XrGPZl136Q6yyzVM+6QOK3QooOeCXo7JxmXPLttZajiSv+t+j7OtBTvf7mZN0nxup/b59n+r x3VylSk2eAHjcZV3qQwelbejfOks86PB1hGveiWzlrvtdHoDav3Q4A/rX9DX0YT/10c+3U5Nz3NGtNtqgqprjOtBnQh/14jp7 qD15jbgZQE/NHjNjeX58fzJuPGR29qH3zXH683vlpSefaB4qb6CD/ICL/miWPH2u3pthZjhHXL9DTH/OuKnn/88Zn6tFT3Rk2T3y25rJtHJbsHDl6QbvermbHPQQX8Q+kjZ8q92ctLGQ7NPIL+v9X6mRT8OhszOPkcftOyXh+PbGVNVXesnP6/yAb1QMq50ZN/Qv9nfXu+tRxNNv8m5y++7a764Zmr+uLb32rwRbO3nYXze/GwSbdMbP36z91szeG9i1NvM6Z5LJ8tqT4YK+krupetoeRckjRtBBF6CDDroAHzRikzWWTraldcPPfZPE3DcNBR10ATrooIMOOuiggw76mndM7UE2InYyrnRyruq2AR100EEHHXTQQX9v6Gu bxz56zgT0F4We+6aJpScaqj3My11xrB1S6Yo+UkUAOuiggw466KCDDjrooL8f9KV3d0lBctGSSWVqkFGjoqrwap2RQc66KC DDjrooIMOOuigg54zuROtIEdPFpbuMBT9/yudXMvdkiEOOuiggw466KCDDjrooNdMxuXekKU7hEQf9BEt+RmtoXil0ZGggw466KCDDjrooIMOOujRk2Glf1+0iR9yJ6uibZ/SyeRlg55ABx100EEHHXTQQQcd9PeDXntD5E4mla7ISkfp5Fnt9Y82iOhIBrWADjr ooIMOOuiggw466C8BPTeMaDdwilZ+0ZKhpZNzptvUvG0yDnTQQQcdNBbbx100EEvAr32DQtKF6TSN4BYW7lrWvKx9M QYkQJ00EEHHXTQQQcdNBbfz/opTds7oiUbfLH6MnG3P/f2mDLuoMOOuiggw466KCDDjrokaCX3tHRJgeMXjGtrWKJnix+2 0EtoIMOOuiggw466KCDDnpl6GsbFB90Enu/VG7Ylm6PCy9v9Ze8YAOOuiggw466KCDDjro7w299laLPnFF6YJdu+CWrljITS RiUAvo0IMOOuiggw466KCDDHl6NKhLF4TSya7cFuftiTpqd0CKtr1ABx100EEHHXTQQQcdNDXHK+W7CudLlw2UuFtQuq1 tx/o0IMOOuiggw466KCDDvqSMGonL0rvyNIdQI7tJojRjxotPZkn6KCDDjrooIMOOuiggw56IGRCjg0ZfYL/3AUtGrRo5SFa+Qc ddNBBbx100EEHHXTQQQcdNDJdvBYW4eSaMm4V7+Jeiggw466KCDDjrooIMOek7opb+/dgeY3B1ASicPSyfrSu+v2uUDdNB BBx100EEHHXTQQQcd9ZnKi9mSD0TtE1P79tSvO6IOUlsMGHXTQQQcdNBbbx100EXQsQM01UAXQgBuhACdCEE6EII0IUQoAshQBdCgC4E6EII0IUQoAshQBdCgC6EAFOIaboQAnQhQBdCvGr8A8M/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": "000000010000000000000000850000000000"
    }
}
```



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

```
        "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#####23976000332d0fa801401000090000010B796AB5F      enet",
    "process_code": "330000",
    "stan": "000332",
    "entry_mode": "000",
    "condition_code": "00",
    "institution_code": "20000000001",
    "host_tid": "99998888",
    "host_mid": "00000000023976",
    "invoice_ref": "20170511152114446",
    "npx_data": {
        "E103": "99998888"
    }
}
```

**Response:**

```
{
    "mti": "0110",
    "txn_identifier":
    "NETSQPAY099998888#####23976000332d0fa801401000090000010B796AB5F      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": "0000000100000000002",
        "F121": "9.0000",
        "F122": "9.0000"
    }
}
```



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

#### 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",
```



NETWORK FOR ELECTRONIC TRANSFERS (S) PTE LTD

```
"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"
}
```