# EHI Guide

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# Section 1: Getting Started

You should read this section if you are new to the ExternaL Host Interface (EHI) and want to understand how it works and how EHI is configured.

Topics covered in this section:

- About this Guide
- Overview
- EHI Operating Modes
- EHI Connection and Messages
- Transaction Flow Scenarios
- EHI Data Feeds
- Transaction Types
- EHI Version Control
- EHI Configuration Options
- Integration Steps

**Tip:** To find out how to integrate your external host system to EHI, see Processing EHI Transactions.

**Tip:** If you are upgrading your EHI version and want to understand what has changed, see Document History.

# 1.1 About this Guide

This guides described the GPS External Host Interface (EHI) and provides technical specifications on how to integrate your systems to EHI.

## Document Scope

You should read this guide if you are using EHI for payment transaction authorisation and/or subscription to the EHI real-time payment transaction data feed.

## Target Audience

This guide is aimed at developers who need to integrate their applications to GPS, using EHI.

## What's Changed?

If you want to find out what's changed since the previous release, see the Document History section.

# 1.1.1 How to use this Guide

If you are new to EHI and want to understand how EHI works, we suggest you start with following topics: Overview, EHI Operating Modes and typical Transaction Flow Scenarios. See also the other topics in the Getting Started section, including our Best Practise for Customer Implementations.

If you are an experienced EHI developer or want to find out how to process EHI messages, see Processing EHI Transactions.

To view a copy of the GetMessages WSDL and message examples for different types of transactions, see GetTransaction WSDL and Example Messages.

## 1.1.2 Conventions used in this Guide

When reading the tables in this guide, note the following information may be provided.

| Element | Description |
|---|---|
| Usage | • **Omitted** - can be omitted (fields not included) or included with an empty value (e.g., <Bill_Ccy></Bill_Ccy>)<br>• **Optional** - can be omitted (fields not included) or included with an empty value. Can be present (e.g., <Bill_Ccy>826</Bill_Ccy>)<br>• **Mandatory** - field must be present. For example: <Bill_Ccy>978</Bill_Ccy> |
| Tag | The XML field name. Please pay particular attention to the capitalisation and spelling. Where a field name is used within text, this is formatted as in the following example: <Bill_Ccy> or <Bill_Ccy> (when used in a table note). |
| Data Types | The type of field data type supported. For details, including minimum and maximum lengths, see Data Types. |

## 1.1.3 Other Documentation

Refer to the table below for a list of other relevant documents that should be used together with this guide.

| Document | Description |
|---|---|
| Web Services Guide | Provides details of the GPS Web Services API. |
| Smart Client Guide | Describes how to use the GPS Smart Client to manage your account. |
| Chargeback Guide | Describes the chargeback process and options for managing chargebacks. |
| XML File Specifications | Describes the fields in the XML file sent to the card manufacturers when implementing a create card request. |
| 3D Secure FAQ document | Describes the GPS 3D Secure service. |

# 1.2 Overview

The External Host Interface (EHI) offers a way to exchange transactional data between the GPS processing system and the Program Manager's externally hosted systems. All transaction data processed by GPS is transferred to the external host system via EHI in real time. EHI provides two main functions:

- A real-time transaction notification data feed
- Payment authorisation control

## 1.2.1 Real-time Transactional Data Feed

GPS receives global real-time card and payment-related notifications from the card schemes (Visa and Mastercard networks). These notifications are merged into a single GPS message format which your systems can process. The real-time notifications are sent via a secure VPN connection to the external host URL endpoint you have requested for your programme. These include notifications for: *Authorisations*, *Presentments*, *Load* and *Balance Transfers* and *Expired Cards*. For details see Transaction Types.

Your systems should respond with an acknowledgement of receipt of the message.

The EHI data feed can be used to ensure you can provide your cardholders with real-time information.

For more information on the fields and attributes included in the data feeds, see EHI Data Feeds.

**Note:** In addition to the real-time data feed, GPS also provides daily batch XML reports, via sFTP. You can use this data to support your payment reconciliations. See the *XML Transaction Reports Specifications*.

## 1.2.2 Payment Authorisation Control

The payment authorisation process is initiated when a cardholder makes a purchase with a merchant , who then seeks authorisation for the card payment via their acquirer. See the figure below.

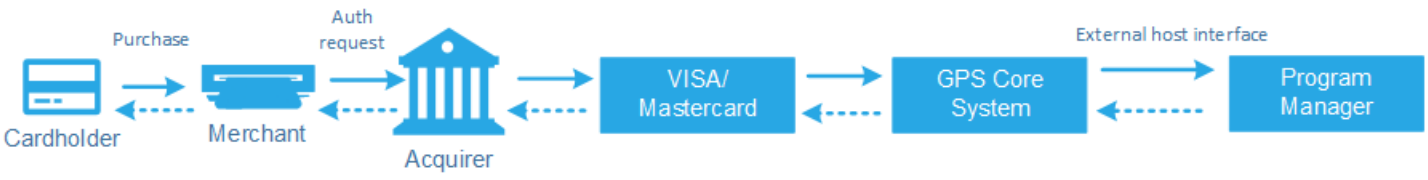


*Figure: Parties innvolved in the payment authorisation process*

When a payment authorisation request is received from the card schemes, GPS first performs conventional transaction-related card and cardholder checks, such as EMV data, PIN, CVV2, velocity checks, fraud checks and card product checks.

Your EHI mode will determine whether GPS or your systems manage the payment authorisation. For example:

- Modes 1 (where your systems hold the card balance) - you make the authorisation decision and respond to GPS to indicate whether the transaction can be approved or declined.
- Modes 2 (where GPS holds the card balance) - GPS approve or decline and sends to you; you can overrule any approved decision.
- Modes 3 (where GPS holds the card balance) - GPS makes the authorisation and provides you with the response.
- Modes 4 and 5 (where your systems hold the card balance) - you perform authorisation. GPS provides Stand-In authorisation if your system is unavailable.

GPS provides other flexible mode options, where a combination of GPS and external host authorisation can be used. See EHI Operating Modes.

GPS will process your response and respond to the card scheme (Mastercard or Visa). The authorisation decision process is in real time.

# 1.3 EHI Version Control

The currently supported EHI versions are 3.x and 4.x.

GPS creates new EHI versions for new functionality as required by scheme and regulatory changes and/or client enhancements. These are available to all customers.

We distinguish between the following versions:

- *Major versions*: add significant functionality (e.g. MDES). Examples of major version numbers are : 3.0, 4.0, 5.0, etc.
- *Minor versions*: add minimal functionality (e.g. new field). Examples of minor version numbers are: 4.1, 4.2, 4.3. etc.
- *Document versions*: reflect guide update. Examples of document version numbers are: 4.0.1, 4.0.2, 4.0.3 etc.

We will send you notifications of any new releases. If you are interested in upgrading your version, please contact your GPS account manager or GPS implementation manager to discuss.

### Adding New Fields

When GPS needs to add new fields, we increase the minor version.  We keep a record of which EHI version requires which fields. When you connect to the EHI, the system looks up your current EHI version and sends you only the fields that are associated with that version.

> Note: If we add new values to an existing field that you currently receive, you will receive the new values (i.e., the EHI version protects which fields you receive, not the values inside existing fields.)

### Upgrading your EHI Version

GPS recommends you upgrade your EHI version to one of the currently supported versions. Versions 3 onwards provide access to GPSNet, with enhanced EHI features such such load balancing,a streamlined service architecture, support for multiple external host endpoints and reduced connection timeouts.

## 1.3.1 Best Practise for Customer Implementations

- We recommend you regularly upgrade to ensure you are on a supported EHI version. You should develop EHI integration with an awareness that older, unsupported versions are no longer being tested.
- GPS recommend that you ignore all fields you are not expecting, and do not treat this as an error. This will mean that you can upgrade to a new EHI version, without making any changes on your side.
- In order to use any new EHI fields and functionality you may need to update your systems. For details of new fields that have been added to a release, see Documentation History.
- When integrating to EHI, always refer to the GetTransaction WSDL for the latest EHI XML structure. See GetTransaction WSDL and Example Messages.

# 1.4 EHI Operating Modes

For authorisation types of transactions, the external host interface can operate in one of five supported modes. See the table below:

| Mode | Who Authorises? | Who Holds the Balance? | GPS Stand-In | Details |
|---|---|---|---|---|
| 1 | External Host | External Host | No | Your systems hold the balance and perform authorisation. |
| 2 | GPS | GPS / External Host | Yes | GPS holds the balance and performs authorisation. You can override an approval decision.<br>In Approval with Load your systems also holds the balance. |
| 3 | GPS | GPS | No | GPS holds the balance and performs authorisation. You receive a read-only response. |
| 4 | External Host | External Host | Yes | Your systems hold the balance and perform authorisation. GPS provides Stand-In authorisation if the external host is unavailable. |
| 5 | External Host | External Host | Yes | Your systems hold the balance and perform authorisation. GPS provides Stand-In authorisation if the external host is unavailable.<br>Clearing transactions, such as presentments, do not update the GPS stand-in balance. |

Each mode is described in more detail below.

## 1.4.1 EHI Mode 1 - External Host Maintains Balances

You manage the cardholder balances and approve or decline a payment authorisation request.

Your system should always calculate the total balance impact of the transaction (e.g., billing amount and fees) when determining whether to approve the transaction. (See Calculating the Total Cost.)

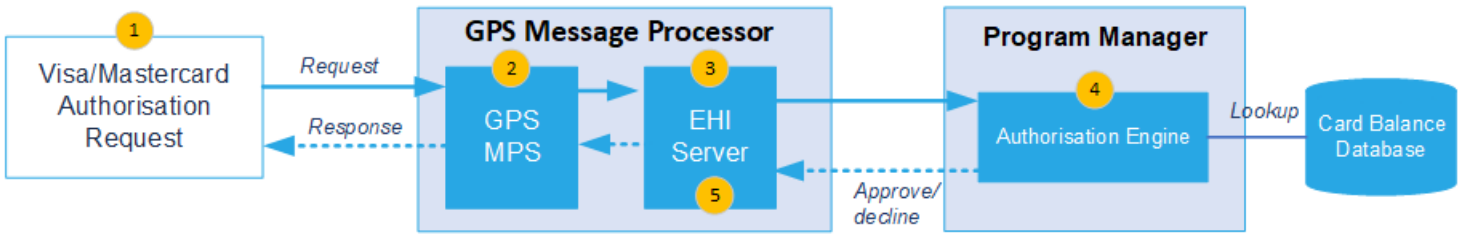


*Figure: EHI Mode 1 - external host authorises transactions*

1. The card scheme (Visa or Mastercard) sends an authorisation request.
2. The GPS Message Processing System (MPS) performs checks such as authentication, validation and fraud protection[1], as well as checks based on your product configuration. (This will result in a decline if the checks fail. In this case GPS will send an advice only to the Program Manager and no authorisation decision is required.)
3. The EHI server sends the authorisation request to the external host URL endpoint configured for the Program Manager.
4. The external host (i.e., Program Manager's systems) then decides whether to approve or decline the transaction, by checking details of the balance held on the card.
5. The EHI server waits for a response from the external host. The reponse must be received within the allowed time period (default is 200 ms) or the transaction will be declined. When received, this is forwarded to the card scheme.

## 1.4.2 EHI Mode 2 - GPS Maintains Balances

GPS performs all types of authorisations (card, cardholder and balance), but the external host can overrule the GPS authorisation and advise to decline the transaction.

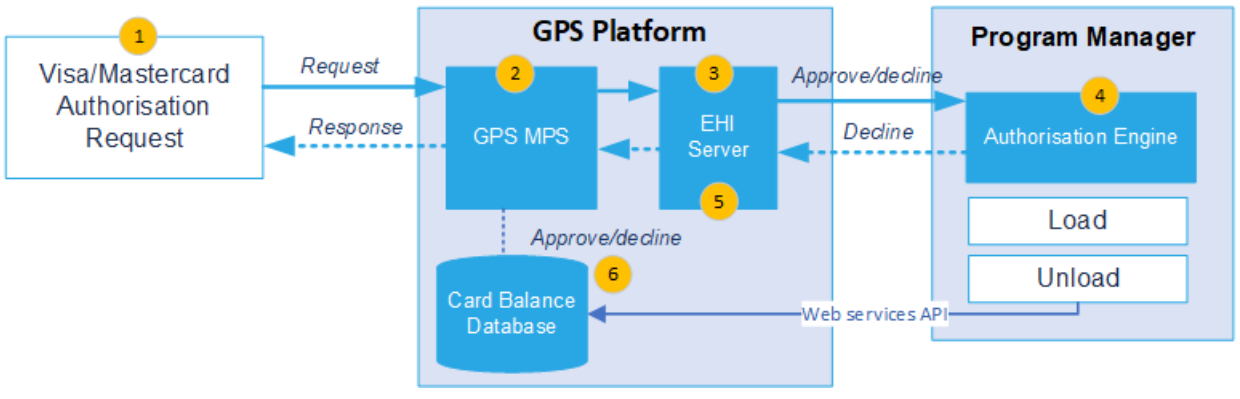


*Figure: EHI Mode 2 - GPS authorises in first instance*

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[1]Fraud protection is based on whether you are using the GPS Protect product. This is in near real-time. If a rule is triggered it can block the card for future transactions.

1. The card scheme (Visa or Mastercard) sends an authorisation request.
2. The GPS Message Processing System (MPS) performs checks such as authentication, validation and fraud protection, as well as checks based on your product configuration.
3. GPS decides whether to authorise or decline the transaction, based on the balance details held by GPS.
4. The EHI server sends the GPS response (approve or decline) to the external host URL endpoint configured for the Program Manager.
   - If declined, you can overule the GPS decision only for a balance decline (where *Approve with Load* is enabled)[1].
   - If approved, you can decide whether to overule the GPS decision and decline the transaction.
   - You can approve for a partial amount if the transaction satisfies the conditions for partial amount approval.
5. The approve or decline response is sent to the card scheme.

Since GPS hold the balance, we update the balance as part of the authorisation cycle.

### Stand In

In Mode 2 EHI supports *Stand-In* where GPS can fully authorise transactions at times where there is no connection to the external host. If *Stand In* is enabled and there is no authorisation response from an external host during allocated time-out period GPS will approve or decline the transaction only based on GPS data. Such 'on behalf' approved transactions will have the Authorised by GPS flag set to '*Yes*' and once delivered to the external host, GPS only requires an acknowledgement response.

### Approval with Load

The authorisation can be approved with a simultaneous instruction to load a certain amount to a card. If this is required and the product is enabled with the *Approval with Load* option, the authorisation response message of the approved transactions has to contain the '*0A*' response code and the amount to load. The Load will be done before the transaction amount is debited from the current balance.

The external host should take into account the total balance impact of the transaction (billing amount, fees and padding) when determining whether to approve the transaction. (See Calculating the Total Cost.)

**Note:** Multi-currency FX cards do not support *Approval with load*.

**Note:** The Card Schemes (Mastercard and Visa) must approve any *Approve with Load* programmes.

## 1.4.3 EHI Mode 3 - Read-only Data Subscription

GPS manage the authorisation request and approve or decline. The external host interface is used only as a transaction data feed from the GPS system to the Program Manager's system.

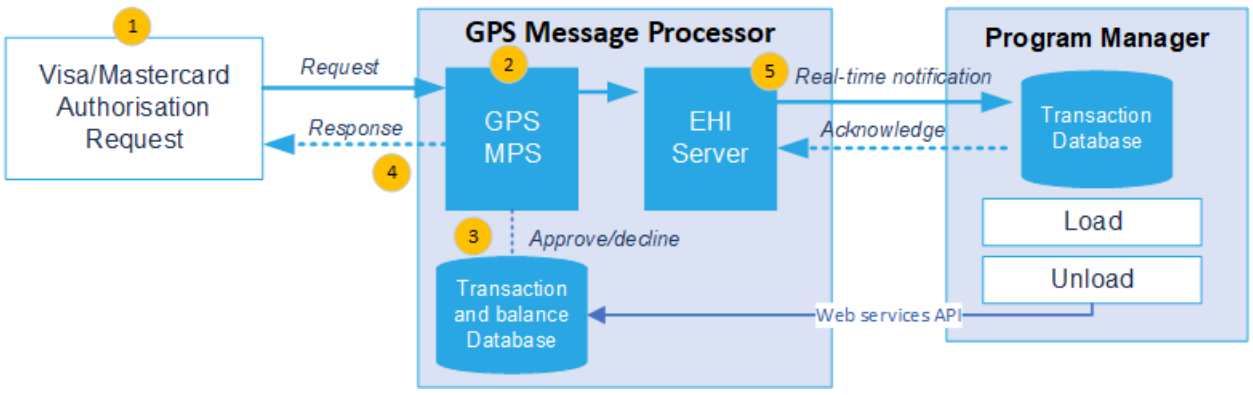


*Figure: EHI Mode 3 - GPS authorises and external host receives data susbscription service only*

1. The card scheme (Visa or Mastercard) sends an authorisation request.
2. The GPS Message Processing System (MPS) performs checks such as authentication, validation and fraud protection, as well as checks based on your product configuration.
3. GPS decides whether to approve or decline the transaction, based on the balance details held by GPS. We will update the balance.
4. The approve or decline response is sent to the card scheme.

[1] In mode 2 - Approval with Load you can override a balance decline, where GPS declined because the GPS held balance indicated insufficient available funds to cover the authorisation; in this case, you should follow up the override by loading the amount to the card, to update the GPS held balance.

5. The EHI server sends an advice with the transaction outcome, including the latest card balance, to the external host URL endpoint configured for the Program Manager.

## 1.4.4 EHI Mode 4 – External Host Maintains Balance (with GPS Stand-in)

EHI Mode 4 is as EHI Mode 1 (where you authorise the transaction), except that the external host can maintain the GPS stand-in balances. If the external host cannot be contacted, then GPS will approve or decline using the current GPS stand-in balance. The GPS stand-in balances can be updated by either or both:

- EHI response messages (see Update_Balance field)
- Balance Update Web Service (see ws_BalanceUpdate in the *GPS Web Services Guide*).

In EHI Mode 4, all transactions (authorisations and financials) will update the GPS stand-in balance.

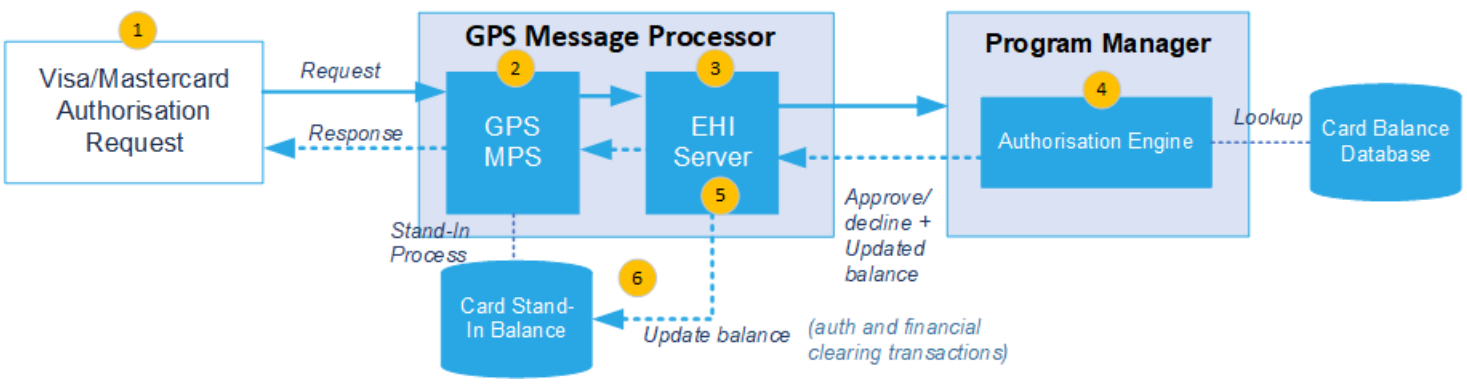


*Figure: EHI Mode 4 - External host authorises, but GPS can authorise if external host is not available*

1. The card scheme (Visa or Mastercard) sends an authorisation request.
2. The GPS Message Processing System (MPS) performs checks such as authentication, validation and fraud protection, as well as checks based on your product configuration. (This will result in a decline if the checks fail. In this case GPS will send an advice only to the Program Manager and no authorisation decision is required.)
3. The EHI server sends the authorisation request to the external host URL endpoint configured for the Program Manager.
4. The external host (i.e., Program Manager's systems) then decides whether to approve or decline the transaction, by checking details of the balance held on the card.
5. The EHI server waits for a response from the external host. If EHI receives an approve or decline response, the response is returned to the card scheme.
6. If no response is received, then GPS does stand-in authorisation on behalf of the Program Manager and sends this to the card scheme.

## 1.4.5 EHI Mode 5 – External Host Maintains Balance (with GPS Stand-in)

As with EHI Mode 4, except that clearing transactions do not update the GPS stand-in balance (i.e. so only authorisation-related messages will change the stand-in balance).

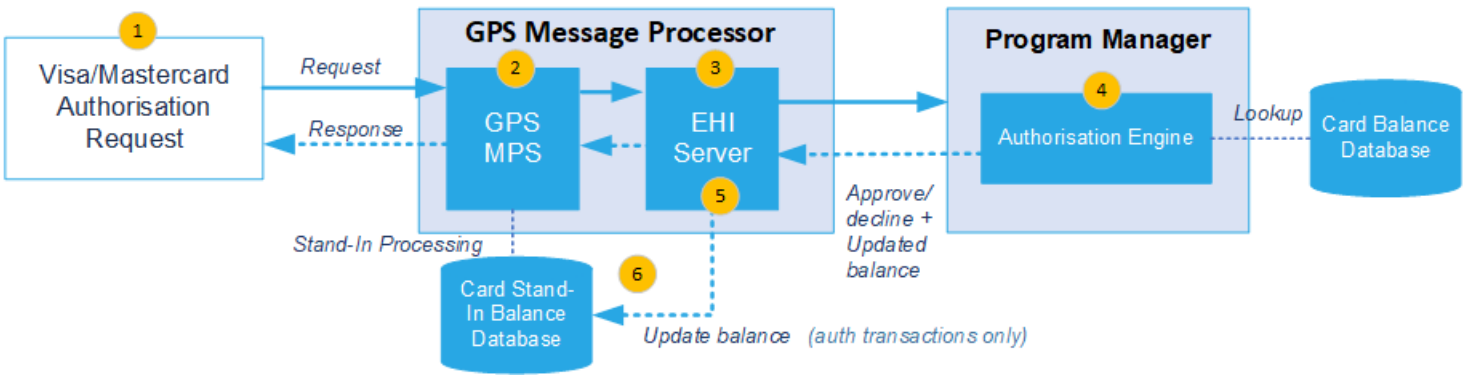


*Figure: EHI Mode 5 - External host authorises, but GPS can authorise if external host is not available*

# 1.5 EHI Connection and Messages

The External Host Interface messaging system is based on SOAP Version 1.1.

SOAP (Simple Object Access Protocol) is a messaging protocol for exchanging structured information. It uses Extensible Markup Language (XML) for its message format and relies on application layer protocols such as HTTP for message negotiation and transmission. SOAP allows developers to invoke processes running on disparate operating systems (such as Windows, macOS, and Linux) to authenticate, authorise and communicate using XML.

See the figure below, illustrating the GPS system components and typical message flow.

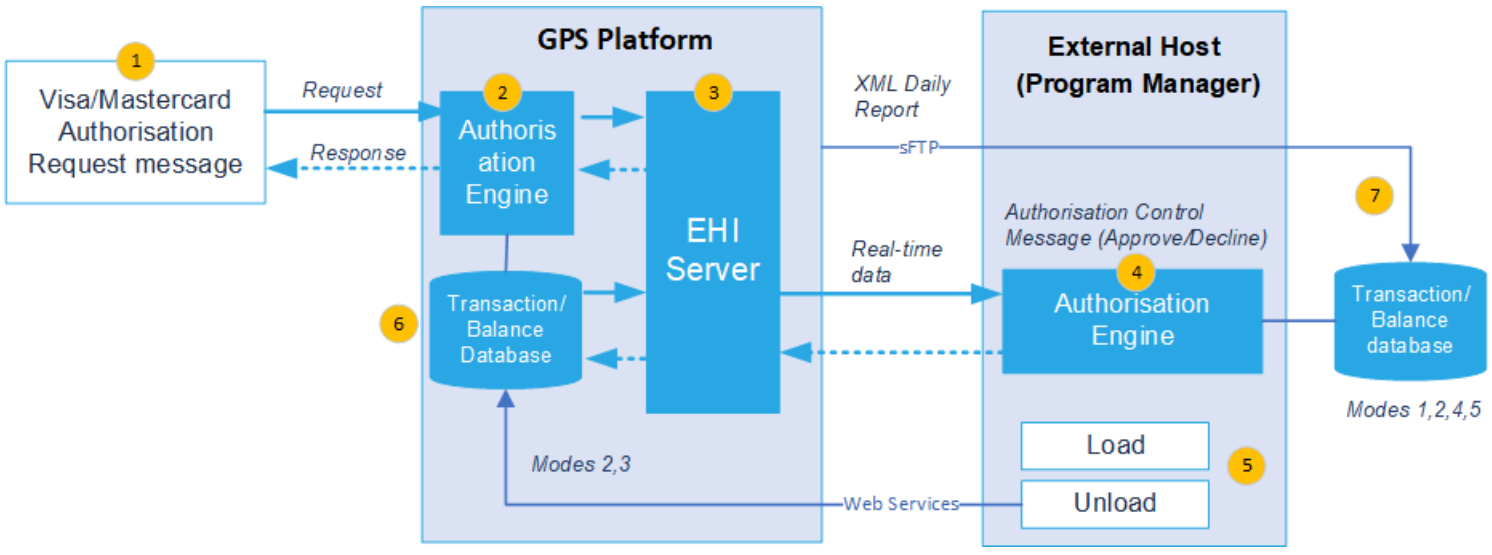


*Figure: GPS System Components and External Host Interface Message Flow*

Below is a generic summary of this process, which may differ depending on your EHI mode. For more information, see EHI Operating Modes.

1. The card scheme (Visa or Mastercard) sends realtime payment authorisation requests, as well as batch clearing file and financial transaction notifications to GPS.
2. The GPS Message Processing System (MPS) performs authentication, validation, velocity controls, fraud protection and product configuration checks.
3. The EHI server sends the authorisation requests and any financial notifications to the external host URL endpoint configured for your programme.
4. Depending on your EHI mode, GPS may be involved in the authorisation decision. For example, in EHI modes 1,4 and 5 the external host (i.e., Program Manager's systems) decides whether to approve or decline the transaction, by checking details of the balance held on the card. In EHI mode 3 GPS makes the authorisation decision.
5. The EHI server waits for an authorisation approve or decline response or a financial message acknowledgement from the external host. When received, this is processed. Payment authorisation decline or approve responses are forwarded to the card scheme.
6. Where GPS holds the balance on the card, the Program Manager can perform load and unload transactions via the GPS web services, to update the balance (for details, refer to the *Web Services Guide*).
7. In addition to the real-time data feed, GPS also provides a daily batch XML transactional data feed via sFTP. You can use this data to support your payment reconciliations.

**Note:** Due to the real-time nature of authorisation transaction, in EHI modes where your systems need to process an authorise request, they must respond within the configured time limit for a request (default is 200ms) or the transaction will be declined.

## Types of EHI Messages

EHI sends the following types of messages to the external host (Program Manager's systems):

- **Real-time payment authorisation requests** - which require an immediate approve or decline decision and response.
- **Real-time transaction advice notifications**- which require an immediate acknowledgement.
- **Financial advice notifications** - such as presentments and chargebacks. These require acknowledgement only.
- **Cut off messages** (optional) - batch report showing all messages you should have received in a defined period. See Cut Off Messages.

For most message types, EHI waits for an acknowledgement from the external host to confirm that the message has been received. If no response is received, EHI resends the message. See Processing EHI Transactions.

For details of the fields included in each type of transaction, see EHI Data Feeds.

## GetTransaction WSDL

The GPS GetTransaction WSDL defines the structure of the GPS SOAP message sent to the external host and the structure of the response expected to be returned by the external host. The message format is based largely on the ISO 8583 standard, with some differences which are unique to GPS.

For details and exampes of GetMessages for different types of transactions, see GetTransaction WSDL and Example Messages.

## 1.5.1 Transmission Control Protocol (TCP) Connection

For each message sent via the EHI, the following occurs:

1. The EHI makes a TCP connection to the external host URL configured for your program.  GPS is always the TCP client, the external host (your system) is always the TCP server.
2. Using the HTTP POST method, EHI sends an HTTP message to this TCP connection with the SOAP XML message as the message body. The message body is XML encoded to the UTF-8 format.  See https://www.w3.org/TR/REC-xml for specifications.
3. The response from your system must be a valid HTTP response with the HTTP response body containing the valid XML response data.
4. In the production environment EHI messages are sent over a VPN tunnel.

## 1.5.2 EHI Security

The EHI web services can use the TLS security protocol, which implements SSL Certification to provide a private and secure connection . You will need to provide the SSL certificate.

> **Note:** In the production environment, we use a VPN for security reasons. We recommend not using TLS for performance reasons.

# 1.6 Card Payment Networks

GPS currently supports cards enabled for use by the Mastercard and Visa card schemes. These card schemes provide global card payment networks open to financial institutions and processors, which allows cardholders to pay with Mastercard and Visa enabled cards and merchants to accept card payments in their businesses worldwide. GPS operates on the card Issuing side, acting as the gateway between the Card Schemes (Visa and Mastercard) and the card issuers/Program Managers.

The card payment networks are highly standardised and strictly regulated,so interested parties must be certified to be able to participate. GPS is a Visa and Mastercard certified *Issuer Processor*, which enables us to process various types of card payment transactions from their networks. GPS transforms messages from card payment networks and other sources into a simplified and unique internal format, available via EHI. Integrating to EHI enables you receive all GPS supported payment network messages.

EHI content is evolving with the changes introduced by Visa and Mastercard via periodical releases and ad-hoc announcements. GPS provides you with notifications of these changes and new EHI version releases.

## 1.6.1 Card Payment (Network) Transactions

There are two main steps in a typical card payment transaction:

### Step 1: Request for Authorisation

The card scheme sends an authorisation request to GPS. GPS receives the authorisation request via the network and responds in realtime after checks done by GPS and your systems. The result may be approval or decline.

- An approved authorisation does not move any funds, but only blocks/unblocks the authorised amount. Approved authorisations are normally cleared later by financial message to finalise the transaction. If the financial message does not arrive in a defined period, the block is removed.
- Some messages such as balance enquiries are also Authorisation messages, but there are no complementary financial messages for those messages.

### Step 2: Financial/Clearing Message

The card scheme sends a financial (or clearing) message to GPS. Most common financial messages are presentments, which mostly match with an authorisation received previously. Financial messages require a change to the actual balance of the cardholder account.If there is a linked authorisation, financial message must clear the blocking applied for the matching authorisation.

Note that the authorisation amount and financial amount may differ, and blocked amount actual balance mechanisms should ideally be managed independently.

In a life-cycle of a transaction, there may be several financial messages. These messages include chargebacks for disputed financial transactions and reversals of presentments and chargebacks.The figure below lists possible message types and their phases and orders in a transaction life cycle.

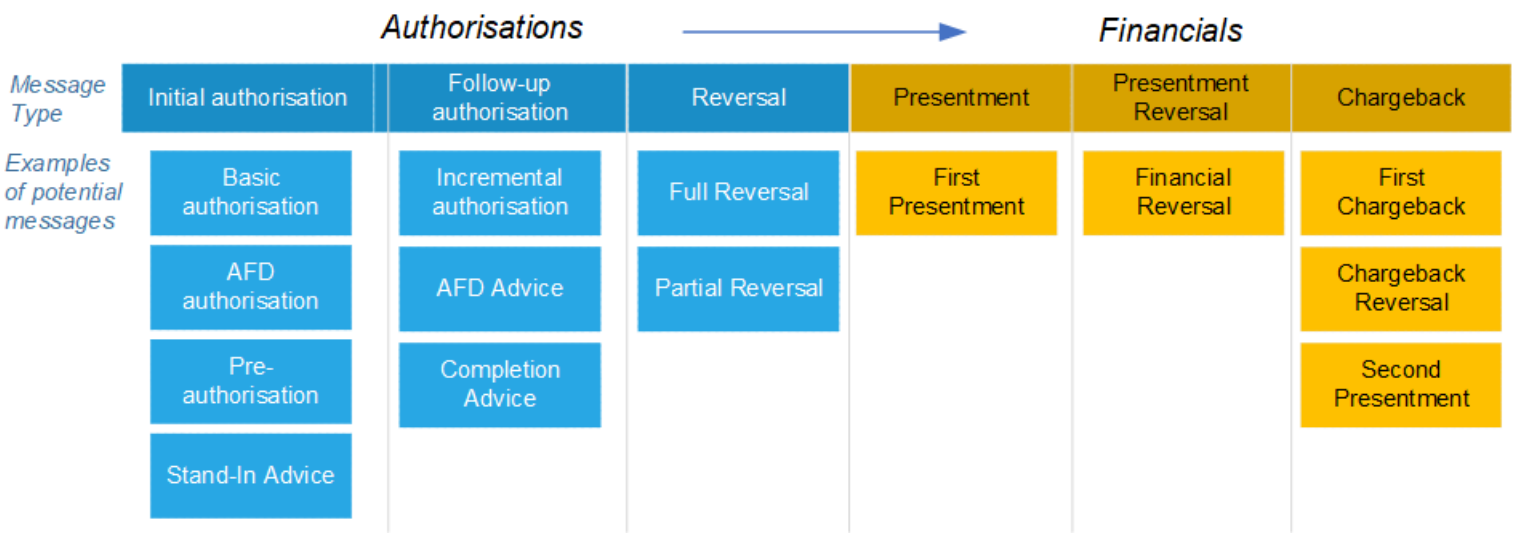


*Figure: Examples of typical authorisation and financial messages*

Most transaction life-cycles consist of a single authorisation and first presentment. However, there are more complex combinations that needs to be supported by EHI. For more information on the transaction types and the steps in processing, see Transaction Flow Scenarios.

## 1.6.2 Non-Card-Network Transactions

These are transactions that are not originated via the Visa or Mastercard networks, but by another means, such as Web Services and BACS. Examples include: load of funds into an account, payments to an account via Faster Payment or card expiry notifications.

# 1.7 Transaction Flow Scenarios

This section provides examples of typical transaction flows with Mesage Transaction IDs (MTIDs).

> **Note:** This provides a flavour of the type of messages you can expect to receive from the GPS system.

## 1.7.1 Authorisations

Authorisation is the stage in a transaction life-cycle where a merchant requests approval for a card payment amount. If the authorisation is approved, the amount is ring-fenced on the card. Typically the merchant then has up 28 days to request the transfer of the authorised funds. For additional information see What are Authorisations and how do they work?

### Authorisation with Approve

The following scenario illustrates a typical approve journey for EHI modes 1,2,4 and 5.

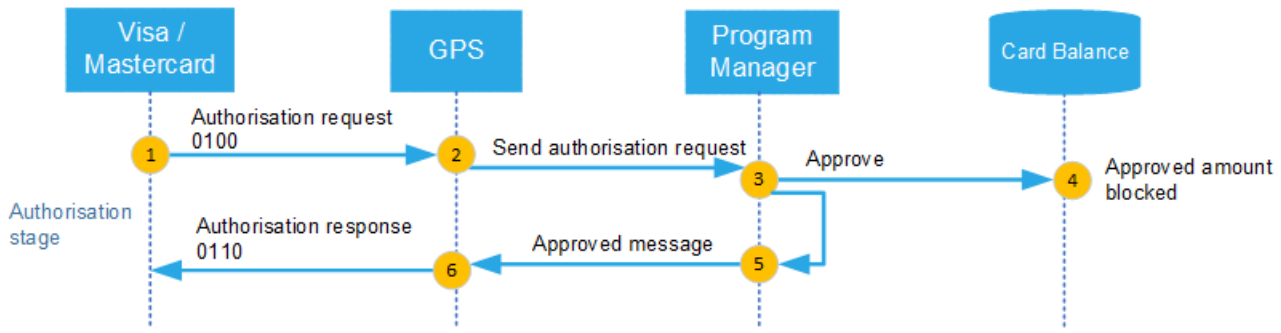


*Figure: Authorisation Flow - Approve*

1. The scheme sends an 0100 authorisation request to GPS.
2. GPS carries out validation checks and sends the request to the external host (Program Manager).
3. The Program Manager approves the request.
4. The Program Manager blocks the approved amount (including fees) on the card and reduces the available balance.
5. The Program Manager returns an approved response: *<ResponseStatus>00</ResponseStatus>* and *<Acknowledgement>1</Acknowledgement>*.*
6. GPS responds to the scheme with an 0110 message (with response status 00 indicating an approval).

* ResponseStatus = 00 indicates the request is approved; Acknowledgement = 1 informs GPS that the message was received and GPS does not need to resend.

#### Partial Amount Approval

Partial amount approval is allowed for authorisation requests that have a response code status of 10 and where GPS_POS_Capability position 1 (partial approval support indicator) is 1. This feature is available for all EHI modes. You can use the Bill_Amt_Approved field to return the partially approved amount. See GetTransaction Message Fields: Bill_Amt_Approved.

### Authorisation Resulting in a Decline

The following scenario illustrates a typical decline journey for EHI modes 1,2,4 and 5.

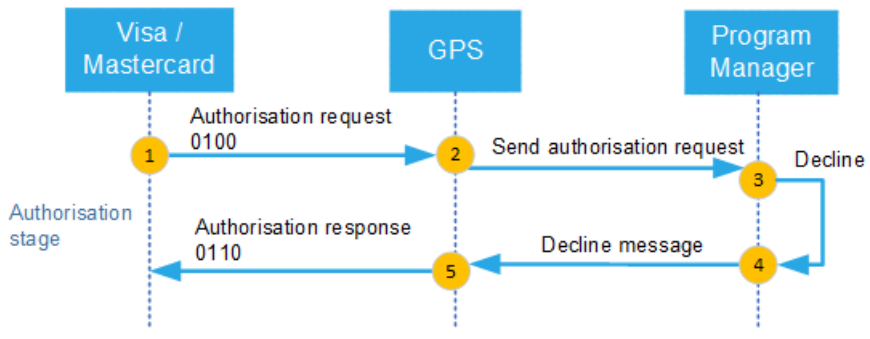


*Figure: Authorisation Flow - Decline*

1. The scheme sends an 0100 authorisation request to GPS.
2. GPS carries out validation checks and sends the request to the external host (Program Manager).
3. The Program Manager declines the request.

4. The Program Manager returns a declined response, for example: *<ResponseStatus>05</ResponseStatus> and <Acknowledgement>1</Acknowledgement>.**
5. GPS responds to the scheme with an 0110 message (with an appropriate response status, e.g. 05, indicating a decline).

* ResponseStatus = 05 indicates Do not honour. You can return any suitable decline response code. See Response Codes.

Acknowledgement = 1 informs GPS that the message was received and GPS does not need to resend.

## Authorisation Reversal (network)

This type of transaction occurs when the merchant, acquirer or card scheme requests a reversal of the original authorisation. This should result in the amount previously ring-fenced on the card being unblocked.

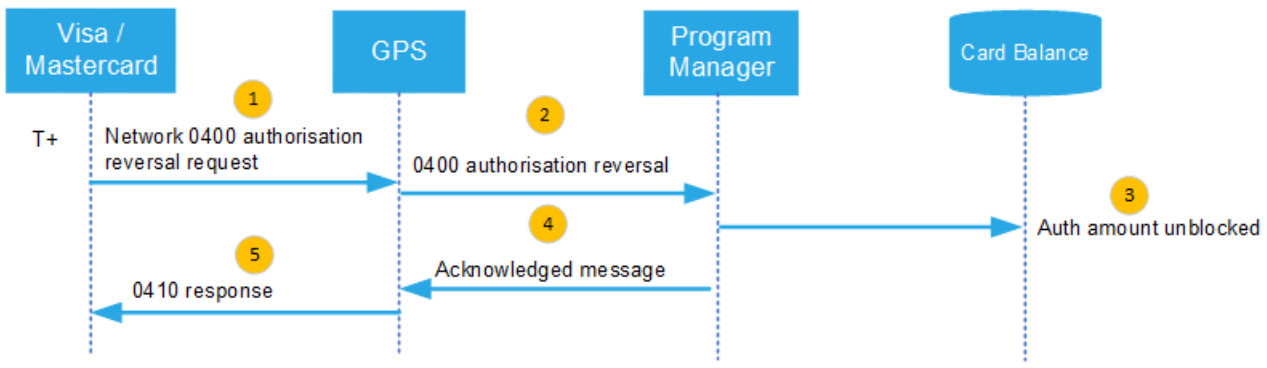


*Figure: Authorisation Reversal Flow*

1. The scheme sends an 0400 authorisation reversal request to GPS.
2. GPS sends the request to the external host (Program Manager).
3. GPS responds to the scheme with an 0410 message.
4. The Program Manager matches the reversal message to the original authorisation message. See Transaction Matching.
   The Program Manager unblocks the authorised amount and updates the cardholder's available balance.
5. The Program Manager acknowledges the message: *<Acknowledgement>1</Acknowledgement>.*

## Authorisation Reversal (non-network)

If no presentment (request to settle the amount previously authorised) is received within the GPS hanging filter period, GPS automatically reverses the authorisation.

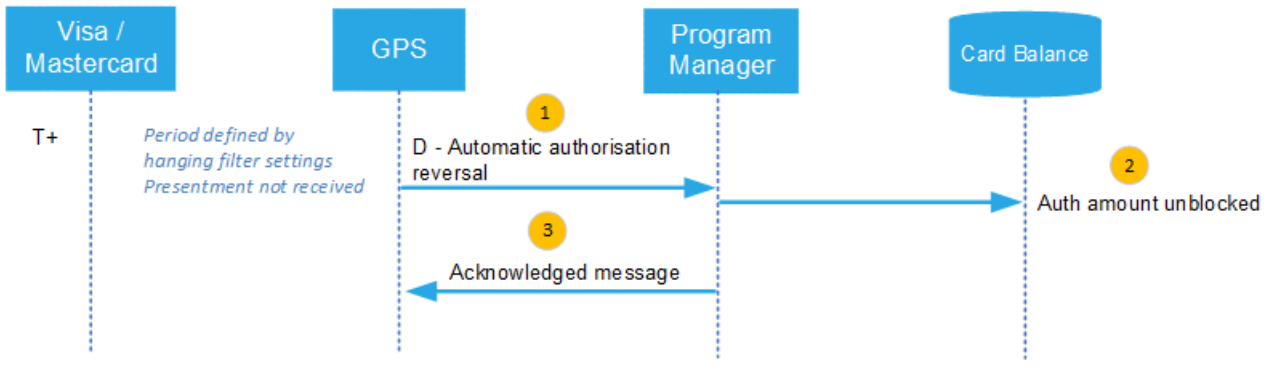


*Figure: Authorisation Reversal Flow*

1. If no presentment is received within the time period set by the hanging filter, EHI sends a financial reversal message to the external host (Program Manager).
2. The Program Manager matches the reversal message to the original authorisation. See Transaction Matching.
   The Program Manager unblocks the authorised amount and updates the cardholder's available balance.
3. The Program Manager acknowledges the message: *<Acknowledgement>1</Acknowledgement>.*

## Incremental Authorisation

An incremental authorisation is an additional authorisation, following a previous transaction authorisation, which is used to request an additional amount for the same product or service purchased by the cardholder. See What is an incremental authorisation and how do I identify it?

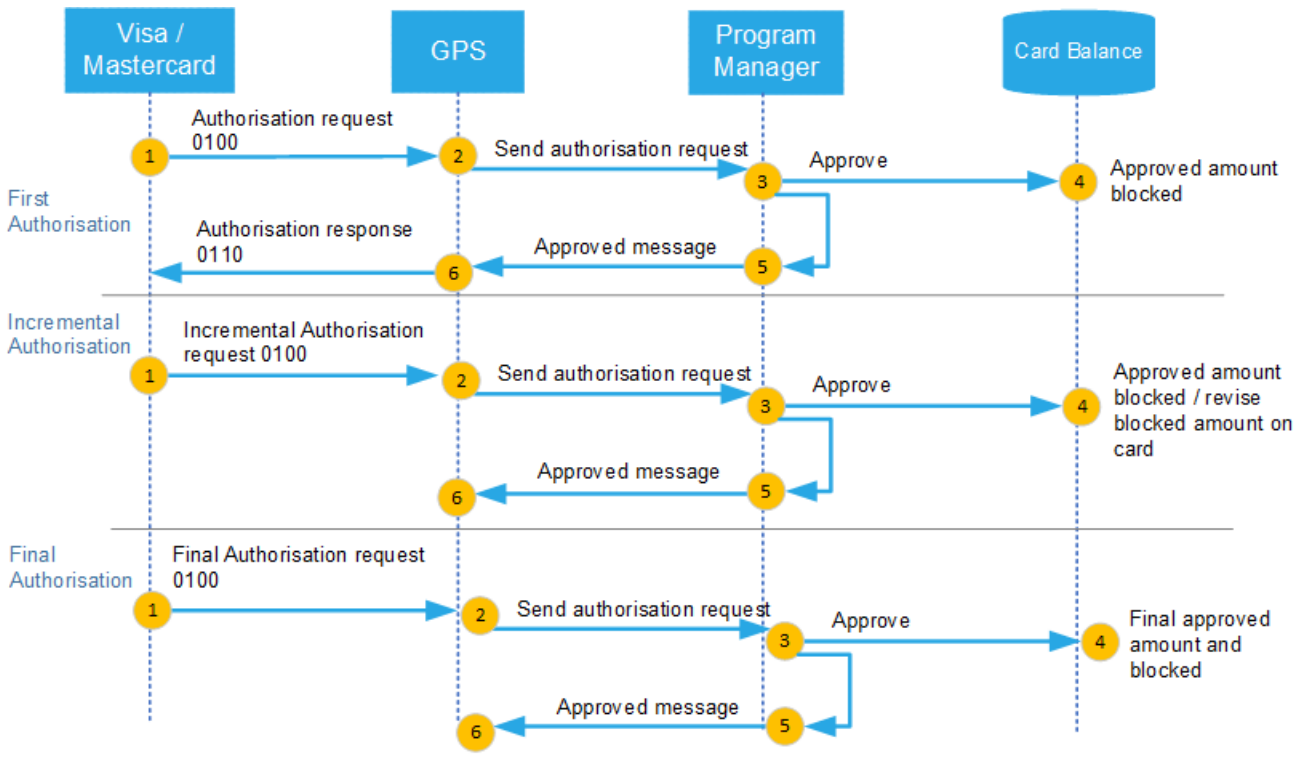


*Figure: Incremental Authorisation Reversal Flow*

- A request for the first authorisation is received, and follows the steps of a normal authorisation. See Authorisation with Approve.
- When you receive the incremental authorisation ((Auth_Type = P or 0), where you hold the balance and approve, you should block the additional amount.
- If you receive the final authorisation (Auth_Type = F), where you hold the balance and approve, you should revise the amount blocked on the card based on the final amount.

You will receive a single financial presentment, which includes the sum of all incremental authorisations.

### AFD Authorisations

Authorisations from Automatic Fuel Dispensors (AFDs) work slightly differently to other types of authorisations. The initial amount authorised may be followed by an authorisation completion advice for either a higher or a lower amount. In EHI modes where you hold the balance, you should return an authorisation decision (approve or decline) and then update the blocked amount on the card, to reflect the new authorised amount.

## 1.7.2 Financials

GPS receives batch clearing files containing financial transactions (presentments) for authorisations that need settlement. Typically the authorisations happened the previous day. GPS processes the clearing files and sends a separate notification via EHI for each presentment transaction. For additional information see What are Presentments and how do they work?

### First Presentment

First presentment occurs when the merchant sends a request to take either part or all of the amount previously authorised on the card[1]. This can happen at the same time as the authorisation request or in some cases it can be much later. The Program Manager should attempt to match the presentment to the original authorisation request.

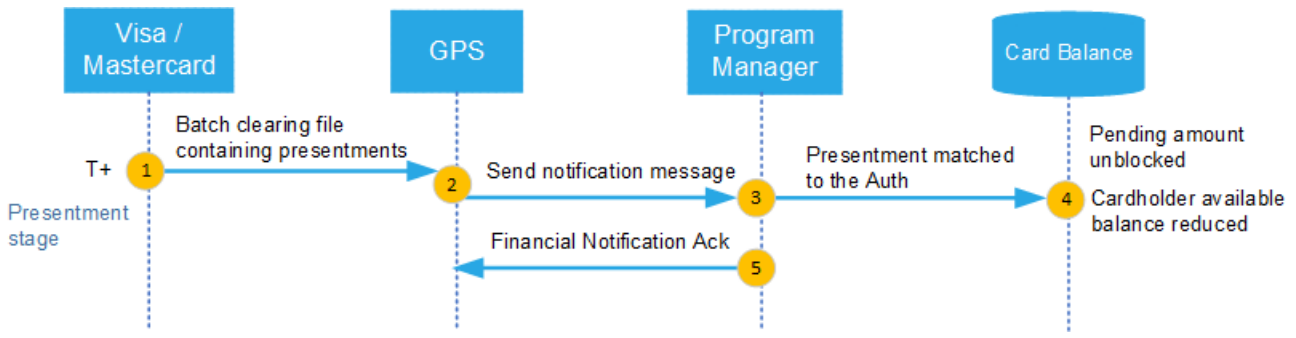


*Figure: Presenment Flow*

1. The scheme sends a batch clearing file to GPS.
2. GPS processes the file and sends a notification message per presentment, via EHI, to the external host (Program Manager).

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[1]You should be aware that in some cases it is possible for merchants to submit a presentment for more than the authorised amount. This is permitted for certain Merchant Category Codes (MCC), but it may also indicate a fraudulent transaction.

3. The Program Manager matches the presentment to the original authorisation. See Transaction Matching.
4. The Program Manager unblocks the pending amount and reduces the cardholder's available balance.
5. The Program Manager acknowledges the message: *<Acknowledgement>1</Acknowledgement>.*

## First Presentment for an Offline Transaction

In an offline transaction, GPS has not received a previous authorisation transaction, so when a financial presentment message is received from the card schemes, we are unable to match to an 0100 authorisation transaction. In this case, GPS creates a new authorisation transaction and sends this to the Program Manager, followed by the linked presentment message.

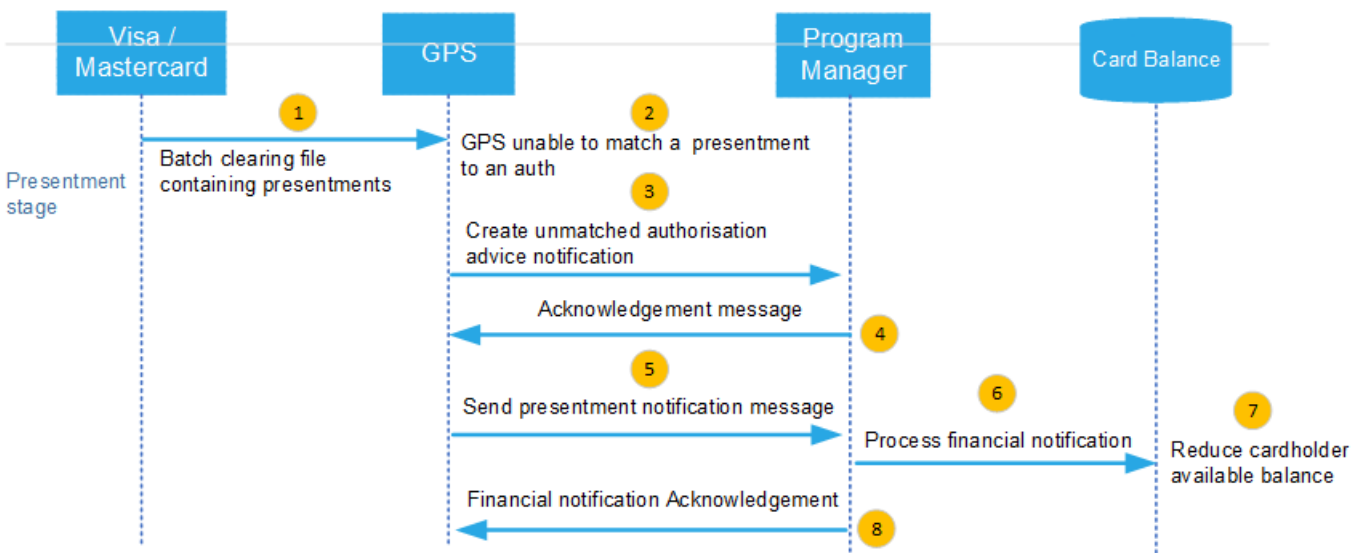


*Figure: Offline Transaction - Presentment Flow*

1. The scheme sends a batch clearing file to GPS.
2. GPS carries out validation checks. Since this is an offline transaction, GPS will not be able to match to an existing 0100 authorisation.
3. GPS creates an Unmatched Authorisation Advice Notification and sends it the external host (Program Manager).
4. The Program Manager acknowledges the message: *<Acknowledgement>1</Acknowledgement>.*.
5. GPS sends a presentment notification to the Program Manager.
6. The Program Manager processes the financial notification (matching it to the Unmatched Authorisation Advice Notification).
7. The Program Manager reduces the cardholder's available balance by the amount of the presentment.
8. The Program Manager returns a financial notification acknowledgement.

# 1.7.3 Chargebacks

A chargeback is a mechanism available to cardholders who dispute a transaction on the card and want part or all of a card payment returned. The chargeback is always issued by the card issuer or Program Manager. The creation of chargebacks is outside of the EHI flow; you can create a chargeback using either the Visa or Mastercard online Dispute Management portals or the GPS Smart Client. For more information, refer to the *GPS Chargeback Guide*.

## Chargeback and Second Presentment

A chargeback can only be created for a transaction that has a linked presentment. The Program Manager or card issuer creates the chargeback request, which is sent to the card scheme (Visa or Mastercard). This triggers the process described below.

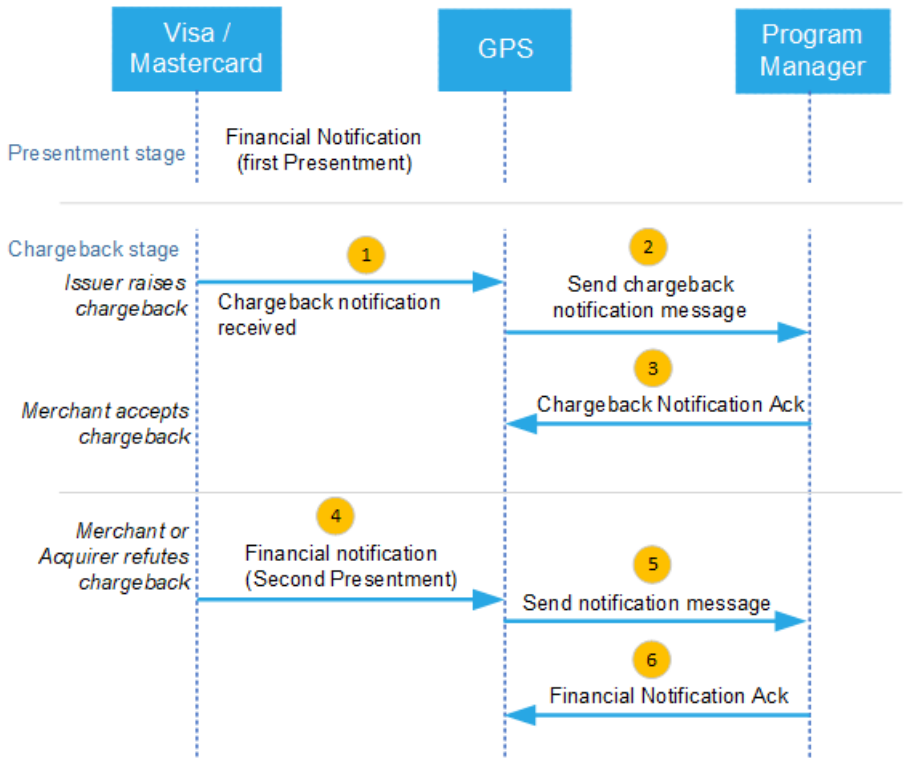


*Figure: ChargebackTransaction Flow*

1. GPS receives a chargeback notification from the card scheme (Visa or Mastercard).
2. GPS sends the chargeback notification message to the external host (Program Manager).
3. The Program Manager returns a chargeback notification acknowledgement.
4. If the merchant or acquirer accepts the chargeback, no further EHI messages are sent. (The Program Manager receives additional transaction notifications via the card scheme's dispute management portal or via Smart Client.)
5. If the merchant or acquirer does not accept the chargeback, GPS receives a second presentment notification from the card scheme.
6. GPS sends the second presentment notification message to the Program Manager.
7. The Program Manager returns a notification acknowledgement.

**Note:** When a chargeback is raised, you should always return the disputed amount to the cardholder within the time period prescribed by the card scheme and issuer regulations relevant to your region.

# 1.8 Transaction Types

EHI sends the following transaction type messages to the external host:

| Message Type | Description | How to Process | How you should respond |
|---|---|---|---|
| Authorisation | A request message to approve or decline a payment authorisation. Authorisation type transactions includes normal authorisation requests and authorisation reversal from MasterCard/Visa.This type of message is a request to reserve a specified amount on the card to cover a later financial message which is expected to follow. | EHI modes 1,2,4,5: Approve or decline. If approved and you hold the balance, block the approved amount on the customer's card. | EHI modes 1,2,4,5: Return a decision (approve or decline) and an acknowledgement.<br>EHI modes 3: Return an acknowledgement. |
| Financial | A notification message which GPS generates based on the batch clearing files received from the card schemes. Financial type transactions include: First Presentment, Financial Reversal, Second Presentment, Chargeback, Chargeback Reversal and Fees. | Match to an existing authorisation or financial.<br>EHI modes 1,2,4,5: Update the card balance | Return an acknowledgement. |
| Load | A notification that the customer's card balance has been credited (via a Web Service or Smart Client). | Mode 3: just acknowledge<br>Modes 1,4,5: not applicable<br>Mode 2: Only applicable if GPS holds the balance. | Return an acknowledgement. |
| Unload | A notification that the customer's card balance has been debited (via a Web Service or Smart Client). | Mode 3: just acknowledge<br>Modes 1,4,5: not applicable<br>Mode 2: Only applicable if GPS holds the balance. | Return an acknowledgement. |
| Payment | A notification of a payment originating from a non-card network entity (e.g. faster payment or direct debit), paying funds into or out of the customer's card.<br>**Note**: This is only relevant to customers using the GPS Banking-enabled card functionality. | Mode 3: just acknowledge<br>Modes 1,4,5: acknowledge and process (update balance)<br>Mode 2: Please check with your Implementation Manager. | Return an acknowledgement. |
| Balance Adjustment | A notification that the customer's balance has been updated (via a Web Service or Smart Client). This can be either a credit or debit. | Mode 3: just acknowledge<br>Modes 1,4,5: not applicable<br>Mode 2: Only applicable if GPS holds the balance. | Return an acknowledgement. |
| Card Expiry | A notification that the customer's card has expired. GPS generates this based on the expiry date configured for the card. | Just acknowledge. You can decide whether to renew the card (using Web Services) | Return an acknowledgement. |

# 1.9 EHI Data Feeds

The EHI can be used as a source of read-only transaction data. For each transactional operation that was processed by GPS, the EHI sends a notification message to your external host system (i.e., to the external host URL endpoint you have requested for your programme). The notification message contains all key attributes of the processed transaction. As with the authorisation advice, the notifications are sent to the external host in real time.

The sections below list the most important fields for each type of message. For details of all the fields in the GetTransaction message, see GetTransaction Messages. For details of all the fields in the Cut Off message, see Cut Off Message

### GetTransaction message: Real-time transactional data feed fields

Data that is passed to the external host in transaction messages includes the following fields:

| | | |
|---|---|---|
| Actual Balance | Available Balance | Billing Amount |
| Billing Currency | Blocked Amount | Customer Reference |
| FX Padding | Fixed Fee | Rate Fee |
| Merchant Category Code (MCC) | Padding | Note |
| Settlement Amount | Settlement Currency | Token |
| Transaction Link ID | Transaction Amount | Transaction Currency |
| Transaction Country | Transaction Description | Transaction ID |
| Transaction Date | Transaction Status | Transaction Type |
| Status Code | Processing Code | |

### GetTransaction message: Authorisation and presentment transactions fields

Authorisation and presentment transactions include the following additional attributes:

| | | |
|---|---|---|
| Transmission Date and Time | Time Local Transaction | Acquiring Institution ID Code |
| Authorization ID Response | POS Terminal ID | Merchant ID |
| Merchant Name | Retrieval Reference Number | Response Code |
| Point-of-Service (POS) Data | MCC Code and MCC Description. | |

### Cut off message fields

In addition to the real-time transaction data feed, you can opt to receive cut off messages (Cut_Off) at predefined intervals which contain the following data:

| | | |
|---|---|---|
| ProductID | CutoffDate | Auths_Acknowledged |
| Auths_NotAcknowledged | Financials_Acknowledged | Financials_NotAcknowledged |
| LoadsUnloads_Acknowledged | LoadsUnloads_NotAcknowledged | BalanceAdjustExpiry_Acknowledged |
| BalanceAdjustExpiry_Acknowledged | FirstTxn_ID | |

# 1.10 EHI Configuration Options

This section provides information on the available EHI configuration options. Your implementation manager will set up EHI based on the options you selected in your product setup form.

| Field | Field |
|---|---|
| Mode | Your EHI mode. See EHI Operating Modes. |
| Declined Transactions | Whether to include declined transactions in EHI messages (used for information purposes only). |
| Stand In | In Mode 2: If this is enabled and there is no connection to Host then we operate as we would if there was no external host at all and authorise/decline based on balance and other information we have in our system. |
| Approve with Load | In Mode 2: The authorisation can be approved with simultaneous instructing to load certain amount to a card. If this is required and the product is enabled with the 'Approval with Load' feature, the authorisation response message of the approved transactions has to contain '0A' response code and amount to load. The Load will be done before the transaction amount is debited from the current balance.<br>**Note**: Multi-Fx cards are not supported. |
| Delay Send | Applicable in Mode 3 only: If enabled, EHI messages only sends messages after the defined time period. If not enabled. EHI attempts to send messages in real-time first, with susbequent attempts after the defined delay. |
| Transaction Types | The transaction types you want EHI to send:<br>• Authorization<br>• Financial (mandatory for modes 1 and 2)<br>• Load/ Unload<br>• Balance Adjustment / Expiry |
| External Host URL | The URL EHI uses to send messages to your external host. We can support different endpoint (URLs) for each product, but only one endpoint per product.<br>**Note**: GPS recommend using IP address instead of DNS names. |
| Timeout after | Determines how long EHI waits for a response from the external host. The default is 200 milliseconds. |
| Repeat after | Indicates how long EHI waits to resend the message when it does receive any acknowledgement from the external host. The default is 2 minutes. |
| Times | Indicate how many times EHI needs to resend the message. Default value is 5. |
| Remove from buffer table after | Indicates the number of days your transaction data is stored in the GPS buffer table.This can be useful in the scenario where your system is down and you need time to fix it. Once the system is back up GPS can flush all data from the buffer. Default is 3 days. Maximum is 7 days. |
| Send Cut of Message | Whether to send a cut off message. see Cut Off Messages. |
| Cut off Interval | The cut-off period in hours (e.g. if it is set to 4 hours EHI sends a cut-off message every 4 hours). Default is 4 hours. |
| Cut off URL | The URL EHI uses to send Cut Off messages to your external host. |
| Version | EHI version. |
| Optional fields in Authorisation request message | Select the optional fields you would like sent in Authorisation messages:<br>• CVV2<br>• PIN<br>• Expiry Date<br>• PAN Sequence Number (If PIN is selected, please provide PIN Key File)<br>• CVV2<br>• Expiry |
| Notify | The email address to notify you If EHI cannot reach the external host. |

# 1.11 Integration Steps

This section describes the steps in integrating your external host system to the External Host Interface (EHI).

## 1.11.1 Setting up in the Test Environment

1. Complete your GPS product setup form. See EHI Configuration Options.
2. Provide GPS with a list of static IP addresses to your external host server for GPS to whitelist.
3. GPs will set you up on the GPS test system. Your implementation manager will:
   - Provide you with your user credentials to access the test system.
   - Set up your External Host URL on EHI for sending GetTransaction messages.
   - Set up your External Host URL on EHI for sending CutOff messages.
   - Provide you with details of how to install Smart Client, where you can manage your account and view transactions submitted to the test system.

   **Note:** The External Host URLs you provide need to resolve to the static IP addresses you provided to GPS.
4. If you require a secure TLS connection. You need to provide the SSL Certification. See TCP Connection.
5. Integrate to GPS using the Web Services API, in order to create cards and load them with funds. For details, see the *Web Services Guide*.
6. Set up your external host systems to be able to receive and process messages from EHI. Your systems should be able to:
   - Check for duplicate messages, respond to and acknowledge EHI messages. See Processing EHI Transactions.
   - Match and process transactions. See Transaction Matching.
   - Process GetMessage fields. See GetTransaction Messages.
   - Receive CutOf messages. See CutOff messages.
7. For EHI modes 1,2,4 and 5 where you provide the approve or decline decision for an authorisation transaction, make sure your systems can process the GetTransaction messages and block the available card balance accordingly.
8. For EHI modes 1,2,4 and 5 where you hold the balance, make sure your systems can process the GetTransaction financial messages and update the card balance accordingly.
9. Submit test authorisation and financial transactions to the test environment:
   - You can requests test transactions from your implementation manager.
   - You can use the Card Transaction Service (CTS) to create test transactions for different use case scenarios (e.g., POS, ATM, ecommerce and MOTO payments). See the *CTS User Guide*.

## 1.11.2 Setting up in Production

Once you have completed your integration and your card issuer has approved your Product Setup Form (PSF), we can you set up in the live environment.

1. A VPN connection to GPS is required to connect to the production system.
2. You will need to generate some live cards (i.e., internal pilot cards) from your card manufacturer in order to run live transactions. For more information on how to generate cards, see the *Web Services Guide* or contact your Implementation Manager.
3. Run card tests on live cards for different use case scenarios and check the end-to-end process. See Testing Use Case Scenarios below.
   Make sure your service works before rolling out!

**Tip:** Your first live cards should be for internal, pilot use only and GPS recommend you complete your programme testing first before launching your service to cardholders and investors.

### Testing Use Case Scenarios

Below are details of the type of test scenarios which GPS recommends you complete:

- Do the cards support the functionality and behavior you expect?
- Are the CHIP profiles on the cards correctly set up? (i.e., is the card working and card validation working as expected.)
- Is your mobile app behaving as expected? e.g., displaying real-time details of card status, card transactions and account balances)

- If you are using for mobile tokenisation services such as VDEP and MDES have you tested different use case scenarios?
- Have you tested other components of your card service, such as:
    - Recurring payments
    - Fees
    - Cardholder authentication (3D Secure)
    - Exception flows, such as reversals, refunds and chargebacks.
- Have you checked the cardholder journey from an end-to-end perspective?

## GPS Card Tests

GPS runs a set of generic pavement tests where we check a range of card functionality, such as:

- Keys are set up correctly
- Both contact and contactless card transactions are working
- The card usage groups set up for your programme are declining as expected
- General authorisations are being received, refunds are working correctly, authorisation requests are being declined and approved as expected.

**Note:** In order to check the GPS platform is behaving according to how configured in your product setup form, we require a selection of cards per programme. Cards should be loaded with sufficient funds to enable testing.

# 1.11.3 Troubleshooting

Below are examples of some of the type of issues your systems need to be able to handle:

- System timeouts and connection issues
- Duplicate transactions and unmatchable transactions
- Reversals (0400 messages), where you need to approve and unblock funds
- Balance enquiries and issues relating to the card balance
- Cryptogram failures on the CHIP for a new chip profile being launched; this is normally resolved by the Card Manfuacturer

For more information see the Troubleshooting FAQs.

# Section 2: Processing EHI Transactions

You should read this section to understand how to integrate your external host system to EHI,

This section covers the following topics:

- Processing EHI Transactions
- Transaction Matching
- Data Types
- GetTransaction Message
- Cut_Off Messages

**Tip:** If you are new to EHI and want to understand how EHI works and the available configuration options, see the Getting Started section.

# 2.1 Processing EHI Transactions

This section describes how to process the real-time transactional data sent from EHI to your external host system. When your external host system receives a message from EHI, it must be able to implement the following:

- Return an acknowledgement to EHI - within the time limit set for a response
- Respond to authorisation requests - including updating the card balance (where required by your EHI mode).
- Respond to cut-off messages (optional)
- Check for duplicate requests - and respond to EHI accordingly
- Perform transaction matching and processing - this is internal to your systems and no response to EHI is required. For details, see Transaction Matching.

## 2.1.1 Responding to EHI Messages

### Returning an Acknowledgment to EHI

When you receive a WSDL GetTransaction message, your external host system must respond to EHI within the allowed time limit for a response (the default time limit is 200 ms), with the <Acknowledgement> field set to "1" to indicate that you have succesfully processed the transaction.

EHI waits for a response with the <Acknowledgement> field set to "1" and if no response is received (or an acknowledgement = 0 is received), it continues to re-send the message until either:

- It receives a response with the <Acknowledgement> field set to "1".

  Or

- The maximum number of permitted re-tries configured in GPS has been reached for this message.

### Responding to Authorisation Requests

In an authorisation request message, the message transaction ID (MTID) = *0100* and the transaction type (Txn_Type) = *A*.

You may also receive an authorisation reversal request (MTID = *0400* and Txn_Type) = *D*), which also needs a decision

In all EHI modes, your systems should always acknowledge the authorisation message. In EHI modes 1,2,4 and 5 your systems should respond with an authorisation decision (*approve* or *decline*). See EHI Operating Modes.

- For an authorisation where you approve, your response to EHI should look like this: *<ResponseStatus>00</ResponseStatus>* and *<Acknowledgement>1</Acknowledgement>*
- For an authorisation where you decline, your response to EHI should look something like this: *<ResponseStatus>05</ResponseStatus>* and *<Acknowledgement>1</Acknowledgement>* *

* ResponseStatus = 00 indicates the request is approved; ResponseStatus = 05 indicates *Do not honour* (decline) –you can chose any suitable decline response code. See Response Codes. Acknowledgement = 1 informs GPS that the message was received and GPS does not need to resend.

For EHI mode 3 (advice only), your reponse should look like this: *<Acknowledgement>1</Acknowledgement>*

#### What happens if EHI does not receive an authorisation response?

If no response is received in the time limit for an authorisation then:

- EHI Mode 1: GPS declines the transaction.
- EHI Mode 2: If Stand-In processing is not enabled, GPS declines the transaction. If Stand-In processing is enabled, GPS makes the authorisation decision, which could be *Approve* or *Decline*.
- EHI Modes 4 and 5: GPS makes a stand-in authorisation decision, which could be *Approve* or *Decline*.
- (EHI Mode 3 is advice only)

GPS then resends the transaction to notify you of the authorisation decision made, with these changes:

- <SendingAttemptCount> field will be:
  - EHI modes 1 and 2: "1" (1st repeat) or higher ("n" nth repeat)
  - EHI modes 4 and 5: "0" on first message, (and +1 for each time re-attempted)
- <Authorised_by_GPS> field is set to "Y"

- <Txn_Stat_Code> field is set to “A” (Approved) or “I” (Declined)
- <Resp_Code_DE39> field is set to the response code sent back to the network (normally “00” if approved, or “05” (declined) in most cases.)

**Note:** If you get an advice that has changed the authorisation decision you originally made, this may indicate that GPS did not receive or could not process your original decision (e.g., due to a network timeout or invalid response format) and has therefore applied the default response for your mode. In this case you should acknowledge the advice and reverse the effect of the original approval (e.g., by unblocking any previously reserved amounts).

### How GPS responds to the External Host

The table below shows a summary of the type of message content sent to the external host *after* the initial authorisation request.

| EHI Mode | Reponse Received from external host* | GPS Response | Acknowledgement Message to External Host Includes | How you should Respond |
|---|---|---|---|---|
| 1 | No | Decline | Declined: 0100A - Authorised by GPS N Txn_Stat_Code "I" <DE39 Reason code> Sending attempt count 1. | Acknowledge |
| 1 | Yes (approve or decline) | Pass on to scheme | No message sent to external host. | - |
| 2 | N/a ** | GPS approved | Approved 0100A - Authorised by GPS N Txn_Stat_Code "A" <DE39 Reason code 00> Sending attempt count 0. | Approve or decline |
| 2 | N/a ** | GPS declined | Declined: 0100A - Authorised by GPS N Txn_Stat_Code "I" <DE39 Reason code> Sending attempt count 0. | Acknowledge or override[1] |
| 2 | Yes | Pass on to scheme | No message sent to external host. | - |
| 3 | N/a ** | GPS approved | Approved: 0100A - Authorised by GPS Y Txn_Stat_Code "A" <DE39 Reason code 00> Sending attempt count 0. | Acknowledge |
| 3 | N/a ** | GPS declined | 0100A - Authorised by GPS N Txn_Stat_Code "I" <DE39 Reason code> Sending attempt count 0. | Acknowledge |
| 4 or 5 | No | STIP approved | Approved 0100A - Authorised by GPS Y Txn_Stat_Code "A" <DE39 Reason code 00> Sending attempt count 0. | Acknowledge |
| 4 or 5 | No | STIP declined | Declined: 0100A - Authorised by GPS N Txn_Stat_Code "I" <DE39 Reason code> Sending attempt count 0. | Acknowledge |
| 4 or 5 | Yes | Pass on to scheme | No message sent to external host. | - |

### Notes

* Response must be received within the default time limit for a response (e.g., 200 ms). Note: although you may have responded within the time limit, in some circumstances GPS may not have received or processed your response due to a network timeout or invalid response format.

** An authorisation response is not applicable to Modes 2 and 3 where GPS makes the initial authorisation decline or approval decision. In Mode 3 GPS sends the response directly to the card scheme and sends the external host an acknowledgement. In Mode 2 GPS first sends any approved decision to the external host, which can override the decision.

## Responding to Financial Messages

Financial messages include transactions such as first presentments, financial reversal, chargebacks and fees.

Your response to EHI should lool like this: *<ResponseStatus>00</ResponseStatus>* and *<Acknowledgement>1</Acknowledgement>*

## Responding to Cut_Off Messages

When responding to Cut_Off messages, if you have successfully processed, <Cut_OffResult> should = “1”.

If a response with <Cut_OffResult> is received with “0” (or no valid response), EHI does not resend the message. (However, not that in a future version GPS may re-send the Cut_Off message, as this indicates you have failed to process it and it requires re-sending.)

[1] In mode 2 - Approve with Load, you can override a GPS decline decision if the reason for the decline is insufficient balance (e.g., where the card balance held on your systems indicates the card has sufficient funds). In this case you should use the load card web service to update the GPS held balance.

# 2.1.2 Checking for Duplicates

**Note:** In some cases it is possible that when your external host responds to EHI with a valid acknowledgement (<Acknowledgement>1</Acknowledgement>), due to network issues, your acknowledgement may not be received by EHI. In this case EHI will re-send the message, resulting in a duplicate.

## How to Identify a Duplicate Message

For GetTransaction messages, if either of the following conditions is true, then the message is a duplicate:

- If the <SendingAttemptCount> field is "1" or higher (i.e. non-zero)
- If you have already received a message with the same transaction ID (txn_id).

## How to Process a Duplicate Message

1. First check to see if the <SendingAttemptCount> field is "1" or higher (i.e. non-zero).
2. If it is higher than 1, then check the transaction ID (TXn_ID) field. This is unique for every transaction (for the GetTransaction messages.)
3. If the transaction ID matches the transaction ID of an existing record in your database, this indicates a duplicate, which you should process as follows:

- If the original message was an advice, and your external host already has it then:
  - No need to re-process this
  - Respond with *<Acknowledgement>1</Acknowledgement>*
- If the original message was an advice, and your external host does not have it then:
  - Process it
  - Respond with *<Acknowledgement>1</Acknowledgement>*
- If the original message was an authorisation request (your external host is asked approve or decline), but the repeat is an advice, it will still have the same MTID. This table explains what to do:

| External Host Originally: | Advice Indicates that GPS: | Action required by the External Host |
|---|---|---|
| Approved transaction | Approved transaction | Nothing to do |
| Approved transaction | Declined transaction | Reverse effect of original approval |
| Declined transaction | Approved transaction | Action the approval |
| Declined transaction | Declined transaction | Nothing to do |
| Never received transaction | Approved transaction | Action the approval |
| Never received transaction | Declined transaction | Nothing to do (but it can be logged) |

## Cut_Off Duplicate Checking

For Cut_Off messages, since the <CutoffID> field is unique, you can use this field to detect if the message is a repeat.

**Note:** EHI currently does not re-send a Cut_Off message if it does not receive a valid response with <Cut_OffResult> of "1". However, this may be added in a future version, so you should configure your systems to expect this.

# 2.2 Transaction Matching

A typical card payment transaction generates multiple messages during its life cycle. The GetTransaction message types you receive for a transaction must be linked to the previous messages for that transaction. This matching enables you to track the history of the transaction, compare the financial effect of a new messages with previous messages and re-calculate card balances.

## 2.2.1 Matching Overview

Your systems should match new to previous transactions as follows:

| New Message | ..match to.. | Previous Message |
|---|---|---|
| Authorization Request (A) | ⟶ | Authorization Request (A) |
| Authorization Reversal (D) | ⟶ | Authorization Request (A) |
| Authorization Advice (J) | ⟶ | Authorization Request (A) |
| Financial (P) | ⟶ | Authorization Request (A) or Authorization Advice (J) |
| Financial Reversal (E) | ⟶ | Financial (P, N) |
| Chargeback (C, H) | ⟶ | Financial (P, N)) |
| Chargeback Reversal (K) | ⟶ | Chargeback (C, H) |
| Financial (N) | ⟶ | Chargeback (C, H) |

*Figure: Transaction Matching Criteria*

For further details, see the Transaction Matching Criteria below.

### Matching Criteria and Accuracy

**Note:** Matching a transaction to its original (e.g. *Presentment* to matching *Authorisation*, or *Authorisation Reversal* to matching *Authorisation*) is based on the information received. In most cases transactions match. However, acquirers do not always send accurate information, so mistakes can occur.[1]

You can use the following options to find a match:

- The matching criteria recommended in the section Transaction Matching Criteria
- Your own matching criteria
- A combination of both the above.

As a general rule, the more matching fields that correctly match, the more reliable the match. If some fields match and some do not, this indicates an 'unreliable' match.

### Transaction Matching Criteria

The table below provides best-practise guidelines on how to match transactions.

Match Criteria:

- If "*Match to*" is "-", this means there is nothing to match against.
- "THIS" = this transaction (i.e. the one with MTID + Txn_Type from the same row) is the transaction you have just received in the EHI message
- "OTHER" = the other transaction (in the "Match to" column) that is being found by matching (to match to THIS)
- Syntax: *OTHER.<other_field_name> = THIS.<this_field_name>* where the field names refer to the GetTransaction Message Fields.

| MTID | Txn_ Type | Description | Match to? | Match Criteria |
|---|---|---|---|---|
| 0100 | A | Authorisation Request | -<br>(For an incremental authorisation, match to Authorisation Request) | OTHER.token=THIS.token<br>AND<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle |
| - | D | Automatic Authorisation Reversal | Authorisation Request | OTHER.token=THIS.token<br>AND<br>OTHER.trans_link = THIS.trans_link |
| 0101 | A | Authorisation Repeat (Visa Only)<br>**Note**: this transaction is uncommon as only | Authorisation Request | OTHER.mtid='0100'<br>AND<br>OTHER.traceid_lifecycle=THIS.traceid_lifecycle |

| MTID | Txn_ Type | Description | Match to? | Match Criteria |
|---|---|---|---|---|
| | | a few acquirers use it. Most acquirers send a new 0100 authorisation request.<br>If you decline it, in most circumstances the terminal will send a new 0100 authorisation. | | AND<br>OTHER.trans_link=THIS.trans_link<br>AND<br>OTHER.Ret_Ref_No_DE37=THIS.Ret_Ref_No_DE37<br>AND<br>OTHER.TXN_Time_DE07=THIS.TXN_Time_DE07<br>AND<br>OTHER.POS_Termnl_DE41=THIS.POS_Termnl_DE41<br>AND<br>OTHER.Token=THIS.Token |
| 0120 | J | Authorisation Advice | Authorisation Request (Auth request may not exist) | OTHER.token=THIS.token<br>AND (if THIS.traceid_lifecycle exists)<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND (if THIS.trans_link exists)<br>OTHER.trans_link = THIS.trans_link<br>**Note**: If neither THIS.traceid_lifecycle or THIS.trans_link is present, then there is no match. Normally traceid_lifecycle will always be present if an authorisation exists.<br>For most authorisation advices, Auth_Code_DE38 and trans_link will probably be missing. |
| 0120 | D | Authorisation reversal due to a 0120 Automated Fuel Dispenser Advice | Authorisation Request | OTHER.token=THIS.token<br>AND (if THIS.traceid_lifecycle exists)<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND (if THIS.trans_link exists)<br>OTHER.trans_link = THIS.trans_link<br>**Note**: If neither THIS.traceid_lifecycle or THIS.trans_link is present, then there is no match. Normally traceid_lifecycle will always be present if an authorisation exists. |
| 0400 | D | Authorisation Reversal Request | Authorisation Request | OTHER.token=THIS.token<br>AND (if THIS.traceid_lifecycle exists)<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND (if THIS.trans_link exists)<br>OTHER.trans_link = THIS.trans_link<br>**Note**: If neither THIS.traceid_lifecycle or THIS.trans_link is present, then there is no match. If the reversal is due to timeout at the acquirer, THIS.traceid_lifecycle may not exist. |
| 0420 | D | Authorisation Reversal Advice | Authorisation Request | OTHER.token=THIS.token<br>AND (if THIS.traceid_lifecycle exists)<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND (if THIS.trans_link exists)<br>OTHER.trans_link = THIS.trans_link<br>**Note**: If neither THIS.traceid_lifecycle or THIS.trans_link is present, then there is no match.<br>**Note**: If the reversal is due to a timeout at the acquirer, THIS.traceid_lifecycle may not exist. |
| 1240<br>05pp<br>06pp<br>07pp<br><br>(p=space) | A | Authorisation Advice Notification<br>(New dummy authorisation created if a financial notification has no matching authorisation.)<br>1240 for Mastercard<br>05pp, 06pp or 07pp for Visa where p=space | - | This message should be ignored. It indicates an offline transaction where GPS has not received a previous authorisation request. See First Presentment for an Offline Transaction.<br>You will receive the financial notification corresponding to authorisation advice, which has all the information required. |
| 1240 | E | Financial Reversal | Financial Notification | OTHER.Acquirer_Reference_Data_031 = THIS.Acquirer_Reference_Data_031<br>AND<br>OTHER.token=THIS.token<br>AND<br>OTHER.Txn_Amt=THIS.Txn_Amt<br>AND<br>OTHER.Txn_CCy=THIS.Txn_CCy<br>AND<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND<br>OTHER.POS_Time_DE12=THIS.POS_Time_DE12<br>AND<br>OTHER.Ret_Ref_No_DE37=THIS. Ret_Ref_No_DE37 |

| MTID | Txn_ Type | Description | Match to? | Match Criteria |
|---|---|---|---|---|
| | | | | **Note**: In some cases both OTHER.Auth_Code_DE38 and THIS.Auth_Code_DE38 are not present. |
| 1240 | C | Chargeback Notification | Financial Notification | OTHER.Acquirer_Reference_Data_031 = THIS.Acquirer_Reference_Data_031<br>AND<br>OTHER.token=THIS.token<br>AND<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND<br>OTHER.trans_link = THIS.trans_link<br>**Note**: In some cases both -OTHER.Auth_Code_DE38 and THIS.Auth_Code_DE38 are not present. |
| 1240 | H | Chargeback Notification (Non-Credit) | Financial Notification | As above (see MTID=1240, Txn_Type='C') |
| 1240 | K | Chargeback Reversal | Chargeback | As above (see MTID=1240, Txn_Type='C'), except that OTHER (the original to match) will have Txn_Type of 'C' or 'H') |
| 1240 | N | Financial Notification (Second Presentment) | Financial Notification and/or Chargeback Notification (Txn_Type H or N) | As above (see MTID=1240, Txn_Type='C') |
| 1240 | P | Financial Notification<br>(First Presentment) | Authorisation<br>(0100 or 0120) | Rule 1: (reliable match if found, GPS and acquirer matching data)<br>OTHER.token=THIS.token<br>AND (if THIS.traceid_lifecycle exists)<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER.Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND<br>OTHER.trans_link = THIS.trans_link<br>AND<br>OTHER.TXn_ID = THIS.Matching_Txn_ID<br>AND OTHER.Txn_CCy = THIS.Txn_CCy<br>(see notes below )<br><br>Rule 2: (run if no match on rule 1, AND THIS.traceid_lifecycle exists. Uses Acquirer matching data only)<br>OTHER.token=THIS.token<br>AND<br>OTHER.traceid_lifecycle = THIS.traceid_lifecycle<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER. Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND OTHER.Txn_CCy = THIS.Txn_CCy<br>(see notes below too)<br><br>Rule 3: (run if no match on rule 1. Uses GPS matching data only)<br>OTHER.token=THIS.token<br>AND (if THIS.Auth_Code_DE38 exists)<br>OTHER.Auth_Code_DE38 = THIS.Auth_Code_DE38<br>AND<br>OTHER.trans_link = THIS.trans_link<br>AND<br>OTHER.TXn_ID = THIS.Matching_Txn_ID<br>AND OTHER.Txn_CCy = THIS.Txn_CCy<br>(see notes below)<br><br>**NOTES**<br>1. OTHER.trans_link may not exist if matching to a MTID=0120. So rule 2 is useful here.<br>2. Other fields that should normally match include:<br>• Txn_Amt (except for tips, partial approval, many-auths to 1 Presentment)<br>• Proc_Code (but not a 1-to-1 match)<br>• Merch_ID_DE42<br>• POS_Termnl_DE41<br>3. If rule 2 matches and rule 3 does not, (or vice-versa), this indicates an unreliable match. It is up to you if you use the found match or not.<br>4.Normally traceid_lifecycle will always be present if an authorisation exists. |
| 05pp<br><br>(p = space) | N | Financial Notification of a Purchase (from Visa)<br>(Second Presentment) | Authorisation | As above (see MTID=1240, Txn_Type='N') |

| MTID | Txn_ Type | Description | Match to? | Match Criteria |
|---|---|---|---|---|
| 06pp (p = space) | N | Financial Notification of a Refund/Credit-to-cardholder (from Visa) (Second Presentment) | Authorisation | As above (see MTID=1240, Txn_Type='N') |
| 07pp (p = space) | N | Financial Notification of a Cash With-drawal/disbursement (from Visa) (Second Presentment) | Authorisation | As above (see MTID=1240, Txn_Type='N') |
| 05pp (p = space) | P | Financial Notification of a Purchase (from Visa) | Authorisation | As above (see MTID=1240, Txn_Type='P') |
| 06pp (p = space) | P | Financial Notification of a Refund/Credit-to-cardholder (from Visa) (First Presentment) | Authorisation | As above (see MTID=1240, Txn_Type='P') |
| 07pp (p = space) | P | Financial Notification of a Cash With-drawal/disbursement (from Visa) (First Presentment) | Authorisation | As above (see MTID=1240, Txn_Type='P') |
| 25pp (p = space) | E | Financial Reversal of a Purchase (from Visa) (First Presentment) | Prior Financial notification (MTID=05) | As 1240 Financial Reversal above (see MTID=1240 Txn_Type='E') |
| 26pp (p = space) | E | Financial Reversal of a Refund/Credit-to-cardholder (from Visa) | Prior Financial notification (MTID=06) | As 1240 Financial Reversal above (see MTID=1240 Txn_Type='E') |
| 27pp (p = space) | E | Financial Reversal of a Cash With-drawal/disbursement (from Visa) | Prior Financial notification (MTID=07) | As 1240 Financial Reversal above (see MTID=1240 Txn_Type='E') |
| - | L | Load | - | - |
| - | U | Unload | - | - |
| - | G | Payment | - | - |
| - | B | Balance Adjustment | - | - |
| - | Y | Card Expiry | - | - |
| - | P | Fee | - | - |

## 2.2.2 Transaction Processing Summary

The following table summarises how you should process the different types of transactions sent via EHI to the external host. For additional information, see Transaction Type Decoding.

| MTID | Txn_ Type | Description | Action |
|---|---|---|---|
| 0100 | A | Authorisation request. | Process normally.<br>**Note**: if the traceid_lifecycle value matches the traceid_lifecycle value in a previous 0100 authorisation request, then this is an incremental authorisation. (Normally a single financial, with the same traceid_life-cycle, will arrive in this case.) |
| | D | Automatic authorisation reversal.<br>GPS automatically reverses a transaction if it does not receive a pre-sentment transaction from the network within the hanging filter period.<br>In the EHI message, all the transaction data fields normally sent by the acquirer (e.g., STAN, RRN, AID and FID) will be identical to the original authorisation request (MTID=0100, Txn_Type='A'). | Match to the original authorisation request (MTID=0100, Txn_Type='A') and process accordingly. |
| 0101 | A | Authorisation repeat (Visa only) | Match to see if an 0100 original existed (see above matching criteria table.)<br>• If you find the 0100 original, this is the *same* authorisation. In this case, respond with the original 0100 response (and do not treat this as a new authorisation.)<br>• If you cannot find the 0100 original, this indicates that you did not receive the original 0100 message. In this case, treat this as a new authorisation, and process as with a 0100 message with Txn_ Type='A'. |
| 0120 | A | Dummy authorisation advice<br>(Created from a Presentment-only transaction.) | Ignore<br>This is used to indicate that a presentment has no matching author-isation. |
| 0120 | J | Authorisation advice<br>Also provided in the following cases:<br>• Stand-in processing (STIP) by the network.<br>• Automated Fuel Dispenser (AFD) transactions if the final amount is higher than the amount originally authorised in the MTID=0100 Txn_Type="A" authorisation request. | Match to the original authorisation request (MTID=0100, Txn_Type='A') and process advice normally (block funds if approved.)<br>**Note**: If a matching authorisation request exists (that needed to be can-celled), then you will separately receive a reversal (e.g. if the original response to the original authorisation request was not sent to the ter-minal).<br>The following fields give more information on the advice:<br>• Response_Source<br>• Response_Source_Why<br>• Message_Source<br>• Message_Why |
| 0120 | D | Authorisation reversal due to an Automated Fuel Dispenser (AFD) 0120 Advice message.<br>(An AFD sends a 0120 advice to confirm how much fuel was actually dispensed. GPS sends this to you as a reversal, to reverse the unspent part of the original authorisation from the AFD.) | Match to the original authorisation request (MTID=0100, Txn_Type='A') and process this reversal accordingly. |
| 0400 | D | Authorisation reversal request<br>This is a reversal received from the network, to reverse a prior author-isation request (MTID=0100, Txn_Type='A'). | Check you have not already received and processed this reversal. If so, ignore it.<br>Match to the original authorisation request (MTID=0100, Txn_Type='A') and process accordingly (unblock the reversal amount)<br>**Note**: if the Txn_Amt in the reversal matches the Txn_Amt in the original authorisation request, then this indicates a full reversal. Unblock whatever was originally blocked. (The Bill_Amt in the reversal may slightly differ to the Bill_Amt in the original due to exchange rate fluc-tuations.) |
| 0420 | D | Authorisation reversal advice<br>This is a reversal received from the network, to reverse a prior author-isation request (MTID=0100, Txn_Type='A').<br>This is effectively identical to to above (MTID=0400, Txn_Type='D'), only the MTID is different.<br>The only reason for the difference is that we are sending the MTID as | Check you have not already received and processed this reversal. If so, ignore it.<br>Match to the original authorisation request (MTID=0100, Txn_Type='A') and process accordingly (unblock the reversal amount)<br>**Note**: if the Txn_Amt in the reversal matches the Txn_Amt in the original authorisation request, then this indicates a full reversal. Unblock |

| MTID | Txn_ Type | Description | Action |
|---|---|---|---|
| | | received from the network, and some network specifications for reversals use 0400, and others use 0420. But there is no effective difference - both should be treated as a reversal advice (as in you cannot decline.)<br>(Note: Visa use 0400 and 0420. Mastercard use 0400 when originated by the acquirer, and 0420 when originated by the network.) | whatever was originally blocked. (The Bill_Amt in the reversal may slightly differ to the Bill_Amt in the original due to exchange rate fluctuations.) |
| 1240<br>05pp<br>06pp<br>07pp<br>(p = space) | A | Authorisation advice notification<br>(Dummy authorisation created if a financial notification has no matching authorisation.)<br>1240 if from Mastercard<br>05pp, 06pp, or 07pp if from Visa. (p = space) | Discard - this is not needed.<br>(The purpose of this message is to provide a dummy authorisation to match to a financial notification.) |
| 1240 | E | Financial reversal | Match to a financial notification (MTID=1240, Txn_Type='P' or Txn_Type='N') and process accordingly |
| 1240 | C | Chargeback notification | Process normally.<br>(Optionally match to a financial notification (MTID=1240, Txn_Type='P') or (MTID=1240, Txn_Type='N')) |
| 1240 | H | Chargeback notification (Non-Credit) | Process normally.<br>(Optionally match to a financial notification (MTID=1240, Txn_Type='P') or (MTID=1240, Txn_Type='N')) |
| 1240 | K | Chargeback reversal | Process normally.<br>This reverses the effect of a chargeback (e.g., if the chargeback changed the account balance, this reverses the effect on the account balance.)<br>Optionally match to the chargeback (MTID=1240, (Txn_Type='C' or Txn_Type='H')) |
| 1240 | N | Financial notification (Second Presentment) | Process normally.<br>(Optionally match to a financial notification (MTID=1240, Txn_Type='P') or Chargeback (MTID=1240, Txn_Type='H' / 'C') |
| 1240 | P | Financial notification<br>(First Presentment) | Match to the original authorisation request (MTID=0100, Txn_Type='A') and process accordingly. Note that not all financial notifications will have a matching authorisation. |
| 05pp<br>(p = space) | N | Financial notification (Second Presentment) | Process normally.<br>(Optionally match to a financial notification (MTID=05pp, Txn_Type='P') or Chargeback (MTID=1240, Txn_Type='H' / 'C') |
| 06pp<br>(p = space) | N | Financial notification (Second Presentment) | Process normally.<br>(Optionally match to a financial notification (MTID=06pp, Txn_Type='P') or Chargeback (MTID=1240, Txn_Type='H' / 'C') |
| 07pp<br>(p = space) | N | Financial notification (Second Presentment) | Process normally.<br>(Optionally match to a financial notification (MTID=07pp, Txn_Type='P') or Chargeback (MTID=1240, Txn_Type='H' / 'C') |
| 05pp<br>(p = space) | P | Financial notification of a purchase (from Visa) | Match to the original authorisation request (MTID=0100, Txn_Type='A') and process accordingly. Note that not all financial notifications will have a matching authorisation. |
| 06pp<br>(p = space) | P | Financial notification of a Refund/Credit-to-cardholder (from Visa) | Match to Auth request (MTID=0100, Txn_Type='A') and process accordingly.<br>Note that not all Financial Notifications will have a matching Authorisation. |
| 07pp<br>(p = space) | P | Financial notification of a cash withdrawal/disbursement (from Visa) | Match to Auth request (MTID=0100, Txn_Type='A') and process accordingly.<br>Note that not all Financial Notifications will have a matching Authorisation. |
| 25pp<br>(p = space) | E | Financial reversal of a purchase (from Visa) | Match to financial notification (MTID='05', Txn_Type='P' or Txn_Type='N') and process accordingly |
| 26pp | E | Financial reversal of a refund/credit-to-cardholder (from Visa) | Match to financial notification (MTID='06', Txn_Type='P' or Txn_Type='N') and process accordingly |

| MTID | Txn_ Type | Description | Action |
|---|---|---|---|
| (p = space) | | | |
| 27pp<br>(p = space) | E | Financial reversal of a cash withdrawal/disbursement (from Visa) | Match to financial notification (MTID='07', Txn_Type='P' or Txn_Type-='N') and process accordingly |
| - | L | Load | Process normally. |
| - | U | Unload | Process normally. |
| - | G | Payment | Process normally. |
| - | B | Balance Adjustment | Process normally. |
| - | Y | Card Expiry | Process normally. |
| - | P | Fee | Process normally<br>Amounts are in the Fee fields (Bill_Amt will be zero) |

# Incremental Authorisations

Visa and Mastercard allow certain merchants – such as hotels, car rental companies and cruise liners – to obtain an estimated initial authorisation when the final amount of the purchase is unknown and to request incremental funds if needed.

Incremental authorisations can match using the traceid_lifecycle value, and each incremental authorisation will have a different txn_ID.

Under normal circumstances we expect, in the same life cycle:

*Final presentment transaction amount = SUM(all approved transaction amounts) - SUM(all reversed transaction amounts)*

### Example 1

The following scenario illustrates how incremental authorisations work:

- Assume starting blocked amount is zero
  a. First Authorisation: £20 - blocked amount now £20
  b. Incremental Authorisation: £30 - blocked amount now £50
  c. Partial Reversal: £40 - blocked amount now £10
  d. Presentment would be for £10

Note that there is no guarantee the above sums will always add up:

- In all cases, on receipt of the presentment you should unblock the amount that was blocked
- the final presentment amount may be less than expected
- the final presentment amount may be more than expected

Incremental authorisations would have:

- Same GPS token
- Same currency
- Different txn_ID
- Same traceid_lifecycle

You can decline any of the incremental authorisations (or all).

# Exception Transactions

Some transactions may have slightly different rules than expected. This is normally due to waivers granted by the card scheme to permit this.

Below are some examples that GPS are aware of. For more information on any of the below, or to see if there are any other situations, please contact your Issuer.

## Transport for London (United Kingdom of GB and NI) Merchant Transactions

Transport for London (TfL) (Londons Public Transport network) have various waivers on authorisation requirements, in order to permit more offline transactions and for amounts larger than usually permitted, after a single approved authorisation request.

### Example 2

The following example is from Mastercard:

(All of the below have the same traceid_lifecycle)

- MTID=0100 authorisation for GBP 6.60, which was approved
- MTID=1240 presentment for GBP 6.60
- MTID=1240 presentment for GBP 5.80
- MTID=1240 presentment for GBP 5.30

**Note:** Rules differ for UK and non-UK BIN ranges. Check with your Issuer for the latest network rules.

## Other merchants

There may be other examples of merchants with waivers to the normal process.

Contact your Issuer or the network for more information.

[1] Visa/Mastercard do not verify whether acquirer information matches, so data from the acquirer may be inaccurate.

# 2.3 Data Types

This section describes the data types used in both GetTransaction Messages and Cut_Off WSDL messages.

| Data Type | Minimum Length | Maximum Length | Description | Examples |
|---|---|---|---|---|
| N(min,max) | min | max | Numeric digits only (‘0’ to ‘9’.)<br>Variable length of at least minimum digits up to a maximum of max digits. | N(1,11) could contain any of:<br>1<br>0001<br>12345678901<br>N(3,3) could contain:<br>123<br>467<br>009<br>010 |
| A(min,max) | min | max | Alpha characters: ‘a’-‘z’, ‘A’-Z’ only.<br>Variable length of at least minimum characters up to a maximum of max characters. | A(1,11) could contain any of:<br>a<br>azBC<br>FFeRRtsD<br>A(3,3) could contain:<br>Abc<br>GBX<br>NzA<br>zzA |
| HEX(min,max) | min | max | Hexadecimal digits only, where letters are in upper case only.<br>i.e ‘0’ to ‘9’ and ‘A’-‘F’.<br>Note that ‘A’-‘F’ will only be in upper case.<br>Lower case ‘a’-‘f’ are not permitted.<br><br>Variable length of at least minimum hexdigits up to a maximum of max hexdigits | HEX(1,11) could contain any of:<br>1<br>ABF34AD2<br>0001<br>ABC45678901<br><br>HEX(3,3) could contain:<br>000<br>FFF<br>01A |
| AN(min,max) | min | max | Alpha-Numeric characters only (‘0’ to ‘9’, ‘a’-‘z’ and ‘A’-‘Z’)<br>Variable length of at least minimum characters up to a maximum of max characters | AN(1,11) could contain any of:<br>1<br>Abf34ZaD2<br>0001<br>ABC45678901<br><br>Decimal(3,3) could contain:<br>123<br>467<br>009<br>010 |
| ANP(min,max) | min | max | Alpha-numeric and Pad (space) characters only.<br>i.e.’ ‘ (Space), ‘a’-‘z’, ‘A’-‘Z’, ‘0’-‘9’.<br>Variable length of at least minimum characters up to a maximum of max characters | ANS(1,11) could contain any of:<br>A<br>0001<br>A B 00 5D |
| ANS(min,max) | min | max | Alpha-numeric and special characters.<br>Variable length of at least minimum characters up to a maximum of max characters | ANS(1,11) could contain any of:<br>A<br>0001<br>A B $ % & * |
| AmountUnsigned (a,f) | 3 | a+1+f | Numeric unsigned amount field, as a real number with ‘.’ as decimal separator.<br>It cannot be negative.<br>(e.g. 123.45)<br>Where:<br>a = maximum number of digits before decimal point<br>f = maximum number of digits after decimal point | AmountUnsigned(5,3) field could contain:<br><br>12345.678<br>99999.999<br>1.001<br>1.0<br>6.72 |
| AmountSigned(a,f) | 3 | 1+a+1+f | Numeric signed amount field, as a real number with optional leading ‘-‘ (negative sign), with ‘.’ as decimal separator.<br>(e.g. -123.45 or 0.090)<br>Where:<br>‘-‘ = optional leading negative sign (ASCII code 45)<br>a = maximum number of digits before decimal point<br>‘.’ = decimal point (ASCII code 46)<br>f = maximum number of digits after decimal point | AmountSigned(5,3) field could contain:<br><br>12345.678<br>-99999.999<br>-1.001<br>1.0<br>-6.72 |
| Datetime (Y_to_ nnn) | 23 | 23 | Date time field, Year (y) to millisecond (nnn).<br>Format “YYYY-MM-DD hh:mm:ss.nnn”<br>Where:<br>YYYY = 4 digit year 0001-9999<br>‘-‘ = literal ‘-‘ character (ASCII 0x2D) | Examples:<br>2099-12-31 23:59:59.999<br><br>1872-01-01 00:00:00.000 |

| Data Type | Minimum Length | Maximum Length | Description | Examples |
|---|---|---|---|---|
| | | | MM = Month of year, 01 – 12<br>'-' = literal '-' character (ASCII 0x2D)<br>DD = Day of month, 01-31<br>' ' = literal space character (ASCII 0x20)<br>hh = hour, 00 – 23<br>':' = literal colon character (ASCII 0x3A)<br>mm = minute of hour, 00 – 59<br>':' = literal colon character (ASCII 0x3A)<br>ss = second, 00-59<br>'.' = literal decimal point (ASCII 0x2E)<br>nnn = milliseconds, 000- 999 | |
| Datetime(Y_to_ss) | 19 | 19 | Date time field, Year (Y) to second (ss).<br>Format "YYYY-MM-DD hh:mm:ss"<br>Where:<br>YYYY = 4 digit year 0001-9999<br>'-' = literal '-' character (ASCII 0x2D)<br>MM = Month of year, 01 – 12<br>'-' = literal '-' character (ASCII 0x2D)<br>DD = Day of month, 01-31<br>' ' = literal space character (ASCII 0x20)<br>hh = hour, 00 – 23<br>':' = literal colon character (ASCII 0x3A)<br>mm = minute of hour, 00 – 59<br>':' = literal colon character (ASCII 0x3A)<br>ss = second, 00-59 | 2099-12-31 23:59:59<br><br>1872-01-01 00:00:00 |
| Datetime(Y_to_D) | 10 | 10 | Date time field, Year (y) to day (d).<br>Format "YYYY-MM-DD"<br>Where:<br>YYYY = 4 digit year 0001-9999<br>'-' = literal '-' character (ASCII 0x2D)<br>MM = Month of year, 01 – 12<br>'-' = literal '-' character (ASCII 0x2D)<br>DD = Day of month, 01-31 | 1999-12-31 |
| DatetimeRaw(Y_to_D) | 10 | 10 | As Datetime(Y_to_D) but any of YYYY, MM or DD might contain invalid characters, such as space, letters or other.<br>If YYYY is generated by GPS, it will be set to '0000' if the month/day information it is based on do not represent a valid date. | 1999-12-31<br>0000-00-00<br>0000-x#-99<br>0000-pp-pp (where p indicates a space character) |
| Traceid | 15 | 40 | GPS 'traceid' format:<br>"nnnn-YYYYMMDD-i"<br>Where:<br>nnnn = 4 character network id, identifying the originating network: ('BNET' = Mastercard Banknet, 'VIS1' = Visa Base 1)<br>'-' = literal minus sign<br>YYYYMMDD = network trace date (YYYY=year), (MM=month of year, 01 to 12), (DD=day of month, 01 to 31)<br>'-' = literal minus sign<br>i = network reference (alphanumeric, 1 to 26) | BNET-19991231-MCC1234XY<br>VIS1-19991231-489365567890123 |
| TraceidRaw | 15 | 40 | As Traceid, except that the raw information received from the network will be passed as-is, without validation.<br>As a result of passing the raw information:<br>- the date YYYYMMDD inside it might contain invalid characters such as spaces, or might be an invalid date such as '00000000'.<br>- the network reference 'i' inside it might be invalid in whole or in part, including containing spaces.<br>If YYYY is generated by GPS based on MMDD from the network, YYYY will be set to '0000' if MMDD is not a valid date.)<br>If YYYYMMDD is generated by GPS based on YDDD (last digit of year and day-of-year) from the network, YYYYMMDD will be set to '00000000' if YDDD was not a valid date. | BNET-20191231-MCC999999<br>BNET-0000pppp-000000000 (where p is the space character)<br>VIS1-00000000-000000000000000 |
| Rate | 5 | 50 | A conversion rate consisting of 2 parts separated by ':' (colon.)<br>The RateDigits are provided separately so it is clear exactly how many significant figures are in the rate value.<br>Format:<br>RateDigits:DecimalPointOffset | 000001:12<br>1234567:0<br>1234567:1<br>1234567:2<br>1234567:03<br>1234567:6<br>1234567:7<br>1234567:8 |

<table>
<tr><th>Data Type</th><th>Minimum Length</th><th>Maximum Length</th><th>Description</th><th>Examples</th></tr>
<tr><td></td><td></td><td></td><td>Format of each part:<br>RateDigits = N(1,10) format<br>DecimalPointOffset = N(1,2) format (values from 0 to 12 only currently). Note: in future, DecimalPointOffset may be negative.<br><br>Meaning of each part:<br>The rate value = RateDigits / 10DecimalPointOffet<br>Examples:<br><table><tr><th>Rate</th><th>Decimal value</th></tr><tr><td>1234567:03</td><td>1234.567</td></tr><tr><td>123456:0</td><td>123456</td></tr><tr><td>1234567:12</td><td>0.000001234567</td></tr></table></td><td>123456:09<br>1234567:12<br>0:0<br>1:0<br>1000000:6</td></tr>
<tr><td>TLV10</td><td>14</td><td>999</td><td>A concatenation of many sets of the following:<br><table><tr><th>Type</th><th>Format</th></tr><tr><td>Tag</td><td>AN(10,10)</td></tr><tr><td>Length</td><td>N(4,4)</td></tr><tr><td>Value</td><td>ANS(length,length)</td></tr></table>Where:<br>Tag = 10 character identifier. For tag meanings, see field definition.<br>Length = Length of the Value field (number of UTF-8 characters) as 4 decimal digits with leading zeros.<br>Value = Value (‘Length’ characters long.) Usage of non ASCII-7-bit characters will be kept to a minimum.<br>Notes:<br>Tags are not in any particular order. Tags may repeat if stated in field description.<br>Tags might not all be defined in the specification - ignore any you do not recognise.<br>Value will only contain printable characters (no binary data.)</td><td>M1234567890001XM2222222220002YYTTTTTTTTTT0003abc<br>(the above means there are 3 items as follows:<br>Tag: “M123456789”<br>Value “X”<br>Tag: “M222222222”<br>Value: “YY”<br>Tag: “TTTTTTTTTT”<br>Value: “abc”)</td></tr>
</table>

**Note:** An empty field is permitted when usage is ‘Optional’ even though the Data Type does not permit an empty value (min length = 0.)

# 2.4 GetTransaction Message Fields

This section describes the fields included in the GetTransaction message. To view a copy of the GetMessages WSDL and message examples for different types of transactions, see GetTransaction WSDL and Example Messages.

## Request Field Formats

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| Acquirer_id_DE32 | Acquiring Bank ID as assigned by the network. Note that the format differs depending on whether this is an Authorisation or a Financial type message:<br>For Authorisation messages:<br>• 2 digits length of Acquirer ID (01 to 09)<br>• Acquirer ID (possibly with leading zeros)<br>For Financial messages:<br>• 6 digit acquirer ID (possibly with leading zeros)<br>Examples:<br>Authorisation examples:<br>• "06123456" means: "06" = length of Acquirer ID. "123456" Acquirer ID.<br>• "0501234" means: "05"=length of acquirer ID. "01234" = acquirer ID.<br>Financial examples:<br>• "123456" (acquirer id = 123456)<br>• "00123" (acquirer id = 123) | N(3,15) | Mastercard Authorisation type:<br>06123456<br>Mastercard Financial type:<br>123456<br>VISA Authorisation type:<br>06454500<br>VISA Financial type:<br>10000398 |
| ActBal | Actual balance on the card after the transaction, in the card account currency:<br>• Positive indicates a credit balance.<br>• Negative indicates a debit balance. | AmountSigned(9,2) | -250.00 |
| Additional_Amt_DE54 | DE 54 (Additional Amounts) provides information on up to two amount types and related account data. See Additional Amounts Fields. | AN(20,120) | 0400044826D000000004683 0000044826D000000004683 |
| Amt_Tran_Fee_DE28 | DE 28 (Amount, Transaction Fee) is the fee charged (for example, by the acquirer) for transaction activity in the transaction currency code. The format differs between Authorisation and Financial messages, as follows:<br>• Authorisation message format: D= debit issuer or C = credit issuer; 8 digit fee amount in the minor units of currency held in the field Txn_CCy.<br>• Financial message format: Number in the major units of currency held in the field Txn_CCy, with decimal places. | Authorisation: AN(9,9)<br>Financial: AmountUnsigned (9,2) | For Authorisation:<br>D00000500<br>For Financial:<br>0.00 |
| Auth_Code_DE38 | Authorisation code generated by GPS or client for approved authorisation requests. | ANP(1,6) | 675093 |
| Avl_Bal | Available balance on the card after the transaction, in the currency of Bill_Ccy field (card account currency). Negative indicates the account is in debit. | AmountSigned(9,2) | -60.76 |
| Bill_Amt | Settlement billing amount of the transaction in Bill_Ccy currency.<br>Positive indicates the cardholder account is to be credited (e.g. used for Refunds). Negative means that cardholder account is to be debited (e.g. used for Purchase transactions). For usage in transactions, see Examples of Amount Signs.<br>**Note**: This excludes the GPS calculated fees (Fee_Fixed and Fee_Rate) and Padding (Fx_Pad and MCC_ | AmountSigned(9,2) | -189.24 |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | Pad). Financial Transactions do not have padding. | | |
| Bill_Ccy | ISO 3-digit numeric currency of the billing amount. See Currency Codes. | N(3,3) | 978 |
| BlkAmt | Total amount blocked on card after this transaction, in the card's account currency (Bill_Ccy field). Normally zero (if no blocked amount on the card) or negative. For example:<br>• If BlkAmt = 0.00 the total amount blocked on this card for all outstanding transactions is 0.00.<br>• If BlkAmt = -24.01 the total amount blocked on this card for all outstanding transactions is 24.01 in the Bill_Ccy currency. | AmountSigned(9,2) | -134.65 |
| Cust_Ref | Customer account reference. | ANS(1,25) | 4566DXF<br>Imperial Majesty |
| FX_Pad | Foreign Currency (FX) padding applied for the transaction in the card's account currency (Bill_Ccy field). | AmountUnsigned (9,2) | 0.00 |
| Fee_Fixed | The total fixed fee amount which is the sum of all fixed fees calculated by GPS (based on your GPS Fee Group configuration). This is applied for the transaction in the card's account currency (Bill_Ccy field).Normally zero or positive. | AmountSigned(9,2) | 0.00 |
| Fee_Rate | Fee Amount due to summation of all percentage rate fees calculated by GPS applied to the transaction. Normally zero or positive. Corresponds to your fee setup on the GPS system. | AmountSigned(9,2) | 0.00 |
| LoadSRC | The source of the load request. See Load Source.<br>Present only for Txn_Type values of:<br>L= Load; U = Unload; G = Payment | N(1,4) | 14 |
| LoadType | Payment method of funds for the load. See section Load Types for valid values. Present only for Txn_Type values of:<br>L= Load; U = Unload; G = Payment | N(1,1) | 0 |
| MCC_Code | The classification (card acceptor business code or merchant category code) of the merchant's type of business or service. See Merchant Category Codes. | N(1,4) | 5411 |
| MCC_Desc | The classification (card acceptor business code or merchant category code) of the merchant's type of business or service. | ANS(0,250) | Grocery Stores, Supermarkets |
| MCC_Pad | Merchant category code (MCC) padding applied for the transaction in the card's account currency (Bill_Ccy field). | AmountUnsigned (9,2) | 0.00 |
| Merch_ID_DE42 | Identifies the card acceptor that defines the point of the transaction in both local and interchange environments. This is always provided for POS transactions and is optional for ATM transactions. | ANS(1,15) | Mastercard Authorisation: 51569373<br>Mastercard presentment: 82040424200019 |
| | | | VISA Authorisation: 372181910889<br>VISA Presentment: 005438482900826 |
| Merch_Name_DE43 | Contains the name and location of the card acceptor that defines the point of interaction in both local and interchange environments (excluding ATM and card-activated public phones).<br>**Note**: This field is depreciated in EHI version 3.0. Use the following fields instead: Merch_Name, Merch_Street, Merch_City, Merch_Region, Merch_Postcode, Merch_Country.<br>The format differs depending on whether an Authorisation or Financial message. For details, see Authorisation Field (DE43). | ANS(1,101) | Mastercard Authorisation:<br>Golff Harmelen HARMELEN NLD |
| | | | FOR VISA :<br>TONY ROMA'S CARACAS VE |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| Note | Note for the particular transaction. Notes are taken from transaction details appended during each type of transactions. For declined transactions, this might occasionally have text explaining why it was declined. | ANS(0,500) | Declined due to incorrect PIN. |
| POS_Data_DE22 | Point of Sale (POS) data field, indicating the PAN entry method and the capability of the terminal to accept a PIN.<br>**Note**: This field is depreciated in EHI version 3.0. Use the following fields instead: GPS_POS_Capability, GPS_POS_Data.<br>Format and content differs per message type as follows:<br>For Visa and Mastercard Authorisation messages:<br>• This holds the PAN entry method and PIN capture capability. See POS_Data_DE22 in Authorisation Messages<br>• For the extra POS methods and capabilities, see field POS_Data_DE61 instead<br>For Mastercard Financial messages: this holds all the POS methods and capabilities. See POS_Data_DE22 in Mastercard Financial Messages.<br>For Visa Financial messages: this is empty. | Authorisation messages:<br>N(3,4)<br><br>Financial messages:<br>AN(12,12) | Mastercard Authorisation messages: 071<br>Visa Authorisation messages: 0710<br>Mastercard Financial messages: C11101299001<br>Visa Financial messages: (empty) |
| POS_Data_DE61 | **Note**: this field is depreciated in EHI version 3.0. Use the following fields instead: GPS_POS_Capability and GPS_POS_Data.<br>For Mastercard Authorisation related messages: This holds additional POS condition codes. See POS_Data_DE61 Values<br>For Visa Authorisation related messages: this is empty.<br>For Financial and all other messages: this is empty. | ANP(9,39) | For Mastercard Authorisation messages:<br>1025100006600442L2338<br>For VISA Authorisation messages: (empty)<br>For All Financial messages: (empty) |
| POS_Termnl_DE41 | Uniquely identifies a terminal which accepted the card. Always present if the card data was read electronically read by a terminal (i.e. field POS_Data_DE22 first two digits are any of: 02,03,04,05,06,07,08,80,90,91,92,95.)<br>Otherwise may be omitted. | ANS(1,8) | 1NDR01 |
| POS_Time_DE12 | This is the local time or date/time at which the transaction takes place at the point of card acceptor location. It is in the time zone of the card acceptor's location.<br>The format varies depending on the message type as follows:<br>For Authorisation messages (Transaction Type - Authorisation), the format is: "hhmmss" (hh=hour 00-23, mm=minute 00-59, ss=second 00-59.)<br>**Note**: for Visa Authorisations, the time is optional, so this field may be blank.<br>For Financial messages (Transaction Type - Financial, including dummy offline authorisations), the format is: "YYMMDDhhmmss" (YY=last 2 digits of year, MM=month 01-12, DD=day of month 01-31, hh=hour 00-23, mm=minute 00-59, ss=second 00-59.)<br>**Note**: For Visa Financial format, the time is often "000000", so often only the YYMMDD will have a meaningful value. | If Auth:<br>N(6,6) or blank<br><br>If Financial (inc. dummy auth):<br>N(12,12) | If Auth:<br>141642<br><br>Empty-field<br><br>If Financial:<br>991231141642<br><br>191129000000 |
| Proc_Code | Processing code for the transaction. See Processing Codes. | N(6,6) | 090000 |
| Resp_Code_DE39 | Defines the status of a previous message or an action taken as a result of receipt of a previous message. Response codes also are used to indicate approval or | AN(2,2) | 00 |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | decline of a transaction. See Response Codes. | | |
| Ret_Ref_No_DE37 | Document reference number supplied by the system retaining the original source document of the transaction and assists in locating that source document or a copy thereof. | ANP(1,12) | 673001106898 |
| Settle_Amt | Settlement amount in settlement currency, as received from the Network. Value varies per Transaction Types as follows:<br><br>MTID/Txn_Type combinations listed in the section Transaction Type - Authorisation (auths, auth reversals):<br>• the amount is always positive<br>• The amount is the network converting the transaction amount into the settlement currency, and is not the net settlement amount<br><br>MTID and Txn_Type combinations listed in the section Transaction Type - Financial (real financials and their reversals, dummy Auths):<br>• The amount will have the same sign as the Bill_Amt field: +ve if the card is credited and -ve if debited.<br>• This amount will not include interchange or issuer fees - it is simply the transaction amount converted into the settlement currency by the network, then the sign adjusted as the above point. It is not the net settlement amount.<br>For usage in transactions, see Examples of Amount Signs. | AmountSigned(9,2) | Authorisation:<br>67.01<br><br>Financials:<br>-189.24<br>89.24 |
| Settle_Ccy | Settlement currency. ISO 3-digit numeric. See Currency Codes. | N(3,3) | 978 |
| Status_Code | Current status code of the card on the GPS system. See Transaction Status Codes. | AN(2,2) | 00 |
| Token | Token of the card. Maximum value is 2^63-1. | N(1,19) | 231152625 |
| Trans_link | Link ID to which the transaction is linked. The format varies depending on the length of the number:<br><br>17 or 18 digit format:<br>yymmdd+STAN+AID where:<br>• yymmdd is date that GPS received the authorisation<br>• STAN is the 6 digit system trace audit number received from the Network<br>• AID is from DE 32 (AIID) as 6 digit value with leading zeros.<br>(Note the AID is the AID value (no length digits) with leading zeros.)<br><br>For example, if the Authorisation field Acquirer_id_DE32=06001234, then the AID used here would be "001234".)<br><br>17 or 18 digit format (offline cleared transactions only):<br>yymmddMSSXXX+AID where:<br>- yymmddMSSXXX is date that GPS processed the offline clearing transaction, where:<br>• yy = year (least significant digits) 00-99<br>• mm=month 01-12<br>• dd=day 01-31<br>• M = least significant minute digit 0-9<br>• SS=seconds 00-59<br>• XXX=milliseconds 000-999 | N(13,27) | 151231225367089085 |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | • AID = Aquirer ID received from network (optional for GCMS)<br>19 digits, (and first digit is '1') format (new format for offline cleared txns only):<br>'1' + yymmdd + 6 digit locator + Acquirer BIN<br>Where:<br>'1' - indicator of offline transaction Trans_link format<br>yymmdd - acquirer process date from ARN<br>6 digit locator - last 6 digits of ARN<br>6 digit acquirer BIN - acquiring BIN/id from ARN<br>Notes:<br>• ARN is Acquirer Reference Number received in clearing message, itself is unique.<br>• Implementation date of this 19-digit format is to-be-confirmed. | | |
| Txn_Amt | Transaction amount, in the transaction currency (see Txn_CCy field). Always zero or positive. To identify whether this is a credit or debit, check the Proc_Code field. For usage in transactions, see Examples of Amount Signs. | AmountUnsigned (19,4) | 189.2400 |
| Txn_CCy | Currency in which transaction occurred. ISO 3-digit currency code. See Currency Codes. | N(3,3) | 978 |
| Txn_Ctry | Country code for the transaction. ISO 3-alpha country code. Upper case characters only.See Country Codes. | A(3,3) | NLD |
| Txn_Desc | Description of the transaction. | ANS(1,800) | Golff Harmelen HARMELEN NLD |
| Txn_GPS_Date | Date in which transaction occurred. It is 'GMT' in winter and 'GMT +1' in summer (BST stands for British Summer Time). Format:<br>*YYYY-MM-DD hh:mm:ss.nnn*<br>Where there is 1 space between the date and time fields, and nnn is the milliseconds.<br>For TransactionType = A and MTID = 0100, this date is the GB local time at the point just before GPS send the transaction to EHI. | Datetime (Y_to_nnn) | 2015-11-05 13:11:30.910 |
| TXn_ID | Unique ID for the transaction generated by GPS side. This should be used for duplicate checking. Maximum number will be 263-1. | N(1,19) | 51075303 |
| Txn_Stat_Code | Transaction status code for the transaction. See Transaction Status Codes. | AN(1,1) | A |
| TXN_Time_DE07 | Transmission Date and Time, in GMT (UTC) timezone. Date and time message was sent by the acquirer to MasterCard/Visa Network. Format:<br>*MMDDhhmmss*<br>Where:<br>MM = Month of year 01-12<br>DD = Day of month 01-31<br>hh = hour of day 00-23<br>mm = minute of hour 00-59<br>ss = second 00-59 | N(10,10) | 0302131642 |
| Txn_Type | Transaction type description for the transaction. See Transaction Types. | AN(1,1) | A |
| Additional_Data_DE48 | Network Additional data DE48 field. Contact GPS if there is any specific piece of information you need from here.<br>Ignore unless mutually agreed with GPS to extract certain data. | ANS(1,5000) | For Mastercard Authorisation messages:<br>034T8202529203385420701032106105000000<br>For Mastercard Financial messages:<br>0002003MRG0003003MRG0023003NA<br>0146036002901840000000000023384<br>0000000000233014800878428402<br>0158029MCC47840013412100304 NNNNN<br>For VISA Authorisation message:<br>0B5CF0F0F1F9F7F2F1F4F2F0 |
| Authorised_by_GPS | To identify whether authorised by GPS or not for Stand-In enabled products:<br>Y = GPS can stand-in to authorise transaction in | A(1,1) | Y |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | agreed circumstances.<br>N = no stand-in authorisation | | |
| AVS_Result | The result of AVS checking. See AVS Results. | AN(1,1) | N |
| CU_Group | Group code assigned for usage checking. | ANS(1,10) | AER-CU-001 |
| InstCode | GPS Issuer (Program Manager) Code. Assigned by GPS. | ANS(1,4) | TMS |
| MTID | The Message Type Identifier (MTI) describes the type of message being interpreted.<br>0100 = Authorisation Request<br>0400 = Reversal Request<br>0420 = Reversal Advice<br>1240 = Financial Notification (also used for Chargeback Notification too - check TransactionType to tell the difference) from Mastercard<br>'05 ' (05 with 2 spaces) = Financial Notification (Purchase from Visa)<br>'06 ' (06 with 2 spaces) = Financial Notification (Credit from Visa)<br>'07 ' (07 with 2 spaces) = Financial Notification (Cash from Visa)<br>'25 ' (25 with 2 spaces) = Financial Reversal (of a Purchase from Visa)<br>'26 ' (26 with 2 spaces) = Financial Reversal (of a Credit from Visa)<br>'27 ' (27 with 2 spaces) = Financial Reversal (of Cash from Visa)<br>For a full list, see Transaction Matching Criteria. | ANP(1,4) | For Mastercard Authorisation: 0100<br>For Mastercard presentment: 1240<br>For VISA Authorisation: 0100<br>For VISA presentment: '05 '<br>'06 '<br>'07 ' |
| ProductID | This value is the Product ID of the card. The Product ID is generated during product setup. For details, check with your Implementation Manager. | N(1,5) | 1504 |
| Record_Data_DE120 | This field is Mastercard-specific. DE 120 (Record Data) is a variable-length data element used for transmitting file record data or textual character string data in various message types. | ANS(1,1000) | For Mastercard: 018041414<br>For VISA : (empty) |
| SubBIN | The sub BIN value assigned to the product. | N(1,11) | 675926 |
| TLogIDOrg | ID of original transaction for reversals. Maximum value will be $263^{-1}$. | N(1,19) | 0 |
| VL_Group | Group code assigned for velocity checking. | ANS(1,10) | AVU-VL-005 |
| Dom_Fee_Fixed | Domestic fixed fee amount applied to transaction by GPS, in the card account currency. It is part of the Fixed_Fee.<br>Domestic is defined as: Txn_CCy = Bill_Ccy<br>Corresponds to your fee setup on the GPS system. | AmountSigned(9,2) | 0.00 |
| Non_Dom_Fee_Fixed | Non-domestic fixed fee amount applied t othe transaction by GPS, in the card account currency. It is part of Fixed_Fee.<br>Non-Domestic is defined as: Txn_CCy ≠ Bill_Ccy<br>Corresponds to your fee setup on the GPS system. | AmountSigned(9,2) | 0.00 |
| Fx_Fee_Fixed | Fixed foreign exchange fee amount applied by GPS to the transaction, in the card account currency. It is part of Fixed_Fee. Corresponds to your fee setup on the GPS system.<br>For example, if:<br>• the "Fx Fixed" was "1.20" (i.e. 1.20 in billing currency) in the Smart Client configuration relevant for this transaction<br>• Bill_Amt=10.00<br>• Txn_CCy = 840<br>• Bill_Ccy = 826 | AmountSigned(9,2) | 0.00 |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | • Foreign exchange occurred (as Txn_Ccy ≠ Bill_Ccy)<br>then Fx_Fee_Fixed Amount = 1.20 (in account currency) | | |
| Other_Fee_Amt | Other fees applied. It is part of Fixed_Fee. | AmountSigned(9,2) | 0.00 |
| Fx_Fee_Rate | Fee Amount calculated by GPS as part of the transaction, due to "Fx Rate" fee setting. It is part of Fixed_Fee.<br>Corresponds to your fee setup on the GPS system.<br>For example, if:<br>• the "Fx Rate" was "1.20" (i.e. 1.20%) in the Smart Client configuration relevant for this transaction<br>• Bill_Amt=10.00<br>• Txn_CCy = 985<br>• Bill_Ccy = 840<br>• Foreign exchange occurred (as Txn_CCy ≠ Bill_Ccy)<br>then Fx_Fee_Rate Amount = 10.00*0.0120 = 0.12 (in account currency) | AmountSigned(9,2) | 0.00 |
| Dom_Fee_Rate | Fee Amount calculated by GPS as part of the transaction, due to "Dom Fee Rate" fee setting, in the card account currency. It is part of Fixed_Fee.<br>Domestic is defined as: Txn_CCy = Bill_Ccy<br>Corresponds to your fee setup on the GPS system.<br>For example, if:<br>• The "Dom Fee Rate" setting in Smart Client was "1.75"<br>• Bill_Amt = 32.00<br>• Txn_CCy = 978<br>• Bill_Ccy = 978<br>• Transaction is Domestic (as Txn_CCy = Bill_Ccy)<br>Then Fee Amount due to "Dom Fee Rate" = 32.00 * 0.0175 = 0.56 (in account currency.) | AmountSigned(9,2) | 0.00 |
| Non_Dom_Fee_Rate | Fee Amount calculated by GPS, due to Non domestic rate fee setting, in the card account currency. It is part of Fee_Rate.<br>Non-Domestic is defined as: Txn_CCy ≠ Bill_Ccy<br>Corresponds to your fee setup on the GPS system.<br>For example, if:<br>• The "Non Dom Fee Rate" setting in Smart Client was "2.00" (i.e. 2%)<br>• Bill_Amt = 64.00<br>• Txn_CCy = 840<br>• Bill_Ccy = 826<br>• Transaction is non-domestic (as Txn_CCy ≠ Bill_Ccy)<br>Then Fee Amount due to "Non Dom Fee Rate" = 64.00 * 0.0200 = 1.28 (in account currency.) | AmountSigned(9,2) | 0.00 |
| Additional_Data_DE124 | This field is Mastercard- specific. DE 124 is used only for MasterCard Money Send transactions. | ANS(1,200) | For Mastercard: 19900064345324080218O1MC MONEY SEND ST SOVETSKAYA 58<br>For VISA : (empty) |
| CVV2 | Cardholder Verification Value 2. This will only be present if configured for the customer. Format of this if present will be:<br>If 3 characters long: 3 digit CVV2 value<br>If 6 characters long:<br>Position 1 (CVV2 presence indicator) | N(3,6) | Mastercard:<br>123<br>Visa:<br>11 123 |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | Position 2 (CVV2 Response Type indicator)Position 3 (Space)<br>Positions 4-6 ( CVV2 Value)<br>(Currently GPS will always send the 3-digit CVV2 values for Mastercard. For Visa we currently send the 6-character version, but in future may change this to the 3 character version to align with Mastercard.) | | |
| Expiry_Date | Card or Token expiry date as received in transaction.<br>Format: *YYMM*<br>This will only be present if configured for by the Program Manager. | N(4,4) | 2912 |
| PAN_Sequence_Number | PAN sequence number. Only present if sent by the acquirer. | N(1,2) | 8 |
| PIN | PIN block of format PIN_Format (see PIN Block Formats) encrypted under the EHI PIN Key of index = PIN_Key_Index using algorithm PIN_Enc_Algorithm.<br>Present only if Online PIN message and customer is configured to receive it. If this field is present, then these fields will also be present:<br>• PIN_Key_Index<br>• PIN_Format<br>• PIN_Enc_Algorithm | HEX(32,32) | B7A85096C4C5EE23 |
| PIN_Enc_Algorithm | PIN block encryption algorithm.<br>Describes the encryption algorithm used to encrypt the PIN in PIN field.<br>Values:<br>3DES = Triple DES using ECB, using a triple length DES key.<br>Other values may be added in future versions.<br>(This field is always present if PIN field is present) | AN(1,16) | 3DES |
| PIN_Format | PIN Block format. This describes the format of the PIN block used as clear text before encryption to create the PIN field. PIN Block formats:<br>0 = ISO9564-1 Format 0<br>1 = ISO9564-1 Format 1<br>2 = ISO9564-1 Format 2<br>3 = ISO9564-1 Format 3<br>Currently only value '1' (implying ISO9564-1 Format 1) is supported. This is because it is the only PIN block format that varies for the same PIN and does not require a PAN.<br>(This field is always present if the PIN field is present) | N(1,4) | 1 |
| PIN_Key_Index | Index of the PIN Key used to encrypt the PIN field.<br>(This field is always present if the PIN field is present) | N(1,4) | 2 |
| SendingAttemptCount | Indicates the number of times GPS has repeated this message:<br>0 = not repeated (1st transmit)<br>1 = repeated once (2nd transmit)<br>2 = repeated twice (3rd transmit)<br>…<br>n = repeated n times ((n+1) transmit) | N(1,4) | 2 |
| source_bank_ctry | **Note**: This is Mastercard-specific.<br>Source Bank Country code as ISO 3-alpha uppercase.<br>See Country Codes. | A(3,3) | For Mastercard: GBR<br>For VISA : (empty) |
| source_bank_account_format | Format of the bank account number in source_bank_account field.<br>See Bank Account Format. | AN(1,8) | For Mastercard: GBR<br>For VISA : (empty) |
| source_bank_account | Source bank account number. In format specified by <source_bank_account_format> | ANP(1,34) | For Mastercard: 601608 39857710<br>For VISA : (empty) |
| dest_bank_ctry | Destination Bank Country code as ISO 3-alpha uppercase. See Country Codes. | A(3,3) | For Mastercard: GBR<br>For VISA : (empty) |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| dest_bank_account_format | Format of the bank account number in the dest_bank_account field.<br>See Bank Account Format. | AN(1,8) | For Mastercard: IBAN<br>For VISA : (empty) |
| dest_bank_account | Destination bank account number. In format specified by <dest_bank_account_format>. See Bank Account Format. | ANP(1,34) | For Mastercard: GB29NWBK60161331926819<br>For VISA : (empty) |
| GPS_POS_Capability | GPS defined POS Capability codes. Defines what the POS terminal capabilities are for this transaction. See GPS_POS_Capability. | AN(2,255) | 1100100100010000000000010010010100000000019234CR |
| GPS_POS_Data | GPS defined POS Data codes. Defines what happened at the POS terminal (e.g. card data input method). See GPS_POS_Data. | AN(1,255) | 0171000300002Nx000 |
| Acquirer_Reference_Data_031 | Acquirer Reference Number/Data. ISO 8583 field 31. The acquirer reference number exists for clearing messages only (Financial advices/notifications, and Chargeback advices/notifications (and reversals of)). If MTID=1240 and Txn_Type='A' (dummy auth created if no matching auth to the financial) - in this case there may or may not be Acquirer_Reference_Data_031 present.<br>It is created by the acquirer in the first financial presentment, according to the scheme rules. It will be the same value for all clearing messages in the entire lifecycle.<br>**Note**: values should be unique per card scheme within a 10-year time period. | N(23) | 74456126366123456789014 |
| Response_Source | Indicates which system sent the 0110 or 0210 response to the terminal. Normally present only for some Authorisation advices and Authorisation reversals.<br>See Response_Source and Message_Source values.<br>The field is ANS, but the special character is restricted to '_' (underscore) and '-' (minus sign), and special character will not begin the string. | ANS*(1,10)<br>Special char only '-' or '_' | VISA-STIP |
| Response_Source_Why | Indicates the reason why the <Response_Source> sent a response to the terminal. Normally present only for some Authorisation advices and Authorisation reversals. See Response_Source_Why and Message_Why values. | N(1,4) | 1 |
| Message_Source | Indicates which system sent this message. Normally present only for some Authorisation advices and Authorisation reversals.<br>See Response_Source and Message_Source values.<br>The field is ANS, but the special character is restricted to '_' (underscore) and '-' (minus sign), and special character will not begin the string. | ANS*(1,10)<br>Special char only '-' or '_' | MC-STIP |
| Message_Why | Indicates the reason why <Response_Source> sent a response to the terminal. Normally present only for some Authorisation advices and Authorisation reversals. See Response_Source_Why and Message_Why values. | N(1,4) | 18 |
| traceid_lifecycle | Lifecycle Trace ID. This consists of alphanumeric and '-' characters only. This is a value assigned to the lifecycle of the transaction, which is identical for all messages relating to the same transaction. For example, the following messages relating to the same transaction will all have the same Lifecycle Trace ID value: *Authorisation*, *Second incremental authorisation*, *authorisation reversal*, *Financial Presentment*, *Chargeback*, *Second Presentment* and *Second chargeback*. | ANS*(1,40)<br>* only special char is '-' (minus sign) | VIS1-20160608-086160508692217<br>BNET-20151231-MRG9001AB |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | If there is more than one authorisation for the same transaction, both authorisations will have the same value.<br>This is a reliable matching field and should be used for matching in the first instance if present.<br><br>**Note**: Do not hard-code logic based on the internal format of this field, as GPS may change the format at any time without notice.<br><br>**Note**: Will be present on most messages, but might not for some Authorisation Reversals (e.g. timeout reversals) and some Financial messages which were not authorised online (e.g. refunds, offline approved transactions). | | |
| Balance_Sequence | GPS balance sequence number. Incremented by 1 each time the actual_balance or blocked_amount of the card account changes on the GPS system.<br>Maximum value = (2^63)-1<br>This gives the external host an idea of how out-of-sync the GPS actual_balance and blocked_amount fields are compared to the external host.<br>This will always be present in any transaction where external host can respond with a Balance Update (Update_Balance=1 in response.) This happens only in online transactions sent to EHI as soon as GPS receives them (not for after-the-event transactions sent later to EHI via a queue mechanism at GPS, e.g., presentments.) | N(1,19)<br><br>Max value is 2^63-1 | 568474 |
| Balance_Sequence_Exthost | The external host balance sequence number received from the EHI response. See field 'New_Balance_Sequence_Exthost' in the section Response Field Formats.<br><br>Maximum value = (2^63)-1<br>Maintained by the External host.<br>This tells the external host how recent GPS's external balance is. A higher number indicates a more recent balance.<br>This field will always be present in any transaction where external host can respond with a Balance Update (Update_Balance=1 in response.)<br>This happens only in online transactions sent to EHI as soon as GPS receives them (not for after-the-event transactions sent later to EHI via a queue mechanism at GPS, e.g., presentments.) | N(1,19)<br><br>Max value is 2^63-1 | 450 |
| PaymentToken_id | Unique GPS ID of the payment token. Only present if transaction relates to a payment token (for example, Apple Pay). | N(1,10) | 12345 |
| PaymentToken_creator | Identifies which system created the payment token.Only present if the transaction relates to a payment token (for example, Apple Pay).<br>See Response_Source and Message_Source. | AN(1,10) | For Mastercard:<br>MC-MDES<br>For VISA :<br>VISA-T |
| PaymentToken_expdate | Expiry date of the payment token. Only present if the transaction relates to a payment token (for example, Apple Pay). Format *YYYY-MM-DD*<br>**Note**: In the case of a Token Replacement message (MTID='0100', Txn_Type='A', Proc_Code='360000', Message_Why=52) then this contains the *new* payment token expiry date. (The previous payment-token expiry date is currently not included.) | Datetime(Y_to_D) | 2099-12-31 |
| PaymentToken_type | The type of system the payment token is encoded onto (defines how the payment token PAN is held). Only present if the transaction relates to a payment token (for example, Apple Pay). See PaymentToken_type. | AN(1,10) | SE |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | **Note**: not to be confused with the device type (PaymentToken_deviceType). | | |
| PaymentToken_status | Current status of the payment token as set by GPS. Only present if transaction relates to a payment token (for example, Apple Pay). See Transaction Status Codes. | AN(1,2) | 00 |
| PaymentToken_creatorStatus | Current status of the payment token as set by the creator of the payment token. Only present if the transaction relates to a payment token (for example, Apple Pay). See PaymentToken_creatorStatus. | AN(1,1) | A |
| PaymentToken_wallet | Wallet that the payment token belongs to. Only present if the transaction relates to a payment token (for example, Apple Pay). See PaymentToken_wallet. | AN(1,10) | APPLE |
| PaymentToken_deviceType | Indicates the type of the device in which the payment token is held. Only present if the transaction relates to a payment token (for example, Apple Pay). See PaymentToken_deviceType. | AN(1,10) | X |
| PaymentToken_lang | The ISO 639-1 2 character alpha language code reported by the payment token device at digitisation time. Only present if the transaction relates to a payment token (for example, Apple Pay). For a list of ISO 639-1 language codes, see http://www.iso.org<br>**Note**: this may not be known, in which case the field will be empty. | A(0,2) | en |
| PaymentToken_deviceTelNum | The telephone number of the device on which the payment token is present, as reported by the creator at digitisation time. Only present if the transaction relates to a payment token (for example, Apple Pay).<br>**Note**: this may be empty, a full or partial number, and may be masked in various ways as the creator and/or wallet provider determines. | ANS(0,15) | 1 (656) 1234-3244 |
| PaymentToken_deviceIp | IPv4 address of the device on which the payment token is present, as reported by the creator at digitisation time. Only present if the transaction relates to a payment token (for example, Apple Pay).<br>May arrive in either of 2 formats:<br>Hex format: PPQQRRSS<br>Where:<br>• PP = 1st IP byte, as 2 hex digits (00 to FF)<br>• QQ=2nd IP byte, as 2 hex digits (00 to FF)<br>• RR=3rd IP byte, as 2 hex digits (00 to FF)<br>• SS=4th IP byte, as 2 hex digits (00 to FF)<br>Or decimal format: p.q.r.s<br>Where:<br>• p = 1st IP byte, in decimal (0 to 255)<br>• q = 2nd IP byte, in decimal (0 to 255)<br>• r = 3rd IP byte, in decimal (0 to 255)<br>• s = 4th IP byte, in decimal (0 to 255)<br>**Note**: each decimal number may be prefixed with 0, 1 or 2 leading zeros, up to a maximum of 3 decimal digits (eg byte “4” could be encoded as “4”, “04” or “004”. | ANS(1,15) | 255.255.255.255<br>FFFFFFFF<br>081.5.006.255<br>A17F001E |
| PaymentToken_deviceId | Payment token device ID as reported by the Wallet service provider.<br>Only present if the transaction relates to a payment token (for example, Apple Pay). | ANS(0,48) | ABCD<br>043B28DB7E478 |
| PaymentToken_ | Payment token device name as given by the device | ANS(0,20) | Cookie Monster Phone |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| deviceName | owner (i.e., cardholder).Only present if the transaction relates to a payment token (for example, Apple Pay). | | |
| PaymentToken_activationCode | Activation code that the cardholder must enter into the payment token holding device to complete Tokenisation. Only present if the first two characters of ProcCode="34" (payment token activation notification) | AN(1,8) | 987654 |
| PaymentToken_activationExpiry | The Date and Time in UTC (GMT) that the activation code in the field PaymentToken_activationCode expires. Only present if the first two characters of ProcCode="34" (payment token activation notification).<br>**Note**: milliseconds are present, but will always be zero. For Mastercard, seconds will always be zero. | Datetime(Y_to_nnn) | For Mastercard:<br>2019-12-31 23:59:00.000<br><br>For VISA :<br>2019-12-31 23:59:59.000 |
| PaymentToken_activationMethod | The method by which the cardholder should obtain the Activation Code (in the field PaymentToken_activationCode) which they must enter into the device holding the payment token in order to activate it. Only present if first two characters of ProcCode="34" (payment token activation notification). See PaymentToken_activationMethod. | N(1,4) | 3 |
| PaymentToken_activationMethodData | Data to indicate the value corresponding the selected PaymentToken_activationMethod. Only present if first two characters of ProcCode="34" (payment token activation notification). See PaymentToken_activationMethod. | ANS(1,255) | Siobhan@bananarama.co.uk |
| ICC_System_Related_Data_DE55 | EMV Chip data in TLV hex format:<br>• Hexadecimal digits (0-9 and A-F) where 2 hexadecimal digits represent 1 byte, where the encoded bytes mean:<br>• EMV TLV data as Tag, Length, Value bytes encoded as Basic Encoding Rules (BER) as described in EMV Book 4.3 Annex B "Rules for BER-TLV data objects"<br>• Note that alls tags sent from the acquirer will be present (even if not defined by EMV)<br>Example ( if sending tags 9F35 and 82)<br>9F35012282021980<br>For format of Tag, Length and Value: See EMV Book 4.3 (www.emvco.com) Annex B - "Rules for BER-TLV Data Objects"<br><br>For definitions of Tags, see the following:<br>EMV Book 4.3 Annex A - "Data Elements Dictionary"<br>EMV Book 4.3 Annex C - "Coding of Data Elements Used in Transaction Processing"<br>EMV Book 4.4 Annex A - "Coding of Terminal Data Elements"<br><br>For the definition of tag 9F10, and any tag in the range 9F50 - 9F7F inclusive, see the specification of the EMV chip card application that are used by the card. | HEX(0,512) | 9F35012282021980 |
| Merch_Name | Merchant (or ATM owner) name. Many sources limit the Merchant/ATM-owner name to between 22 to 25 characters. | ANS(0,40) | Bananarama Fan Club |
| Merch_Street | Merchant/ATM street address. Not always provided. | ANS(0,80) | Flat 2, 3-19 St. Pancras Road |
| Merch_City | Merchant/ATM city. Many sources limit the city name at 13 characters | ANS(0,40) | Newcastle Upo |
| Merch_Region | Merchant/ATM Region code. Defines a sub-region of a country. Usage varies per country. Not always provided.<br>If Merch_Country=USA, this will be a 2-alpha US state code (eg "AK" for Alaska). If Merch_Country=CAN (i.e. Canada) this will be a 2-alpha Canadian province code | ANS(0,3) | AK |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | (eg “QC” for Quebec).<br>Other countries may put a region code in here. | | |
| Merch_Postcode | Merchant or ATM postal code. Postal code existence and format varies country to country. Not always provided. | ANS(0,20) | A6-12 34 |
| Merch_Country | Merchant or ATM country code. ISO 3-alpha country code. See Country Codes. | A(3) | USA |
| Merch_Tel | Merchant (or ATM operator) telephone number. Provided occasionally by some merchants | ANS(25) | +1 (636) - 0363 |
| Merch_URL | Merchant website URL. Provided by some merchants. | ANS(255) | http://petshopboys.co.uk/ |
| Merch_Name_Other | Alternative merchant name. This could be the Sole Trader or Legal name if provided. | ANS(40) | Governor and Company of the Bank of Engl |
| Merch_Net_id | Merchant ID assigned by Visa or Mastercard. The card networks assign unique merchant IDs to some merchants (generally larger ones). | ANS(30) | F9800D0001 |
| Merch_Tax_id | Merchant’s Tax ID (reference), if provided. | ANS(30) | ABCDE12345FGHIJ67890 |
| Merch_Contact | Merchant alternative contact details . Provided occasionally.<br>(For example, may contain an email address, secondary phone numbers, customer service operation hours and contact name.) | ANS(30) | Mark-F_Knopfler@markknopfler.c |
| Auth_Type | Type of authorisation request, as indicated by the acquirer.<br>0 = normal/undefined<br>P = Preauth (amount will be an estimate)<br>F = Final auth (amount is correct and for the full amount. No incremental auths will be received after this.)<br>Blank/empty = not applicable (e.g. for non-authorisation message types).<br>**Note**: See Auth_Expdate_UTC below for how long the authorisation block should survive.) | AN(1,1) | P |
| Auth_Expdate_UTC | Expiry date and time of this authorisation in UTC/GMT, as set by the acquirer or estimated by GPS. This field only applies to Authorisations and Authorisation Advices (MTID/Txn_Type combinations: ’0100’/’A’ or ‘0120’/’J’.) For both, this is when the authorisation expires, but note the following:<br>• If ‘Auth_Type’ field indicates a pre-auth (value ‘P’) then this will be the UTC/GMT time when the pre-auth expires. It is calculated from the time GPS receives the pre-auth, then adding the number of days the acquirer indicates it should survive for.<br>• If ‘Auth_Type’ field is not pre-auth (not ‘P’) then this is GPS’s estimate of how long the authorisation should survive. It may not be 100% accurate (as GPS may be unaware of all timeliness criteria, which can be changed at any time by Visa/Mastercard.) | Datetime(Y_to_nnn) | 2019-12-31 23:59:59.000 |
| Matching_Txn_ID | For first presentments, (i.e., MTID = ‘1240’, ’05pp’, ’06pp’ or ‘07pp’ AND Txn_Type=’P’) this is set to the TXn_ID field of the original authorisation that this transaction GPS matched it to.<br>For all other transactions, it will be blank (however in future this may change to point at other transactions..<br>Maximum value is 263-1 | N(1,19) | 6634938 |
| Reason_ID | For various messages, this contains a value explaining the reason for the message.<br>• For chargebacks, it contains the chargeback | N(1,4) | For Mastercard chargeback:<br>4808<br><br>For Visa chargeback: |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | reason.<br>• For Visa authorisation-related messages, it contains the Visa Message Reason Code (from Visa Base 1 field 63.3)<br>• For other messages, it may in future describe the reasons for these.<br>See Reason ID.<br>Maximum value: 9999 | | 11<br>For Visa Auths/Reversals:<br>3900 |
| Dispute_Condition | Additional information, in addition to Reason_ID field.<br>For Visa chargebacks, it contains the Visa Dispute Condition.<br>For other messages, it is currently not used. See Dispute Condition. | ANS(1,3) | For Visa chargeback: 6.1 |
| Network_Chargeback_Reference_Id | The reference numbers assigned by VISA or MasterCard during VROL or Mastercom initiated chargebacks. | N(1,19) | Visa: 0000001000<br>Mastercard: 0000000300002329285 |
| Acquirer_Forwarder_ID | Identifies the acquiring institution forwarding a Request or Advice message. | N(1,11) | 000405700 |
| DCC_Indicator | Indicates whether Dynamic Currency Conversion (DCC) has taken place.<br>0 = DCC has not been performed<br>1 = DCC has been performed | N(1,1) | 1 |
| multi_part_txn | Indicates whether the message is any part of a multi-auth/clearing sequence.<br>0 = Message is not part of a multi auth/clearing sequence<br>1=Message is any part of a multi auth/clearing sequence | N(1,1) | 1 |
| multi_part_txn_final | Indicates whether the message is the final part of a multi-auth/clearing sequence.<br>0 = Message is not part of a multi auth/clearing sequence<br>1 = Message is the final part of a multi auth/clearing sequence | N(1,1) | 1 |
| multi_part_number | Only available for Visa transactions. Indicates what part of a multi-auth/clearing sequence the message is. This value will not be higher than the total parts in multi_part_count field.<br>0 = N/A or unknown part number. | N(2,2) | For Mastercard : Blank<br>For Visa: 05 |
| multi_part_count | Only available for Visa transactions. Indicates how many parts there are in the multi-auth/clearing sequence.<br>0 = N/A or unknown. | N(2,2) | For Mastercard : Blank<br>For Visa: 09 |
| SettlementIndicator | Defines what settlement service the network will use to settle transactions:<br>0 = International Settlement Services<br>3 = Clearing Only<br>4 = Bilateral Settlement<br>8 = National Net Settlement Services | N(1,1) | 0 |
| Clearing_Process_Date | Indicates the clearing system's processing date expressed in the local time zone of the clearing system's processing centre. This is referred to as the *Reconcilliation Date* in the GPS Transaction XML | Datetime(Y_to_D) | 2099-12-31 |
| Settlement_Date | Identifies the date that the Mastercard settlement service initiates the movement of funds for settlement. This date is not provided by Visa.<br>**Note**: This date may be different from <Clearing_Process_Date> if files are processed on days which settlement banks are closed. | Datetime(Y_to_D) | For Mastercard: 2099-12-31<br>For Visa: Blank |
| Currency_Code_Fee | Currency code of the interchange fee. ISO 3-digit currency code. See Currency Codes. | N(3,3) | 876 |

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| Currency_Code_Fee_Settlement | Currency code that the interchange fee will be settled in. ISO 3-digit currency code. See Currency Codes. | N(3,3) | 876 |
| Interchange_Amount_Fee | Interchange fee amount in the currency defined in <Currency_Code_Fee>. | AmountSigned (15,6) | 01.020000 |
| Interchange_Amount_Fee_Settlement | Interchange fee amount in the currency defined in <Currency_Code_Fee_Settlement>. | AmountSigned (15,6) | 01.020000 |
| Traceid_Message | The card network's reference. Data reflects exactly what was received.<br>• Mastercard: date is from DE15, reference is from DE63 (exactly as provided.)<br>• Visa: date is from Transaction ID DE62.2, reference is Transaction ID DE62.2 (exactly as provided)<br>This should always be valid, except for a Visa message where the acquirer provided an invalid value . | TraceidRaw | Mastercard:<br>BNET-19991231-MCC1234XY<br><br>Visa:<br>VIS1-19991231-489365789012345 |
| Traceid_Original | The card network's original reference. Data reflects exactly what was received, and may or may not be valid.<br>• Mastercard: date MMDD is from DE48.63 positions 10-13, with YYYY completed by GPS (or '0000' if MMDD is not a valid date. Reference is from DE48.63 positions 1-9.<br>• Visa: date is from Original Transaction ID DE125, dataset 3 Tag 3, reference is Original Transaction ID DE125, dataset 3 Tag 3 (exactly as provided) | TraceidRaw | Mastercard Authorisations:<br>BNET-0000pppp-000000000<br>(where 'p' is a space)<br><br>BNET-20201231-SUR9876UX<br><br>Visa Authorisations:<br>VIS1-00000000-000000000000000<br><br>VIS1-20201231-660366000004444 |
| Network_Transaction_ID | The raw transaction ID, exactly as received from the card network without any alteration. Present only if received. GPS load this as follows:<br>• Visa Online: 16 hexdigits of the DE62.2 Visa Transaction ID. The leading hexdigit should be a '0' padding character. (Format HEX(16,16).)<br>• Visa Clearing: 15 characters, which should all be digits. (15 '0' characters indicates unknown.) (Format N(15,15).)<br>• Mastercard Online: DE63 concatenated with DE15 (Format ANS(1,13))<br>• Mastercard Clearing: DE63 (Format ANS(1,16))<br>**Note**: GPS provide this to aid resolving exception messages. We recommend you use traceid_lifecycle instead. | ANS(1,16) | Mastercard Authorisations:<br>SUR9876UX1231<br><br>Mastercard Financials:<br>pSUR9876UX1231<br>(where 'p' is a space)<br><br>Visa Authorisations:<br>0489365789012345<br><br>Visa Financials:<br>489365789012345 |
| POS_Date_DE13 | Terminal local date of transaction. The network normally provides the date as MMDD, and GPS will add YYYY which most likely corresponds to it. MMDD will be transmitted exactly as received, even if invalid. GPS will set the YYYY to '0000' if MMDD received is not a valid date. | DatetimeRaw(Y_to_D) | 2020-12-31 |
| Network_Currency_Conversion_Date | The card network's currency conversion date. Reflects the date of Visa/Mastercard currency conversion rate used in the transaction came from. MMDD is supplied by the network, GPS add the corresponding year YYYY. If the MMDD received from the network is not a valid date, GPS will set YYYY to '0000'. | DatetimeRaw(Y_to_D) | 2020-12-31 |
| Network_TxnAmt_To_BillAmt_Rate | The card network's currency conversion rate that they used to convert Txn_Amt into Bill_Amt. The rate used will be associated with the <Network_Currency_Conversion_Date> field. There will normally be seven significant figures in the Rate, as that is what Visa and Mastercard currently send. | Rate | 0000001:6<br><br>0000000:0 |

<table>
<tr><th>Field</th><th>Description</th><th>Data Type(1) (min, max)</th><th>Sample Data</th></tr>
<tr><td>Network_TxnAmt_To_ BaseAmt_Rate</td><td>The card network's currency conversion rate used to convert Txn_Amt into the network's base amount (often in US Dollars). This can be used in conjunction with <Network_BaseAmt_To_BillAmt_Rate> to understand how the Network converted Txn_Amt into Bill_Amt.<br>For Visa Base2, this is what arrives in Draft Data TCR5's 'Source Amount to Base Amount conversion rate' field; and there will always be six significant figures.<br>Note: The network Base Amount is not provided, as GPS do not receive this.</td><td>Rate</td><td>Visa Financials:<br>987654:12</td></tr>
<tr><td>Network_BaseAmt_To_ BillAmt_Rate</td><td>The card network's currency conversion rate used to convert from the network's base amount (often in US Dollars) to the Bill_Amt.<br>This can be used in conjunction with <Network_ TxnAmt_To_BaseAmt_Rate> to understand how the Network converted Txn_Amt into Bill_Amt.<br><br>For Visa Base2, this is what arrives in Draft Data TCR5's 'Base Amount to Destination Amount conversion rate' field; and there will always be six significant figures.<br>Note: The network Base Amount is not provided, as GPS do not receive this.</td><td>Rate</td><td>Visa Financials:<br>987654:3</td></tr>
<tr><td>Network_Original_ Data_Elements_DE90</td><td>The raw network data present in online reversals to explain which original (MTID=0100) the reversal is referring to. Format:<br><table><tr><th>Positions</th><th>Length</th><th>Content</th></tr><tr><td>1-4</td><td>4</td><td>Original MTID</td></tr><tr><td>5-10</td><td>6</td><td>Original STAN</td></tr><tr><td>11-20</td><td>10</td><td>Original transmission dat-etime MMDDhhmmss</td></tr><tr><td>21-31</td><td>11</td><td>Original Acquirer ID</td></tr><tr><td>32-42</td><td>11</td><td>Original Forwarder ID</td></tr></table>This is provided to aid diagnostics in exception cases.<br>Note: This field is as received by GPS; data accuracy depends on the acquirer.</td><td>N(42,42)</td><td>010048101904220013160000047666600000000000<br>010000000000000000000000000000000000000000<br>010098883605060005240000045953500000456456<br>010023152805052350160000001344500000200353</td></tr>
<tr><td>Network_Replacement_ Amounts_DE95</td><td>DE95 replacement amounts from the card network. Used in reversals and completion advices to advise of the new amounts.<br>Format for Mastercard:<ul><li>Positions 1-12: Actual Transaction Amount in minor units.</li><li>Positions 13-24: Actual Settlement Amount in minor units</li><li>Positions 25-36: Actual Cardholder Billing Amount in minor units</li><li>Positions 37-42 fixed '000000'.</li></ul>Format for Visa:<ul><li>Positions 1-12: Actual Transaction Amount in minor units.</li><li>Positions 13-42: Not used (zero filled)</li></ul></td><td>AN(42,42)</td><td>000000000778000000000000000000000778000000<br>000000000147000000000000000000000147000000</td></tr>
<tr><td>Network_Issuer_ Settle_ID</td><td>The card network's ID of the institution responsible for settlement.<ul><li>For Mastercard: Member ID (ICA) of the Issuer responsible for the transaction (IPM DE93).</li><li>For Visa: Funds Transfer Settlement Reporting Entity (Base 2 TCR33 Clearing and Settlement Advice, TCR0, 140-149)</li></ul></td><td>N(6,11)</td><td>019111</td></tr>
<tr><td>Visa_ResponseInfo_ DE44</td><td>Visa Base1 field 44 – Visa's Additional Response Data, exactly as provided from Visa to GPS. This will</td><td>ANS(25)</td><td>ppppppppppMppp2</td></tr>
</table>

| Field | Description | Data Type(1) (min, max) | Sample Data |
|---|---|---|---|
| | only be present for transactions received by GPS from Visa Base1, if DE44 was present.<br>It provides information on Visa's validation checks of data in the message. This will only be set for Visa online authorisation transactions. | | pppp2ppp2<br>(where p is a space) |
| Visa_POS_Data_DE60 | Visa Base 1 field 60 - Additional POS Data. GPS already map the Visa POS data into the GPS_POS_Data and GPS_POS_Capability fields, which we recommend to use in preference. This will only be set for Visa online authorisation transactions.<br>**Note**: the raw Visa POS Data is also provided for extra information. | N(2,12) | 00<br>0109<br>0100000007<br>750000400023 |
| Visa_STIP_Reason_ Code | Visa Base 1 field 63.4 STIP/Switch Reason Code. This maybe present for Visa online authorisation advices and reversals, to explain why Visa STIP responded instead of GPS. This will only be set for Visa online authorisation-related transactions (MTID-D=0120 and MTID=0420). | N(4,4) | 9045 |
| Mastercard_ AdviceReasonCode_ DE60 | Mastercard Authorisation Advice Reason Code (field 60).<br>Explains why Mastercard STIP occurred or why an advice was created.<br>This field has a length of 999, but currently Mastercard send a maximum of 60. Format:<br>• First 3 digits = Advice Reason Code - this indicates the main reason for the advice<br>• Next 4 digits: Advice Detail Code - generally '0000' indicates 'Accept' (e.g. by STIP or X-Code), and all other values indicate a decline/error detail<br>• Everything else: Advice Detail text - human readable text message<br>See Mastercard_AdviceReasonCode_DE60. | ANS(1,999) | 400<br>4002000<br>1010000 |
| Misc_TLV_Data | Miscellaneous data. See section Misc_TLV_Data field.<br>**Note**: GPS expect you to normally ignore this field.<br>It is used to contain rarely used pieces of data that are not normally required for transaction processing. The field maximum is 8000, however in EHI 4.1, we never expect this to be more than 200. | TLV10(0,8000) | V1250300030016048936586399444 4 |

(1) Data Types - lists the data type plus the minimum and maximum lengths in paranthesis. For details, see Data Types.

## Response Field Formats

Definition of response message field formats:

| Field | Description | Data type (min,max) | Sample Data |
|---|---|---|---|
| Responsestatus | Response Code for the authorisation request. See Response Codes.<br>**Note**: if sending value "10" (partial approval), then response field <Bill_Amt_Approved> must be provided too. | AN(2,2) | 00 |
| CurBalance | Actual balance on card after the transaction. Positive means the cardholder is in credit. Negative means the cardholder is in debt. | AmountSigned(9,2) | 189.24 |
| AvlBalance | Available balance on card after the transaction. Positive means the cardholder is in credit. Negative means the cardholder is in debt. | AmountSigned(9,2) | 89.24 |
| Acknowledgement | Notification message for the transaction is acknowledged or not. Valid values are:<br>0 = Not Acknowledged (i.e. GPS should re-transmit this); 1 = Acknowledged | N(1,1) | 1 |
| LoadAmount | This column must contain the amount that needs to be loaded to the card if approval is with an '0A' (Approve with Load) response code. Applicable only to Mode 2 with 'Approve with Load' feature set on. | AmountUnsigned (9,2) | 100.45 |
| Bill_Amt_Approved | Contains the amount approved in the billing currency code (Bill_Ccy.)<br>This is mandatory for all partial approval messages, to inform the acquirer how much of the transaction amount | AmountSigned(9,2) | -52.64 |

| Field | Description | Data type (min,max) | Sample Data |
|---|---|---|---|
| | is approved.<br>Note that partial approval (Resp_Code_DE39="10") is only permitted if GPS_POS_Capability position 1 (partial approval support indicator) is 1 (partial approval supported by POS)<br>It should have the same sign as Bill_Amt in the request message. However, GPS will take the absolute value of this (for example, sending -52.64 is the same as sending 52.64).<br>If the transaction is approved (Resp_Code_DE39="00") then either:<br>• Bill_Amt_Approved is included and contains the same value as Bill_Amt in the request message<br>-Or -<br>• Bill_Amt_Approved is not present<br>If transaction is partially approved (Resp_Code_DE39="10") then:<br>• Bill_Amt_Approved must be present and contain a value between 0 and Bill_Amt (but non-zero, and not Bill_Amt)<br>If transaction is declined then:<br>• Bill_Amt_Approved must be zero or not present | | |
| Update_Balance | Indicates whether GPS should update stand-in balances.<br>0=do not update balance (default); 1=update balance (using CurBalance_GPS_STIP and AvlBalance_GPS_STIP as provided in this response)<br>**Note**: You should only respond with '1' (update balance) if you have received both Balance_Sequence and Balance_Sequence_Exthost in the request message.<br>**Note**: the GPS stand-in balances can also be updated via the WS_BalanceUpdate web service. | N(1,1) | 0 |
| New_Balance_ Sequence_Exthost | New external host balance sequence number for this card account.<br>New balance (and this New_Balance_Sequence_Exthost number) to be installed if both Update_Balance=1, AND this balance sequence number is strictly higher than the existing external host balance sequence number (CARDS.bal_seqno_exthost). Use of this will prevent GPS from installing an out-of-date balance.<br>External host usage:<br>• Each time the external host returns a balance, it should include this number.<br>• The external host should increment this number each time it changes the card balance.<br>• Numbers do not need to be sequential.<br>• GPS interprets a higher number as indicating a more recent balance<br>Example:<br>External host sends GPS two response messages:<br>*Message A*: CurBalance=11.11; AvlBalance=22.22; Update_Balance=1<br>New_Balance_Sequence_Exthost = 18<br>*Message B*: CurBalance=77.77 ; AvlBalance=88.88; Update_Balance=1<br>New_Balance_Sequence_Exthost=20<br>Since the New_Balance_Sequence_Exthost in message B is higher than message A, GPS will always apply the balances from Message B, irrespective of which message is received first. | N(1,19)<br>Max possible value is 263-1 | 95736 |
| CVV2_Result | Used only if CVV2 is present in request. M=Match; N=No-match.<br>Any other values other than M and N will cause a format error rejection. | A(1,1) | M |
| AvlBalance_GPS_ STIP | Similar to AvlBalance, this field is used in EHI modes 4 and 5 (only) to update the available GPS stand-in balance. It will only be used to approve or decline EHI messages where a response from the External Host is not received and it will be decremented with every approval.<br>It is never sent back to the card network for any response message where the acquirer is expecting the card's available balance, such as Balance Inquiry transactions. Instead, the AvlBalance field, if sent by the External Host, is used for this purpose. | AmountSigned (9,2) | 120.32 |
| CurBalance_GPS_ STIP | Similar to CurBalance, this field is used in EHI modes 4 and 5 to update the current GPS stand-in balance. | AmountSigned (9,2) | 129.32 |

# Transaction Type Decoding

When a GetTransaction message is received, the receiver should use the MTID and Txn_Type fields as follows to determine which of the below sections is appropriate to decode it.

| MTID | Txn_Type | Description | Transaction Type decoding |
|---|---|---|---|
| 0100 | A | Authorisation Request | Transaction Type - Authorisation |
| | D | Automatic Authorisation Reversal | Transaction Type - Authorisation |
| 0101 | A | Authorisation Repeat (Visa Only) | Transaction Type - Authorisation |
| 0120 | J | Authorisation Advice | Transaction Type - Authorisation |
| 0120 | D | Authorisation Reversal Advice (due to AFD 0120 auth advice) | Transaction Type - Authorisation |
| 0400 | D | Authorisation Reversal Request | Transaction Type - Authorisation |
| 0420 | D | Authorisation Reversal Advice | Transaction Type - Authorisation |
| 1240<br>05pp<br>06pp<br>07pp<br><br>(p = space) | A | Authorisation Advice Notification<br>(Dummy authorisation created if a Financial notification has no matching author-isation.) | Transaction Type - Financial |
| 1240<br>25pp<br>26pp<br>27pp<br><br>(p = space) | E | Financial Reversal | Transaction Type - Financial |
| 1240 | C | Chargeback Notification | Transaction Type - Financial |
| 1240 | H | Chargeback Notification (Non-Credit) | Transaction Type - Financial |
| 1240 | K | Chargeback Reversal | Transaction Type - Financial |
| 1240<br>05pp<br>06pp<br>07pp<br><br>(p = space) | N | Financial Notification (Second Presentment) | Transaction Type - Financial |
| 1240<br>05pp<br>06pp<br>07pp<br><br>(p = space) | P | Financial Notification<br>(First Presentment) | Transaction Type - Financial |
| | L | Load | Transaction Types - Non-Card-Network Trans-actions |
| | U | Unload | Transaction Types - Non-Card-Network Trans-actions |
| | G | Payment | Transaction Types - Non-Card-Network Trans-actions |
| | B | Balance Adjustment | Transaction Types - Non-Card-Network Trans-actions |
| | Y | Card Expiry | Transaction Types - Non-Card-Network Trans-actions |
| | P | Fee | Transaction Types - Non-Card-Network Trans-actions |

# 2.4.1 Transaction Type – Authorisation

Authorisation message types are used for the following message transaction types:

| MTID | Txn_ Type | Description |
|---|---|---|
| 0100 | A | Authorisation Request. If this arrives with:<br><Txn_Stat_Code> = "I" (declined)<br><Authorised_By_GPS> = "Y" (GPS authorised the transaction)<br>Then this means that the authorisation is being re-sent as an advice, to inform you that GPS authorised this transaction, and the response code used was <Resp_Code_DE39>. This should be accepted as an advice. |
| | D | Automatic Authorisation reversal.<br>This is created by GPS system to unblock the authorised amount when all the following have happened:<br>• an 0100 approved authorisation request was received by GPS<br>• No matching reversal or matching financial for this authorisation has been received<br>• A configurable amount of time has elapsed.<br>This will ensure that outstanding authorisations which never have a financial do not permanently block the account. |
| 0101 | A | Authorisation Repeat (Visa Only). |
| 0120 | J | Authorisation Advice<br>This is an advice received from the network, normally to advise of a MTID=0110 response generated by the network sent to the acquirer. (In case where for some reason or other, the GPS 0110 response does not exist or could not be used.) |
| 0400 | D | Reversal Request<br>Note: although this is an 0400 message, it cannot be declined, as it is telling you a reversal has already happened.<br>There is no difference in practice between 0400 and 0420 – treat both as reversal advices. |
| 0420 | D | Reversal Advice |

## Request Message Fields

The following fields are included in an authorisation request message:

| Field | Usage | | Field | Usage | | Field | Usage |
|---|---|---|---|---|---|---|---|
| Acquirer_id_DE32 | Optional | | SubBIN | Mandatory | | PaymentToken_activationMethodData | Optional |
| ActBal | Mandatory | | TLogIDOrg | Optional | | ICC_System_Related_Data_DE55 | Optional |
| Additional_Amt_ DE54 | Optional | | VL_Group | Optional | | Merch_Name | Mandatory |
| Amt_Tran_Fee_ DE28 | Optional | | Dom_Fee_Fixed | Mandatory | | Merch_Street | Optional |
| Auth_Code_DE38 | Optional | | Non_Dom_Fee_Fixed | Mandatory | | Merch_City | Mandatory |
| Avl_Bal | Mandatory | | Fx_Fee_Fixed | Mandatory | | Merch_Region | Optional |
| Bill_Amt | Mandatory | | Other_Fee_Amt | Mandatory | | Merch_Postcode | Optional |
| Bill_Ccy | Mandatory | | Fx_Fee_Rate | Mandatory | | Merch_Country | Mandatory |
| BlkAmt | Mandatory | | Dom_Fee_Rate | Mandatory | | Merch_URL | Optional |
| Cust_Ref | Optional | | Non_Dom_Fee_Rate | Mandatory | | Merch_Name_Other | Optional |
| FX_Pad | Mandatory | | Additional_Data_DE124 | Optional | | Merch_Net_id | Optional |
| Fee_Fixed | Mandatory | | CVV2 | Optional | | Merch_Tax_id | Optional |
| Fee_Rate | Mandatory | | Expiry_Date | Optional | | Merch_Contact | Optional |
| LoadSRC | Optional | | PAN_Sequence_Number | Optional | | Auth_Type | Optional |
| LoadType | Optional | | PIN | Optional | | Auth_Expdate_UTC | Optional |
| MCC_Code | Optional | | PIN_Enc_Algorithm | Optional | | Matching_Txn_ID | Optional |
| MCC_Desc | Optional | | PIN_Format | Optional | | Reason_ID | Optional |

| Field | Usage | | Field | Usage | | Field | Usage |
|---|---|---|---|---|---|---|---|
| MCC_Pad | Mandatory | | PIN_Key_Index | Optional | | Dispute_Condition | Optional |
| Merch_ID_DE42 | Optional | | SendingAttemptCount | Mandatory | | Network_Chargeback_Reference_Id | Optional |
| Merch_Name_DE43 | Mandatory | | source_bank_ctry | Omitted | | Acquirer_Forwarder_ID | Optional |
| Note | Optional | | source_bank_account_format | Omitted | | DCC_Indicator | Optional |
| POS_Data_DE22 | Optional | | source_bank_account | Omitted | | Multi_part_txn | Optional |
| POS_Data_DE61 | Optional | | dest_bank_ctry | Omitted | | Multi_part_txn_final | Optional |
| POS_Termnl_DE41 | Optional | | dest_bank_account_format | Omitted | | Multi_part_number | Optional |
| POS_Time_DE12 | Optional | | GPS_POS_Capability | Mandatory | | Multi_part_count | Optional |
| Proc_Code | Mandatory | | GPS_POS_Data | Optional | | SettlementIndicator | Optional |
| Resp_Code_DE39 | Depends on EHI mode:<br>Mode 1: Optional<br>Mode 2: Optional<br>Mode 3: Mandatory<br>Mode 4 : Optional<br>Mode 5 : Optional | | Acquirer_Reference_Data_031 | Omitted | | Clearing_Process_Date | Optional |
| Ret_Ref_No_DE37 | Optional | | Response_Source | Optional | | Settlement_Date | Optional |
| Settle_Amt | Optional | | Response_Source_Why | Optional | | Currency_Code_Fee | Optional |
| Settle_Ccy | Optional | | Message_Source | Optional | | Currency_Code_Fee_Settlement | Optional |
| Status_Code | Mandatory | | Message_Why | Optional | | Interchange_Amount_Fee | Optional |
| Token | Mandatory | | traceid_lifecycle | Optional | | Interchange_Amount_Fee_Settlement | Optional |
| Trans_link | Mandatory | | Balance_Sequence | Optional | | Traceid_Message | Optional |
| Txn_Amt | Mandatory | | Balance_Sequence_Exthost | Optional | | Traceid_Original | Optional |
| Txn_CCy | Mandatory | | PaymentToken_id | Optional | | Network_Transaction_ID | Optional |
| Txn_Ctry | Optional | | PaymentToken_creator | Optional | | POS_Date_DE13 | Optional |
| Txn_Desc | Optional | | PaymentToken_expdate | Optional | | Network_Currency_Conversion_Date | Optional |
| Txn_GPS_Date | Mandatory | | PaymentToken_type | Optional | | Network_TxnAmt_To_BillAmt_Rate | Optional |
| TXn_ID | Mandatory | | PaymentToken_status | Optional | | Network_TxnAmt_To_BaseAmt_Rate | Omitted |
| Txn_Stat_Code | Mandatory | | PaymentToken_creatorStatus | Optional | | Network_BaseAmt_To_BillAmt_Rate | Omitted |
| TXN_Time_DE07 | Mandatory | | PaymentToken_wallet | Optional | | Network_Original_Data_Elements_DE90 | Optional |
| Txn_Type | Mandatory | | PaymentToken_deviceType | Optional | | Network_Replacement_Amounts_DE95 | Optional |
| Additional_Data_ DE48 | Optional | | PaymentToken_lang | Optional | | Network_Issuer_Settle_ID | Omitted |
| Authorised_by_GPS | Optional | | PaymentToken_deviceTelNum | Optional | | Visa_ResponseInfo_DE44 Optional | (Visa only) |
| AVS_Result | Optional | | PaymentToken_deviceIp | Optional | | Visa_POS_Data_DE60 Optional | (Visa only) |
| CU_Group | Optional | | PaymentToken_deviceId | Optional | | Visa_STIP_Reason_Code Optional | (Visa only) |
| InstCode | Mandatory | | PaymentToken_deviceName | Optional | | Mastercard_AdviceReasonCode_DE60 Optional | (Mastercard only) |
| MTID | Mandatory | | PaymentToken_activ-ationCode | Optional | | Misc_TLV_Data | Optional |
| ProductID | Mandatory | | PaymentToken_activ-ationExpiry | Optional | | | |
| Record_Data_ DE120 | Optional | | PaymentToken_activ-ationMethod | Optional | | | |

### Usage Notes

- **Omitted** - can be omitted (fields not included) or included with an empty value (e.g.<Bill_Ccy></Bill_Ccy>)
- **Optional** - can be omitted (fields not included) or included with an empty value. Can be present (e.g., <Bill_Ccy>826</Bill_Ccy>)
- **Mandatory** - field must be present. For example: <Bill_Ccy>978</Bill_Ccy>

## Response Message Fields

The following fields must be present in authorisation response message:

| Field | Usage |
|---|---|
| Responsestatus | Mandatory |
| CurBalance | Conditional:<br>If Proc_Code begins “30” (Balance enquiry) AND transaction is being approved THEN:<br>EHI modes 1,4,5: Must be provided<br>EHI mode 2: Should be provided if GPS balance does not reflect actual account balance<br>EHI mode 3: not required<br>Otherwise: optional |
| AvlBalance | Conditional:<br>IF Proc_Code begins “30” (Balance enquiry) AND transaction is being approved THEN:<br>EHI modes 1,4,5: Must be provided<br>EHI mode 2: Should be provided if GPS balance does not reflect actual account balance<br>EHI mode 3: not required<br>Otherwise: optional |
| Acknowledgement | Optional |
| LoadAmount | Optional |
| Bill_Amt_Approved | Optional |
| Update_Balance | Optional |
| New_Balance_Sequence_Exthost | Optional |
| CVV2_Result | Optional |
| AvlBalance_GPS_STIP | Conditional:<br>Required if Update_Balance=1<br>Otherwise optional. |
| CurBalance_GPS_STIP | Conditional:<br>Required if Update_Balance=1<br>Otherwise optional. |

# 2.4.2 Transaction Type – Financial

Financial message types are used for the following message types:

| MTID | Txn_Type | Description |
|---|---|---|
| 1240<br>05pp<br>06pp<br>07pp<br>(p = space) | A | Authorisation Advice notification<br>(Dummy authorisation created if a Financial notification has no matching authorisation.) |
| 1240 | C | Chargeback notification |
| 1240 | H | Chargeback (non-credit) notification |
| 1240 | K | Chargeback reversal |
| 1240<br>05pp<br>06pp<br>07pp<br>(p = space) | P | Financial notification (first presentment) |
| 1240<br>25pp<br>26pp<br>27pp<br>(p = space) | E | Financial Reversal notification |
| 1240 | N | Financial notification (second presentment) |

| MTID | Txn_Type | Description |
|---|---|---|
| 05pp<br>06pp<br>07pp<br>(p = space) | | |

## Request Message Fields

The following fields must be present in a Financial request message:

| Field | Usage | | Field | Usage |
|---|---|---|---|---|
| Acquirer_id_DE32 | Optional | | dest_bank_ctry | Omitted |
| ActBal | Mandatory | | dest_bank_account_format | Omitted |
| Additional_Amt_DE54 | Optional | | dest_bank_account | Omitted |
| Amt_Tran_Fee_DE28 | Optional | | GPS_POS_Capability | Mandatory |
| Auth_Code_DE38 | Optional | | GPS_POS_Data | Optional |
| Avl_Bal | Mandatory | | Acquirer_Reference_Data_031 | Mandatory |
| Bill_Amt | Mandatory | | Response_Source | Omitted |
| Bill_Ccy | Mandatory | | Response_Source_Why | Omitted |
| BlkAmt | Mandatory | | Message_Source | Omitted |
| Cust_Ref | Optional | | Message_Why | Omitted |
| FX_Pad | Mandatory | | traceid_lifecycle | Optional |
| Fee_Fixed | Mandatory | | Balance_Sequence | Optional |
| Fee_Rate | Mandatory | | Balance_Sequence_Exthost | Optional |
| LoadSRC | Optional | | PaymentToken_id | Optional |
| LoadType | Optional | | PaymentToken_creator | Optional |
| MCC_Code | Optional | | PaymentToken_expdate | Optional |
| MCC_Desc | Optional | | PaymentToken_type | Optional |
| MCC_Pad | Mandatory | | PaymentToken_status | Optional |
| Merch_ID_DE42 | Optional | | PaymentToken_creatorStatus | Optional |
| Merch_Name_DE43 | Mandatory | | PaymentToken_wallet | Optional |
| Note | Optional | | PaymentToken_deviceType | Optional |
| POS_Data_DE22 | Optional | | PaymentToken_lang | Optional |
| POS_Data_DE61 | Optional | | PaymentToken_deviceTelNum | Optional |
| POS_Termnl_DE41 | Optional | | PaymentToken_deviceIp | Optional |
| POS_Time_DE12 | Optional | | PaymentToken_deviceId | Optional |
| Proc_Code | Mandatory | | PaymentToken_deviceName | Optional |
| Resp_Code_DE39 | Optional | | PaymentToken_activationCode | Omitted |
| Ret_Ref_No_DE37 | Optional | | PaymentToken_activationExpiry | Omitted |
| Settle_Amt | Optional | | PaymentToken_activationMethod | Omitted |
| Settle_Ccy | Optional | | PaymentToken_activationMethodData | Omitted |
| Status_Code | Mandatory | | ICC_System_Related_Data_DE55 | Optional |
| Token | Mandatory | | Merch_Name | Mandatory |
| Trans_link | Mandatory | | Merch_Street | Optional |
| Txn_Amt | Mandatory | | Merch_City | Mandatory |

| Field | Usage | | Field | Usage |
|---|---|---|---|---|
| Txn_CCy | Mandatory | | Merch_Region | Optional |
| Txn_Ctry | Optional | | Merch_Postcode | Optional |
| Txn_Desc | Optional | | Merch_Country | Mandatory |
| Txn_GPS_date | Mandatory | | Merch_Tel | Optional |
| TXn_ID | Mandatory | | Merch_URL | Optional |
| Txn_Stat_Code | Mandatory | | Merch_Name_Other | Optional |
| TXN_Time_DE07 | Optional | | Merch_Net_id | Optional |
| Txn_Type | Mandatory | | Merch_Tax_id | Optional |
| Additional_Data_DE48 | Optional | | Merch_Contact | Optional |
| Authorised_by_GPS | Optional | | Auth_Type | Optional |
| AVS_Result | Optional | | Auth_Expdate_UTC | Optional |
| CU_Group | Optional | | Matching_Txn_ID | Optional |
| InstCode | Mandatory | | Reason_ID | Optional |
| MTID | Mandatory | | Dispute_Condition | Optional |
| ProductID | Mandatory | | Network_Chargeback_Reference_Id | Optional |
| Record_Data_DE120 | Omitted | | Acquirer_Forwarder_ID | Optional |
| SubBIN | Mandatory | | DCC_Indicator | Optional |
| TLogIDOrg | Optional | | Multi_part_txn | Optional |
| VL_Group | Optional | | Multi_part_txn_final | Optional |
| Dom_Fee_Fixed | Mandatory | | Multi_part_number | Optional |
| Non_Dom_Fee_Fixed | Mandatory | | Multi_part_count | Optional |
| Fx_Fee_Fixed | Mandatory | | SettlementIndicator | Optional |
| Other_Fee_Amt | Mandatory | | Clearing_Process_Date | Optional |
| Fx_Fee_Rate | Mandatory | | Settlement_Date | Optional |
| Dom_Fee_Rate | Mandatory | | Currency_Code_Fee | Optional |
| Non_Dom_Fee_Rate | Mandatory | | Currency_Code_Fee_Settlement | Optional |
| Additional_Data_DE124 | Optional | | Interchange_Amount_Fee | Optional |
| CVV2 | Omitted | | Interchange_Amount_Fee_Settlement | Optional |
| Expiry_Date | Optional | | Traceid_Message | Optional |
| PAN_Sequence_Number | Optional | | Traceid_Original | Optional |
| PIN | Omitted | | Network_Transaction_ID | Optional |
| PIN_Enc_Algorithm | Omitted | | POS_Date_DE13 | Optional |
| PIN_Format | Omitted | | Network_Currency_Conversion_Date | Omitted |
| PIN_Key_Index | Omitted | | Network_TxnAmt_To_BillAmt_Rate | Optional |
| SendingAttemptCount | Mandatory | | Network_TxnAmt_To_BaseAmt_Rate | Optional (Visa only) |
| source_bank_ctry | Omitted | | Network_BaseAmt_To_BillAmt_Rate | Optional (Visa only) |
| source_bank_account_format | Omitted | | Network_Original_Data_Elements_DE90 | Omitted |
| source_bank_account | Omitted | | Network_Replacement_Amounts_DE95 | Omitted |

## Response Message Fields

The following fields must be present in the Financial response message:

| Field | Usage |
|---|---|
| Responsestatus | Optional |
| CurBalance | Optional |
| AvlBalance | Optional |
| Acknowledgement | Mandatory |
| LoadAmount | Optional |
| Bill_Amt_Approved | Optional |
| Update_Balance | Optional |
| New_Balance_Sequence_Exthost | Optional |
| CVV2_Result | Optional |
| AvlBalance_GPS_STIP | Conditional:<br>Required if Update_Balance=1<br>Otherwise optional. |
| CurBalance_GPS_STIP | Conditional:<br>Required if Update_Balance=1<br>Otherwise optional. |

# 2.4.3 Transaction Types – Non-Card-Network Transactions

This section is for non-card-network originated transactions (i.e., where the cardholder has not used their card to perform this transaction, the transaction is not received from Visa or Mastercard, but another source, such as Web Services or BACS). As a result, the card network specific fields are not present (e.g., MTID and Acquirer ID (Acquirer_id_DE32) are not present.)

The following message types are non-card-network transactions:

| MTID | Txn_Type | Description |
|---|---|---|
| n/a (not present) | L | Load |
| n/a (not present) | U | Unload |
| n/a (not present) | G | Payment |
| n/a (not present) | B | Balance Adjustment |
| n/a (not present) | Y | Card Expiry |
| n/a (not present) | P | Fee |

## Request Message Fields

The following fields must be present in non-card-network transaction request message:

| Field | Usage | | Field | Usage |
|---|---|---|---|---|
| Acquirer_id_DE32 | Omitted | | dest_bank_account | Optional |
| ActBal | Mandatory | | GPS_POS_Capability | Omitted |
| Additional_Amt_DE54 | Omitted | | GPS_POS_Data | Omitted |
| Amt_Tran_Fee_DE28 | Omitted | | Acquirer_Reference_Data_031 | Omitted |
| Auth_Code_DE38 | Omitted | | Response_Source | Omitted |
| Avl_Bal | Mandatory | | Response_Source_Why | Omitted |
| Bill_Amt | Mandatory | | Message_Source | Omitted |
| Bill_Ccy | Mandatory | | Message_Why | Omitted |
| BlkAmt | Mandatory | | traceid_lifecycle | Omitted |
| Cust_Ref | Optional | | Balance_Sequence | Omitted |
| FX_Pad | Mandatory | | Balance_Sequence_Exthost | Omitted |
| Fee_Fixed | Mandatory | | PaymentToken_id | Omitted |

| Field | Usage | | Field | Usage |
|---|---|---|---|---|
| Fee_Rate | Mandatory | | PaymentToken_creator | Omitted |
| LoadSRC | Optional | | PaymentToken_expdate | Omitted |
| LoadType | Optional | | PaymentToken_type | Omitted |
| MCC_Code | Omitted | | PaymentToken_status | Omitted |
| MCC_Desc | Omitted | | PaymentToken_creatorStatus | Omitted |
| MCC_Pad | Omitted | | PaymentToken_wallet | Omitted |
| Merch_ID_DE42 | Omitted | | PaymentToken_deviceType | Omitted |
| Merch_Name_DE43 | Omitted | | PaymentToken_lang | Omitted |
| Note | Optional | | PaymentToken_deviceTelNum | Omitted |
| POS_Data_DE22 | Omitted | | PaymentToken_deviceIp | Omitted |
| POS_Data_DE61 | Omitted | | PaymentToken_deviceId | Omitted |
| POS_Termnl_DE41 | Omitted | | PaymentToken_deviceName | Omitted |
| POS_Time_DE12 | Omitted | | PaymentToken_activationCode | Omitted |
| Proc_Code | Mandatory | | PaymentToken_activationExpiry | Omitted |
| Resp_Code_DE39 | Omitted | | PaymentToken_activationMethod | Omitted |
| Ret_Ref_No_DE37 | Omitted | | PaymentToken_activationMethodData | Omitted |
| Settle_Amt | Optional | | ICC_System_Related_Data_DE55 | Optional |
| Settle_Ccy | Optional | | Merch_Name | Omitted |
| Status_Code | Mandatory | | Merch_Street | Omitted |
| Token | Mandatory | | Merch_City | Omitted |
| Trans_link | Mandatory | | Merch_Region | Omitted |
| Txn_Amt | Mandatory | | Merch_Postcode | Omitted |
| Txn_CCy | Mandatory | | Merch_Country | Optional |
| Txn_Ctry | Optional | | Merch_Tel | Omitted |
| Txn_Desc | Optional | | Merch_URL | Omitted |
| Txn_GPS_Date | Mandatory | | Merch_Name_Other | Omitted |
| TXn_ID | Mandatory | | Merch_Net_id | Omitted |
| Txn_Stat_Code | Mandatory | | Merch_Tax_id | Omitted |
| TXN_Time_DE07 | Omitted | | Merch_Contact | Omitted |
| Txn_Type | Mandatory | | Auth_Type | Omitted |
| Additional_Data_DE48 | Omitted | | Auth_Expdate_UTC | Omitted |
| Authorised_by_GPS | Omitted | | Matching_Txn_ID | Omitted |
| AVS_Result | Omitted | | Reason_ID | Omitted |
| CU_Group | Optional | | Dispute_Condition | Omitted |
| InstCode | Mandatory | | Network_Chargeback_Reference_Id | Omitted |
| MTID | Omitted | | Acquirer_Forwarder_ID | Omitted |
| ProductID | Mandatory | | DCC_Indicator | Omitted |
| Record_Data_DE120 | Omitted | | Multi_part_txn | Omitted |
| SubBIN | Mandatory | | Multi_part_txn_final | Omitted |
| TLogIDOrg | Omitted | | Multi_part_number | Omitted |

| Field | Usage | | Field | Usage |
|---|---|---|---|---|
| VL_Group | Optional | | Multi_part_count | Omitted |
| Dom_Fee_Fixed | Mandatory | | SettlementIndicator | Omitted |
| Non_Dom_Fee_Fixed | Mandatory | | Clearing_Process_Date | Omitted |
| Fx_Fee_Fixed | Mandatory | | Settlement_Date | Omitted |
| Other_Fee_Amt | Mandatory | | Currency_Code_Fee | Omitted |
| Fx_Fee_Rate | Mandatory | | Currency_Code_Fee_Settlement | Omitted |
| Dom_Fee_Rate | Mandatory | | Interchange_Amount_Fee | Omitted |
| Non_Dom_Fee_Rate | Mandatory | | Interchange_Amount_Fee_Settlement | Omitted |
| Additional_Data_DE124 | Omitted | | Traceid_Message | Omitted |
| CVV2 | Omitted | | Traceid_Original | Omitted |
| Expiry_Date | Omitted | | Network_Transaction_ID | Omitted |
| PAN_Sequence_Number | Omitted | | POS_Date_DE13 | Omitted |
| PIN | Omitted | | Network_Currency_Conversion_Date | Omitted |
| PIN_Enc_Algorithm | Omitted | | Network_TxnAmt_To_BillAmt_Rate | Omitted |
| PIN_Format | Omitted | | Network_TxnAmt_To_BaseAmt_Rate | Omitted |
| PIN_Key_Index | Omitted | | Network_BaseAmt_To_BillAmt_Rate | Omitted |
| SendingAttemptCount | Mandatory | | Network_Original_Data_Elements_DE90 | Omitted |
| source_bank_ctry | Optional | | Network_Replacement_Amounts_DE95 | Omitted |
| source_bank_account_format | Optional | | Network_Issuer_Settle_ID | Omitted |
| source_bank_account | Optional | | Visa_ResponseInfo_DE44 | Omitted |
| dest_bank_ctry | Optional | | Visa_POS_Data_DE60 | Omitted |
| dest_bank_account_format | Optional | | Visa_STIP_Reason_Code | Omitted |

## Response Message Fields

The following fields must be present in a non-card-network response message:

| Field | Usage |
|---|---|
| Responsestatus | Optional |
| CurBalance | Optional |
| AvlBalance | Optional |
| Acknowledgement | Mandatory |
| LoadAmount | Optional |
| Bill_Amt_Approved | Optional |
| Update_Balance | Omitted |
| New_Balance_Sequence_Exthost | Omitted |
| CVV2_Result | Optional |
| AvlBalance_GPS_STIP | Optional |
| CurBalance_GPS_STIP | Optional |

# 2.5 Cut_Off Messages

You can optionally enable receiving batch cut-off messages which provide summary information of the data sent via EHI. The frequency of cut-off messages is configurable.

> **Tip:** The recommended frequency is 2-3 times per day.

## Message Fields

The following fields are included in the *Cut_Off* message:

| Field | Description | Data type (min, max) | Sample Data | Usage |
|---|---|---|---|---|
| CutoffID | A unique identifier of the cut_off message. | N(1,9) | 12 | Mandatory |
| ProductID | The Product ID of the card. | N(1,9) | 1504 | Mandatory |
| CutoffDate | Date and time of this cut_off message. | Datetime (Y_to_nnn) | 2021-03-02 13:16:42.999 | Mandatory |
| FirstTxn_ID | First Txn_ID in this cut_off period.<br>Maximum is 2^63-1. | N(1,19) | 1234564 | Mandatory |
| LastTxn_ID | Last Txn_ID in this cut_off period.<br>Maximum is 2^63-1. | N(1,19) | 4523587 | Mandatory |
| Auths_Acknowledged | Number of acknowledged Authorisations during this cut_off | N(1,9) | 5000 | Mandatory |
| Auths_NotAcknowledged | Number of un-acknowledged Authorisations during this cut_off | N(1,9) | 100 | Mandatory |
| Financials_Acknowledged | Number of acknowledged Financials during this cut_off | N(1,9) | 5000 | Mandatory |
| Financials_NotAcknowledged | Number of un-acknowledged Financials during this cut_off | N(1,9) | 100 | Mandatory |
| LoadsUnloads_Acknowledged | Number of acknowledged Loads/Unloads during this cut_off | N(1,9) | 5000 | Mandatory |
| LoadsUnloads_NotAcknowledged | Number of un-acknowledged Loads/Unloads during this cut_off | N(1,9) | 100 | Mandatory |
| BalanceAdjustExpiry_Acknowledged | Number of acknowledged Balance Adjustment and Expiry during this cut_off | N(1,9) | 5000 | Mandatory |
| BalanceAdjustExpiry_NotAcknowledged | Number of un-acknowledged Balance Adjustment and Expiry during this cut_off | N(1,9) | 100 | Mandatory |

## Response Message Fields

The following fields must be present in the Cut_off response message:

| Field | Description | Data type (min,max) | Sample Data | Usage |
|---|---|---|---|---|
| Cut_OffResult | Valid values:<br>0 = Not Acknowledged (in a future release, GPS may re-transmit the cut off message.)<br>1 = Acknowledged | N(1,1) | 1 | Mandatory |

# Section 3: WSDL and Examples

## 3.1 GetTransaction WSDL and Example Messages

This section provides a copy of the GetTransaction WSDL and examples of common transaction messages and responses. This section includes the following topics:



### 3.1.1 GetTransaction WSDL

**Note:** For details of the 2001 XMLSchema datatypes, see: https://www.w3.org/2001/XMLSchema.xsd

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:tm="http://microsoft.com/wsdl/mime/textMatching/" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:tns="http://tempuri.org/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:s="http://www.w3.org/2001/XMLSchema" xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/" xmlns:http="h-
ttp://schemas.xmlsoap.org/wsdl/http/" targetNamespace="http://tempuri.org/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <s:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
      <s:element name="GetTransaction">
        <s:complexType>
          <s:all>
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```

```
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<s:element minOccurs="0" maxOccurs="1" name="Interchange_Amount_Fee_Settlement" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Clearing_Process_Date" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Settlement_Date" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="DCC_Indicator" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="multi_part_txn" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="multi_part_txn_final" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="multi_part_number" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="multi_part_count" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="SettlementIndicator" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Traceid_Message" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Traceid_Original" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Network_Transaction_ID" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="POS_Date_DE13" type="s:string" />

<s:element minOccurs="0" maxOccurs="1" name="Network_Currency_Conversion_Date" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Network_TxnAmt_To_BillAmt_Rate" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Network_TxnAmt_To_BaseAmt_Rate" type="s:string" />
<s:element minOccurs="0" maxOccurs="1" name="Network_BaseAmt_To_BillAmt_Rate" type="s:string" />
```

```
      <s:element minOccurs="0" maxOccurs="1" name="Network_Original_Data_Elements_DE90" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Network_Replacement_Amounts_DE95" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Network_Issuer_Settle_ID" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Visa_ResponseInfo_DE44" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Visa_POS_Data_DE60" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Visa_STIP_Reason_Code" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Mastercard_AdviceReasonCode_DE60" type="s:string" />
      <s:element minOccurs="0" maxOccurs="1" name="Misc_TLV_Data" type="s:string" />
    </s:all>
  </s:complexType>
</s:element>
<s:element name="GetTransactionResponse">
  <s:complexType>
    <s:all>
      <s:element minOccurs="1" maxOccurs="1" name="GetTransactionResult"                                    type="tns:ResponseMsg"/>
    </s:all>
  </s:complexType>
</s:element>
<s:complexType name="ResponseMsg">
  <s:all>
    <s:element minOccurs="0" maxOccurs="1" name="Responsestatus" type="s:string" />
    <s:element minOccurs="0" maxOccurs="1" name="CurBalance" type="s:double" />
    <s:element minOccurs="0" maxOccurs="1" name="AvlBalance" type="s:double" />
    <s:element minOccurs="1" maxOccurs="1" name="Acknowledgement" type="s:string" />
    <s:element minOccurs="0" maxOccurs="1" name="LoadAmount" type="s:double" />
    <s:element minOccurs="0" maxOccurs="1" name="Bill_Amt_Approved" type="s:double" />
    <s:element minOccurs="0" maxOccurs="1" name="Update_Balance" type="s:int" />
    <s:element minOccurs="0" maxOccurs="1" name="New_Balance_Sequence_Exthost" type="s:long" />
    <s:element minOccurs="0" maxOccurs="1" name="CVV2_Result" type="s:string" />
    <s:element minOccurs="0" maxOccurs="1" name="AvlBalance_GPS_STIP" type="s:double" />
    <s:element minOccurs="0" maxOccurs="1" name="CurBalance_GPS_STIP" type="s:double" />
  </s:all>
</s:complexType>
  </s:schema>
</wsdl:types>
<wsdl:message name="GetTransactionSoapIn">
  <wsdl:part name="parameters" element="tns:GetTransaction" />
</wsdl:message>
<wsdl:message name="GetTransactionSoapOut">
  <wsdl:part name="parameters" element="tns:GetTransactionResponse" />
</wsdl:message>
<wsdl:portType name="Service1Soap">
  <wsdl:operation name="GetTransaction">
    <wsdl:input message="tns:GetTransactionSoapIn" />
    <wsdl:output message="tns:GetTransactionSoapOut" />
  </wsdl:operation>
</wsdl:portType>
<wsdl:binding name="Service1Soap" type="tns:Service1Soap">
  <soap:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <wsdl:operation name="GetTransaction">
    <soap:operation soapAction="http://tempuri.org/GetTransaction" style="document" />
    <wsdl:input>
      <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
      <soap:body use="literal" />
    </wsdl:output>
  </wsdl:operation>
</wsdl:binding>
<wsdl:binding name="Service1Soap12" type="tns:Service1Soap">
  <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <wsdl:operation name="GetTransaction">
    <soap12:operation soapAction="http://tempuri.org/GetTransaction" style="document" />
    <wsdl:input>
      <soap12:body use="literal" />
    </wsdl:input>
    <wsdl:output>
      <soap12:body use="literal" />
    </wsdl:output>
  </wsdl:operation>
</wsdl:binding>
  <wsdl:service name="Service1">
    <wsdl:port name="Service1Soap" binding="tns:Service1Soap">
      <soap:address location="http://localhost:52424/Service1.asmx" />
    </wsdl:port>
    <wsdl:port name="Service1Soap12" binding="tns:Service1Soap12">
      <soap12:address location="http://localhost:52424/Service1.asmx" />
    </wsdl:port>
  </wsdl:service>
</wsdl:definitions>
```

# 3.1.2 Example Authorisations on Mastercard Cards

## Authorisation Request

Below is an example of the HTTP POST body data for a Mastercard authorisation request.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32>0601895</Acquirer_id_DE32>
            <ActBal>0.08</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38> </Auth_Code_DE38>
            <Avl_Bal>-6.95</Avl_Bal>
            <Bill_Amt>-6.95</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>-6.95</BlkAmt>
            <Cust_Ref></Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.20</Fee_Fixed>
            <Fee_Rate>0.30</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5812</MCC_Code>
            <MCC_Desc>Eating Places, Restaurants</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>228284651</Merch_ID_DE42>
            <Merch_Name_DE43>LA FROMAGERIE LIMITED  LONDON        GBR</Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22>071</POS_Data_DE22>
            <POS_Data_DE61>0000010000300826EC2A2AF </POS_Data_DE61>
            <POS_Termnl_DE41>06709994</POS_Termnl_DE41>
            <POS_Time_DE12>140513</POS_Time_DE12>
            <Proc_Code>000000</Proc_Code>
            <Resp_Code_DE39>00</Resp_Code_DE39>
            <Ret_Ref_No_DE37>018210004379</Ret_Ref_No_DE37>
            <Settle_Amt>0.00</Settle_Amt>
            <Settle_Ccy></Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>857264992</Token>
            <Trans_link>160113703254012319</Trans_link>
            <Txn_Amt>11.27</Txn_Amt>
            <Txn_CCy>826</Txn_CCy>
            <Txn_Ctry>GBR</Txn_Ctry>
            <Txn_Desc>LA FROMAGERIE LIMITED  LONDON        GBR</Txn_Desc>
            <Txn_GPS_Date>2016-01-13 14:05:13.747</Txn_GPS_Date>
            <TXn_ID>160113703254012319</TXn_ID>
            <Txn_Stat_Code>A</Txn_Stat_Code>
            <TXN_Time_DE07>0113140513</TXN_Time_DE07>
            <Txn_Type>A</Txn_Type>
            <Additional_Data_DE48>010F610500001</Additional_Data_DE48>
            <Authorised_by_GPS></Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-DX-001</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID>0100</MTID>
            <ProductID>1912</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>98260100</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group >ABC-VL-002</VL_Group >
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.15</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.05</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.29</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.01</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>1812</Expiry_Date>
            <PAN_Sequence_Number>22</PAN_Sequence_Number>
            <PIN>B7A85096C4C5EE23</PIN>
            <PIN_Enc_Algorithm>3DES</PIN_Enc_Algorithm>
            <PIN_Format>1</PIN_Format>
            <PIN_Key_Index>1</PIN_Key_Index>
            <SendingAttemptCount>2</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
            <GPS_POS_Capability>00000000001000000000000100010000000000000011134CR</GPS_POS_Capability>
            <GPS_POS_Data>0170000000000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why></Response_Source_Why>
            <Message_Source></Message_Source>
            <Message_Why></Message_Why>
            <traceid_lifecycle>BNET-20151231-MRG9001AB</traceid_lifecycle>
```

```
            <Balance_Sequence>5999888777</Balance_Sequence>
            <Balance_Sequence_Exthost>93290</Balance_Sequence_Exthost>
            <PaymentToken_id>832483</PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate></PaymentToken_expdate>
            <PaymentToken_type></PaymentToken_type>
            <PaymentToken_status></PaymentToken_status>
            <PaymentToken_creatorStatus></PaymentToken_creatorStatus>
            <PaymentToken_wallet></PaymentToken_wallet>
            <PaymentToken_deviceType></PaymentToken_deviceType>
            <PaymentToken_lang></PaymentToken_lang>
            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
            <PaymentToken_deviceId></PaymentToken_deviceId>
            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod></PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
            <ICC_System_Related_Data_DE55>
9F34030201009F2701809F3501149F0902008C9F3303604000950580800480009F37042E026B2D9F100706010A03A020189F2608A8FA3BA4F95992989F3602002982023C009C-
01019F1A0201709A031602299F02060000400000005F2A020170</ICC_System_Related_Data_DE55>
            <Merch_Name>LA FROMAGERIE LIMITED</Merch_Name>
            <Merch_Street></Merch_Street>
            <Merch_City>LONDON</Merch_City>
            <Merch_Region></Merch_Region>
            <Merch_Postcode>EC2A2AF</Merch_Postcode>
            <Merch_Country>GBR</Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id></Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type>F</auth_type>
            <auth_expdate_utc>2016-01-18 14:05:13.747</auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID></Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID>000403750</Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator>0</DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator></SettlementIndicator>
            <Traceid_Message>BNET-20151231-MRG9001AB</Traceid_Message>
            <Traceid_Original>BNET-20150000-MCC000000</Traceid_Original>
            <Network_Transaction_ID>MRG9001AB1231</Network_Transaction_ID>
            <POS_Date_DE13>2016-01-13</POS_Date_DE13>
            <Network_Currency_Conversion_Date>2016-01-13</Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate>1000000:6</Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
            <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Authorisation Response

Below is an example of HTTP response to the above Authorisation request message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>30.5</CurBalance>
        <AvlBalance>30.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
        <Bill_Amt_Approved>-6.95</Bill_Amt_Approved>
        <Update_Balance>1</Update_Balance>
        <New_Balance_Sequence_Exthost>803492</New_Balance_Sequence_Exthost>
        <CVV2_Result>M</CVV2_Result>
        <AvlBalance_GPS_STIP>20.5</AvlBalance_GPS_STIP>
```

```
        <CurBalance_GPS_STIP>30.5</CurBalance_GPS_STIP>
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

## Authorisation Request (Auth Advice)

Below is an example of the HTTP POST body data for an Authorisation advice message.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32>0601895</Acquirer_id_DE32>
            <ActBal>0.08</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38> </Auth_Code_DE38>
            <Avl_Bal>-6.95</Avl_Bal>
            <Bill_Amt>-6.95</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>-6.95</BlkAmt>
            <Cust_Ref></Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.20</Fee_Fixed>
            <Fee_Rate>0.30</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5812</MCC_Code>
            <MCC_Desc>Eating Places, Restaurants</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>228284651</Merch_ID_DE42>
            <Merch_Name_DE43>LA FROMAGERIE LIMITED  LONDON        GBR</Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22>071</POS_Data_DE22>
            <POS_Data_DE61>0000010000300826EC2A2AF </POS_Data_DE61>
            <POS_Termnl_DE41>06709994</POS_Termnl_DE41>
            <POS_Time_DE12>140513</POS_Time_DE12>
            <Proc_Code>000000</Proc_Code>
            <Resp_Code_DE39>00</Resp_Code_DE39>
            <Ret_Ref_No_DE37>018210004379</Ret_Ref_No_DE37>
            <Settle_Amt>0.00</Settle_Amt>
            <Settle_Ccy></Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>857264992</Token>
            <Trans_link>160113703254012319</Trans_link>
            <Txn_Amt>11.27</Txn_Amt>
            <Txn_CCy>840</Txn_CCy>
            <Txn_Ctry>USA</Txn_Ctry>
            <Txn_Desc>K10 MODERN JAPAN NEWYORK PA </Txn_Desc>
            <Txn_GPS_Date>2016-01-13 14:05:13.747</Txn_GPS_Date>
            <TXn_ID>160113703254012319</TXn_ID>
            <Txn_Stat_Code>A</Txn_Stat_Code>
            <TXN_Time_DE07>0113140513</TXN_Time_DE07>
            <Txn_Type>A</Txn_Type>
            <Additional_Data_DE48>010F610500001</Additional_Data_DE48>
            <Authorised_by_GPS></Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-DX-001</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID>0120</MTID>
            <ProductID>1912</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>98260100</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-002</VL_Group >
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.15</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.05</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.29</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.01</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>1812</Expiry_Date>
            <PAN_Sequence_Number>22</PAN_Sequence_Number>
            <PIN>B7A85096C4C5EE23</PIN>
            <PIN_Enc_Algorithm>3DES</PIN_Enc_Algorithm>
            <PIN_Format>1</PIN_Format>
            <PIN_Key_Index>1</PIN_Key_Index>
            <SendingAttemptCount>2</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
                <GPS_POS_Capability>00000000001000000000000100010000000000000011134CR</GPS_POS_Capability>
            <GPS_POS_Data>0170000000000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source>MC-STIP</Response_Source>
            <Response_Source_Why>5</Response_Source_Why>
```

```
            <Message_Source>MC-STIP</Message_Source>
            <Message_Why>5</Message_Why>
            <traceid_lifecycle>BNET-20151231-MRG9001AB</traceid_lifecycle>
            <Balance_Sequence>5999888777</Balance_Sequence>
            <Balance_Sequence_Exthost>93290</Balance_Sequence_Exthost>
            <PaymentToken_id>832483</PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate></PaymentToken_expdate>
            <PaymentToken_type></PaymentToken_type>
            <PaymentToken_status></PaymentToken_status>
            <PaymentToken_creatorStatus></PaymentToken_creatorStatus>
            <PaymentToken_wallet></PaymentToken_wallet>
            <PaymentToken_deviceType></PaymentToken_deviceType>
            <PaymentToken_lang></PaymentToken_lang>
            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
            <PaymentToken_deviceId></PaymentToken_deviceId>
            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod></PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
            <ICC_System_Related_Data_DE55>
9F34030201009F2701809F3501149F0902008C9F3303604000950580800480009F37042E026B2D9F100706010A03A020189F2608A8FA3BA4F95992989F3602002982023C009C-
01019F1A0201709A031602299F02060000400000005F2A020170</ICC_System_Related_Data_DE55>
            <Merch_Name>LA FROMAGERIE LIMITED</Merch_Name>
            <Merch_Street></Merch_Street>
            <Merch_City>LONDON</Merch_City>
            <Merch_Region></Merch_Region>
            <Merch_Postcode>EC2A2AF</Merch_Postcode>
            <Merch_Country>GBR</Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id></Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type>F</auth_type>
            <auth_expdate_utc>2016-01-18 14:05:13.747</auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID></Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID>000403750</Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator>0</DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator></SettlementIndicator>
            <Traceid_Message>BNET-20151231-MRGA022AB</Traceid_Message>
            <Traceid_Original>BNET-20151231-MRG9001AB</Traceid_Original>
            <Network_Transaction_ID>MRGA022AB1231</Network_Transaction_ID>
            <POS_Date_DE13>2015-12-31</POS_Date_DE13>
            <Network_Currency_Conversion_Date>2015-12-31</Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate>1219730:6</Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
        <Mastercard_AdviceReasonCode_DE60>1020000Accepted</Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Authorisation Response (Auth Advice Response)

Below is an example of HTTP response to the above Authorisation advice message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>30.5</CurBalance>
        <AvlBalance>30.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
        <Bill_Amt_Approved>-6.95</Bill_Amt_Approved>
      </GetTransactionResult>
```

```
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

## Authorisation Request (Payment Token Activation)

Below is an example of the HTTP POST body data for an authorisation request for a payment token activation.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32>06015611</Acquirer_id_DE32>
            <ActBal>0.00</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38>189206</Auth_Code_DE38>
            <Avl_Bal>0.00</Avl_Bal>
            <Bill_Amt>0.00</Bill_Amt>
            <Bill_Ccy>978</Bill_Ccy>
            <BlkAmt>0.00</BlkAmt>
            <Cust_Ref>HM_the_Queen</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5969</MCC_Code>
            <MCC_Desc>Direct Marketing - Other</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>MDES special 01</Merch_ID_DE42>
            <Merch_Name_DE43>Mastercard             St. Louis     MO </Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22>010</POS_Data_DE22>
            <POS_Data_DE61>102510900010084063368</POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>340000</Proc_Code>
            <Resp_Code_DE39>00</Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>0.00</Settle_Amt>
            <Settle_Ccy>978</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>499040929</Token>
            <Trans_link>180228044470015611</Trans_link>
            <Txn_Amt>0.0000</Txn_Amt>
            <Txn_CCy>840</Txn_CCy>
            <Txn_Ctry>USA</Txn_Ctry>
            <Txn_Desc>Mastercard             St. Louis     MO </Txn_Desc>
            <Txn_GPS_Date>2018-02-28 13:14:55.807</Txn_GPS_Date>
            <TXn_ID>2512969074</TXn_ID>
            <Txn_Stat_Code>A</Txn_Stat_Code>
            <TXN_Time_DE07>0228131455</TXN_Time_DE07>
            <Txn_Type>A</Txn_Type>
    <Additional_Data_DE48>038T230221260310333200101C061150110030273</Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>GPS-CU-001</CU_Group>
            <InstCode>GPS</InstCode>
            <MTID>0100</MTID>
            <ProductID>93305</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>51000028</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>GPS-EX-001</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124>048ACD0000172680392393806  18022813441#########3456</Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date></Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN>0</PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
    <GPS_POS_Capability>0100001000000000000000100100000000000000230010</GPS_POS_Capability>
            <GPS_POS_Data>5018000800000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
            <Message_Source></Message_Source>
            <Message_Why>0</Message_Why>
            <traceid_lifecycle>BNET-20180228-MTP13REG5</traceid_lifecycle>
```

```
      <Balance_Sequence>0</Balance_Sequence>
      <Balance_Sequence_Exthost>0</Balance_Sequence_Exthost>
      <PaymentToken_id>58621</PaymentToken_id>
      <PaymentToken_creator>MC-MDES</PaymentToken_creator>
      <PaymentToken_expdate></PaymentToken_expdate>
      <PaymentToken_type>SE</PaymentToken_type>
      <PaymentToken_status>00</PaymentToken_status>
      <PaymentToken_creatorStatus> </PaymentToken_creatorStatus>
      <PaymentToken_wallet>APPLE</PaymentToken_wallet>
      <PaymentToken_deviceType>U</PaymentToken_deviceType>
      <PaymentToken_lang>  </PaymentToken_lang>
      <PaymentToken_deviceTelNum>5935</PaymentToken_deviceTelNum>
      <PaymentToken_deviceIp>1FDC469E</PaymentToken_deviceIp>
      <PaymentToken_deviceId>04181013B72B8001431510767593277 8BEBF83E6DF785407</PaymentToken_deviceId>
      <PaymentToken_deviceName></PaymentToken_deviceName>
<PaymentToken_activationCode>393805</PaymentToken_activationCode>
<PaymentToken_activationExpiry>2018-02-28 13:44:00.000</PaymentToken_activationExpiry>
<PaymentToken_activationMethod>1</PaymentToken_activationMethod>
<PaymentToken_activationMethodData>+447777123456</PaymentToken_activationMethodData>
      <ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
      <Merch_Name>Mastercard</Merch_Name>
      <Merch_Street></Merch_Street>
      <Merch_City>St. Louis</Merch_City>
      <Merch_Region>MO</Merch_Region>
      <Merch_Postcode>63368</Merch_Postcode>
      <Merch_Country>USA</Merch_Country>
      <Merch_Tel></Merch_Tel>
      <Merch_URL></Merch_URL>
      <Merch_Name_Other></Merch_Name_Other>
      <Merch_Net_id></Merch_Net_id>
      <Merch_Tax_id></Merch_Tax_id>
      <Merch_Contact></Merch_Contact>
      <auth_type>F</auth_type>
            <auth_expdate_utc>2016-01-18 14:05:13.747</auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID></Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID>000403750</Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator>0</DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator></SettlementIndicator>
            <Traceid_Message>BNET-20180228-MTP13REG5</Traceid_Message>
            <Traceid_Original></Traceid_Original>
            <Network_Transaction_ID>MTP13REG50228</Network_Transaction_ID>
            <POS_Date_DE13>2016-01-18</POS_Date_DE13>
            <Network_Currency_Conversion_Date>2016-01-18</Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate>9229970:7</Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
            <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope
```

# 3.1.3 Example Authorisations on Visa Cards

## Authorisation Request

Below is an example of the HTTP POST body data for a Visa authorisation request:

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_ID_DE32>06454818</Acquirer_ID_DE32>
            <ActBal>0.00</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38>171675</Auth_Code_DE38>
            <Avl_Bal>0.00</Avl_Bal>
            <Bill_Amt>-21.79</Bill_Amt>
            <Bill_Ccy>978</Bill_Ccy>
            <BlkAmt>0.00</BlkAmt>
            <Cust_Ref>2a3267b1-1cf2-4bfb-94f3-a</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5411</MCC_Code>
            <MCC_Desc>Grocery Stores, Supermarkets</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>600303143</Merch_ID_DE42>
            <Merch_Name_DE43>MPREIS FIL 8165          KIRCHBERG    AT</Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22>0510</POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41>28003097</POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>000000</Proc_Code>
            <Resp_Code_DE39>00</Resp_Code_DE39>
            <Ret_Ref_No_DE37>003516919210</Ret_Ref_No_DE37>
            <Settle_Amt>21.79</Settle_Amt>
            <Settle_Ccy>978</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>133162776</Token>
            <Trans_link>200204919210454818</Trans_link>
            <Txn_Amt>21.7900</Txn_Amt>
            <Txn_CCy>978</Txn_CCy>
            <Txn_Ctry>AUT</Txn_Ctry>
            <Txn_Desc>MPREIS FIL 8165          KIRCHBERG    AT</Txn_Desc>
            <Txn_GPS_Date>2020-02-04 16:23:48.970</Txn_GPS_Date>
            <Txn_ID>5008972622</Txn_ID>
            <Txn_Stat_Code>A</Txn_Stat_Code>
            <Txn_Time_DE07>0204162349</Txn_Time_DE07>
            <Txn_Type>A</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result>Z</AVS_Result>
            <CU_Group>ABC-CU-003</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID>0100</MTID>
            <ProductID>2613</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>45965480</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-003</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>2411</Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN>0</PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
<GPS_POS_Capability>00001001000000000000000100010011000000000001130C0</GPS_POS_Capability>
            <GPS_POS_Data>0155000400000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
            <Message_Source></Message_Source>
            <Message_Why>0</Message_Why>
            <traceid_lifecycle>VIS1-20200204-480035590280708</traceid_lifecycle>
```

```
            <Balance_Sequence>0</Balance_Sequence>
            <Balance_Sequence_Exthost>0</Balance_Sequence_Exthost>
            <PaymentToken_id>9001921</PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate>2023-12-31 00:00:00.000</PaymentToken_expdate>
            <PaymentToken_type>SE</PaymentToken_type>
            <PaymentToken_status>00</PaymentToken_status>
            <PaymentToken_creatorStatus>A</PaymentToken_creatorStatus>
            <PaymentToken_wallet></PaymentToken_wallet>
            <PaymentToken_deviceType></PaymentToken_deviceType>
            <PaymentToken_lang>  </PaymentToken_lang>
            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
            <PaymentToken_deviceId></PaymentToken_deviceId>
            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod>0</PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
<ICC_System_Related_Data_DE55>
5F2D02656E9F0902008C9F2701809F34030103029F3501229F4104001147309F330360F0C895050080008000 9F370481E32F699F100706010A03A420029F2608EC0C10AA9E94-
45699F360201F282023C009C01009F1A0200409A032002049F02060000000021795F2A0209789F030600000000000008407A0000000031010</ICC_System_Related_Data_
DE55>
            <Merch_Name>MPREIS FIL 8165</Merch_Name>
            <Merch_Street></Merch_Street>
            <Merch_City>KIRCHBERG</Merch_City>
            <Merch_Region></Merch_Region>
            <Merch_Postcode></Merch_Postcode>
            <Merch_Country>AUT</Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id></Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type>0</auth_type>
            <auth_expdate_utc>2020-02-18 16:23:48.970</auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID></Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID>499999</Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator> </DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator></SettlementIndicator>
            <Traceid_Message>VIS1-20200121-460021041539494</Traceid_Message>
            <Traceid_Original>VIS1-20200101-460001041538765</Traceid_Original>
            <Network_Transaction_ID></Network_Transaction_ID>
            <POS_Date_DE13>2016-01-13</POS_Date_DE13>
            <Network_Currency_Conversion_Date>2016-01-13</Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate>1000000:6</Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44>    2   2</Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60>950000130000</Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
            <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Authorisation Response

Below is an example of HTTP response to the above Authorisation request message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>30.5</CurBalance>
        <AvlBalance>30.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
        <Bill_Amt_Approved>-6.95</Bill_Amt_Approved>
        <Update_Balance>1</Update_Balance>
        <New_Balance_Sequence_Exthost>803492</New_Balance_Sequence_Exthost>
        <CVV2_Result>M</CVV2_Result>
```

```
        <AvlBalance_GPS_STIP>20.5</AvlBalance_GPS_STIP>
        <CurBalance_GPS_STIP>30.5</CurBalance_GPS_STIP>
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

## Authorisation Request (Auth Advice)

Below is an example of the HTTP POST body data for an authorisation advice.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32>06401895</Acquirer_id_DE32>
            <ActBal>0.08</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38> </Auth_Code_DE38>
            <Avl_Bal>-6.95</Avl_Bal>
            <Bill_Amt>-6.95</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>-6.95</BlkAmt>
            <Cust_Ref></Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.20</Fee_Fixed>
            <Fee_Rate>0.30</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5542</MCC_Code>
            <MCC_Desc>Automated Fuel Dispenser</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>*32387556700014</Merch_ID_DE42>
            <Merch_Name_DE43>LECLERC STATION          AUXERRE      FR</Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22>0510</POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41>06709994</POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>000000</Proc_Code>
            <Resp_Code_DE39>00</Resp_Code_DE39>
            <Ret_Ref_No_DE37>015400005868</Ret_Ref_No_DE37>
            <Settle_Amt>0.00</Settle_Amt>
            <Settle_Ccy></Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>857264992</Token>
            <Trans_link>200602005868453310</Trans_link>
            <Txn_Amt>43.11</Txn_Amt>
            <Txn_CCy>978</Txn_CCy>
            <Txn_Ctry>FRA</Txn_Ctry>
            <Txn_Desc>LECLERC STATION          AUXERRE      FR</Txn_Desc>
            <Txn_GPS_Date>2020-06-02 01:07:04.723</Txn_GPS_Date>
            <TXn_ID>5677241935</TXn_ID>
            <Txn_Stat_Code>A</Txn_Stat_Code>
            <TXN_Time_DE07>0602000102</TXN_Time_DE07>
            <Txn_Type>J</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-DX-001</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID>0120</MTID>
            <ProductID>1912</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>44444444</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-002</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.15</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.05</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.29</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.01</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>1812</Expiry_Date>
            <PAN_Sequence_Number>22</PAN_Sequence_Number>
            <PIN></PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>2</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
<GPS_POS_Capability>0000100100000000000000010001001100000000000001130C0</GPS_POS_Capability>
            <GPS_POS_Data>0155000400000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source>ISSUER</Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
```

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            <Message_Source>ACQUIRER</Message_Source>
            <Message_Why>34</Message_Why>
            <traceid_lifecycle>VIS1-20200602-480154000635968</traceid_lifecycle>
            <Balance_Sequence>5999888777</Balance_Sequence>
            <Balance_Sequence_Exthost>93290</Balance_Sequence_Exthost>
            <PaymentToken_id></PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate></PaymentToken_expdate>
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            <PaymentToken_status></PaymentToken_status>
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            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
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            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod></PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
            <ICC_System_Related_Data_DE55>
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01019F1A0201709A031602299F02060000400000005F2A020170</ICC_System_Related_Data_DE55>
            <Merch_Name> LECLERC STATION</Merch_Name>
            <Merch_Street></Merch_Street>
            <Merch_City> AUXERRE</Merch_City>
            <Merch_Region></Merch_Region>
            <Merch_Postcode></Merch_Postcode>
            <Merch_Country>FRA</Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id></Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type>F</auth_type>
            <auth_expdate_utc>2016-01-18 14:05:13.747</auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID>2104</Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID>000403750</Acquirer_Forwarder_ID>
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            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator>0</DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator></SettlementIndicator>
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            <Traceid_Original>BNET-20151231-MRG9001AB</Traceid_Original>
            <Network_Transaction_ID></Network_Transaction_ID>
            <POS_Date_DE13>2015-12-31</POS_Date_DE13>
            <Network_Currency_Conversion_Date>2015-12-31</Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate>1219730:6</Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
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            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
        <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Authorisation Response (Auth Advice Response)

Below is an example of HTTP response to the above Authorisation advice message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>30.5</CurBalance>
        <AvlBalance>30.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
        <Bill_Amt_Approved>-6.95</Bill_Amt_Approved>
      </GetTransactionResult>
```

```
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

## Authorisation Request (Payment Token Activation)

Below is an example of the HTTP POST body data for an authorisation request for a payment token activation.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32>06015611</Acquirer_id_DE32>
            <ActBal>0.00</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38>189206</Auth_Code_DE38>
            <Avl_Bal>0.00</Avl_Bal>
            <Bill_Amt>0.00</Bill_Amt>
            <Bill_Ccy>978</Bill_Ccy>
            <BlkAmt>0.00</BlkAmt>
            <Cust_Ref>HM_the_Queen</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5969</MCC_Code>
            <MCC_Desc>Direct Marketing - Other</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>MDES special 01</Merch_ID_DE42>
            <Merch_Name_DE43>Mastercard             St. Louis     MO </Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22>010</POS_Data_DE22>
            <POS_Data_DE61>102510900010084063368</POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>340000</Proc_Code>
            <Resp_Code_DE39>00</Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>0.00</Settle_Amt>
            <Settle_Ccy>978</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>499040929</Token>
            <Trans_link>180228044470015611</Trans_link>
            <Txn_Amt>0.0000</Txn_Amt>
            <Txn_CCy>840</Txn_CCy>
            <Txn_Ctry>USA</Txn_Ctry>
            <Txn_Desc>Mastercard             St. Louis     MO </Txn_Desc>
            <Txn_GPS_Date>2018-02-28 13:14:55.807</Txn_GPS_Date>
            <TXn_ID>2512969074</TXn_ID>
            <Txn_Stat_Code>A</Txn_Stat_Code>
            <TXN_Time_DE07>0228131455</TXN_Time_DE07>
            <Txn_Type>A</Txn_Type>
<Additional_Data_DE48>038T230221260310333200101C061150110030273</Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>GPS-CU-001</CU_Group>
            <InstCode>GPS</InstCode>
            <MTID>0100</MTID>
            <ProductID>93305</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>51000028</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>GPS-EX-001</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124>048ACD0000172680392393806  18022813441#########3456</Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date></Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN>0</PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
<GPS_POS_Capability>0100001000000000000000100100000000000000230010</GPS_POS_Capability>
            <GPS_POS_Data>5018000800000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
            <Message_Source></Message_Source>
            <Message_Why>0</Message_Why>
```

```
      <traceid_lifecycle>BNET-20180228-MTP13REG5</traceid_lifecycle>
      <Balance_Sequence>0</Balance_Sequence>
      <Balance_Sequence_Exthost>0</Balance_Sequence_Exthost>
      <PaymentToken_id>58621</PaymentToken_id>
      <PaymentToken_creator>MC-MDES</PaymentToken_creator>
      <PaymentToken_expdate></PaymentToken_expdate>
      <PaymentToken_type>SE</PaymentToken_type>
      <PaymentToken_status>00</PaymentToken_status>
      <PaymentToken_creatorStatus> </PaymentToken_creatorStatus>
      <PaymentToken_wallet>APPLE</PaymentToken_wallet>
      <PaymentToken_deviceType>U</PaymentToken_deviceType>
      <PaymentToken_lang>  </PaymentToken_lang>
      <PaymentToken_deviceTelNum>5935</PaymentToken_deviceTelNum>
      <PaymentToken_deviceIp>1FDC469E</PaymentToken_deviceIp>
      <PaymentToken_deviceId>04181013B72B8001431510767593277 8BEBF83E6DF785407</PaymentToken_deviceId>
      <PaymentToken_deviceName></PaymentToken_deviceName>
<PaymentToken_activationCode>393805</PaymentToken_activationCode>
<PaymentToken_activationExpiry>2018-02-28 13:44:00.000</PaymentToken_activationExpiry>
<PaymentToken_activationMethod>1</PaymentToken_activationMethod>
<PaymentToken_activationMethodData>+447777123456</PaymentToken_activationMethodData>
      <ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
      <Merch_Name>Mastercard</Merch_Name>
      <Merch_Street></Merch_Street>
      <Merch_City>St. Louis</Merch_City>
      <Merch_Region>MO</Merch_Region>
      <Merch_Postcode>63368</Merch_Postcode>
      <Merch_Country>USA</Merch_Country>
      <Merch_Tel></Merch_Tel>
      <Merch_URL></Merch_URL>
      <Merch_Name_Other></Merch_Name_Other>
      <Merch_Net_id></Merch_Net_id>
      <Merch_Tax_id></Merch_Tax_id>
      <Merch_Contact></Merch_Contact>
      <auth_type>F</auth_type>
      <auth_expdate_utc>2016-01-18 14:05:13.747</auth_expdate_utc>
      <Matching_Txn_ID></Matching_Txn_ID>
      <Reason_ID></Reason_ID>
      <Dispute_Condition></Dispute_Condition>
      <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
      <Acquirer_Forwarder_ID>000403750</Acquirer_Forwarder_ID>
      <Currency_Code_Fee></Currency_Code_Fee>
      <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
      <Interchange_Amount_Fee></Interchange_Amount_Fee>
      <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
      <Clearing_Process_Date></Clearing_Process_Date>
      <Settlement_Date></Settlement_Date>
      <DCC_Indicator>0</DCC_Indicator>
      <multi_part_txn></multi_part_txn>
      <multi_part_txn_final></multi_part_txn_final>
      <multi_part_number></multi_part_number>
      <multi_part_count></multi_part_count>
      <SettlementIndicator></SettlementIndicator>
      <Traceid_Message>BNET-20180228-MTP13REG5</Traceid_Message>
      <Traceid_Original></Traceid_Original>
      <Network_Transaction_ID></Network_Transaction_ID>
      <POS_Date_DE13>2016-01-18</POS_Date_DE13>
      <Network_Currency_Conversion_Date>2016-01-18</Network_Currency_Conversion_Date>
      <Network_TxnAmt_To_BillAmt_Rate>9229970:7</Network_TxnAmt_To_BillAmt_Rate>
      <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
      <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
      <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
      <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
      <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
      <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
      <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
      <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
      <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
      <Misc_TLV_Data></Misc_TLV_Data>
    </GetTransaction>
  </s:Body>
</s:Envelope>
```

# 3.1.4 Example Financial Messages

## Financial Request

Below is an example of the HTTP POST body data for a financial request.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32>00000519988</Acquirer_id_DE32>
            <ActBal>0.00</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38>874223</Auth_Code_DE38>
            <Avl_Bal>0.00</Avl_Bal>
            <Bill_Amt>149.00</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>0.00</BlkAmt>
            <Cust_Ref>01234567</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.40</Fee_Fixed>
            <Fee_Rate>0.50</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code>5999</MCC_Code>
            <MCC_Desc>Miscellaneous Specialty Retail</MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42>06733973 </Merch_ID_DE42>
            <Merch_Name_DE43>SNOW ROCK\47-51 KING WILLIAM STREET\LONDON EC4R\EC4R 9AF GBRGBR</Merch_Name_DE43>
            <Note> Refund</Note>
            <POS_Data_DE22>C19101C54341</POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41>00000028</POS_Termnl_DE41>
            <POS_Time_DE12>160227000000</POS_Time_DE12>
            <Proc_Code>200000</Proc_Code>
            <Resp_Code_DE39></Resp_Code_DE39>
            <Ret_Ref_No_DE37> &#x20;</Ret_Ref_No_DE37>
            <Settle_Amt>149.00</Settle_Amt>
            <Settle_Ccy>826</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>830122936</Token>
            <Trans_link>97723910</Trans_link>
            <Txn_Amt>149.0000</Txn_Amt>
            <Txn_CCy>826</Txn_CCy>
            <Txn_Ctry>GBR</Txn_Ctry>
            <Txn_Desc>SNOW ROCK\47-51 KING WILLIAM STREET\LONDON EC4R\EC4R 9AF GBRGBR</Txn_Desc>
            <Txn_GPS_Date>2016-02-29 07:49:16.920</Txn_GPS_Date>
            <TXn_ID>97723910</TXn_ID>
            <Txn_Stat_Code>S</Txn_Stat_Code>
            <TXN_Time_DE07></TXN_Time_DE07>
            <Txn_Type>P</Txn_Type>
<Additional_Data_DE48>
0002003MRW0003003MRW0023003POI0146036001901826000000000004826000000000004014704800190182600000000000040000826000000000000400000148004826 20-
158030MCC4826001751602290 1MRWNNNNNNN015906787894 0091585000 1EU00000012N160229011602290101650 01M0177002N 01910012</Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-CU-007</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID>1240</MTID>
            <ProductID>1883</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>51483300</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-002</VL_Group>
            <Dom_Fee_Fixed>0.40</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.50</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>1812</Expiry_Date>
            <PAN_Sequence_Number>22</PAN_Sequence_Number>
            <PIN>0</PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount></SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
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            <GPS_POS_Data>0155000400000Nx000</GPS_POS_Data>
            <Acquirer_Reference_Data_031>74929016366123456789018</Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why></Response_Source_Why>
            <Message_Source></Message_Source>
```

```
            <Message_Why></Message_Why>
            <traceid_lifecycle>BNET-20151231-MRG9001RR</traceid_lifecycle>
            <Balance_Sequence></Balance_Sequence>
            <Balance_Sequence_Exthost></Balance_Sequence_Exthost>
            <PaymentToken_id></PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate></PaymentToken_expdate>
            <PaymentToken_type></PaymentToken_type>
            <PaymentToken_status></PaymentToken_status>
            <PaymentToken_creatorStatus></PaymentToken_creatorStatus>
            <PaymentToken_wallet></PaymentToken_wallet>
            <PaymentToken_deviceType></PaymentToken_deviceType>
            <PaymentToken_lang></PaymentToken_lang>
            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
            <PaymentToken_deviceId></PaymentToken_deviceId>
            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod></PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
            <ICC_System_Related_Data_DE55>
9F34030201009F2701809F3501149F0902008C9F3303604000950580800480009F37042E026B2D9F100706010A03A020189F2608A8FA3BA4F95992989F3602002982023C009C-
01019F1A0201709A031602299F02060000400000005F2A020170</ICC_System_Related_Data_DE55>
            <Merch_Name>SNOW ROCK</Merch_Name>
            <Merch_Street>47-51 KING WILLIAM STREET</Merch_Street>
            <Merch_City>LONDON EC4R</Merch_City>
            <Merch_Region>GBR</Merch_Region>
            <Merch_Postcode>EC4R 9AF</Merch_Postcode>
            <Merch_Country>GBR</Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id></Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type>F</auth_type>
            <auth_expdate_utc>2016-01-18 14:05:13.747</auth_expdate_utc>
            <Matching_Txn_ID>96883105</Matching_Txn_ID>
            <Reason_ID></Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID>000403750</Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement>826</Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee>00.010000</Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement>00.010000</Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date>2016-01-19</Clearing_Process_Date>
            <Settlement_Date>2016-01-19</Settlement_Date>
            <DCC_Indicator>0</DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator>0</SettlementIndicator>
            <Traceid_Message>BNET-20151231-MRG9001RR</Traceid_Message>
            <Traceid_Original></Traceid_Original>
            <Network_Transaction_ID></Network_Transaction_ID>
            <POS_Date_DE13>2016-02-27</POS_Date_DE13>
            <Network_Currency_Conversion_Date></Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate>100000:5</Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID>017059</Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
            <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Financial Response

Below is an example of HTTP response to the above Financial Request message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>0.5</CurBalance>
        <AvlBalance>0.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
```

```
</soap:Envelope>
```

# Example Load Message

Load messages are information that a Load has already happened (i.e. it is not happening at the time, and you cannot decline it. It is an advice..).

## Load Request

Below is an example of the HTTP POST body data for a Load request.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32></Acquirer_id_DE32>
            <ActBal>27.23</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38></Auth_Code_DE38>
            <Avl_Bal>6.03</Avl_Bal>
            <Bill_Amt>5.00</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>-21.20</BlkAmt>
            <Cust_Ref>74901368</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC>12</LoadSRC>
            <LoadType>2</LoadType>
            <MCC_Code></MCC_Code>
            <MCC_Desc></MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42></Merch_ID_DE42>
            <Merch_Name_DE43></Merch_Name_DE43>
            <Note>Web service load by – THE BEE GEES, Source - 155.195.9.125, Date - Oct 30 2015  6:43PM</Note>
            <POS_Data_DE22></POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>220000</Proc_Code>
            <Resp_Code_DE39></Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>5.00</Settle_Amt>
            <Settle_Ccy>826</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>938065873</Token>
            <Trans_link>76291418</Trans_link>
            <Txn_Amt>5.0000</Txn_Amt>
            <Txn_CCy>826</Txn_CCy>
            <Txn_Ctry>GBR</Txn_Ctry>
            <Txn_Desc>Load</Txn_Desc>
            <Txn_GPS_Date>2015-10-30 18:43:30.327</Txn_GPS_Date>
            <TXn_ID>68051418</TXn_ID>
            <Txn_Stat_Code>S</Txn_Stat_Code>
            <TXN_Time_DE07></TXN_Time_DE07>
            <Txn_Type>L</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-CU-010</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID></MTID>
            <ProductID>598</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>59442100</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-007</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>0</Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN></PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
            <GPS_POS_Capability></GPS_POS_Capability>
```

```
<GPS_POS_Data></GPS_POS_Data>
<Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
<Response_Source></Response_Source>
<Response_Source_Why>0</Response_Source_Why>
<Message_Source></Message_Source>
<Message_Why>0</Message_Why>
<traceid_lifecycle></traceid_lifecycle>
<Balance_Sequence></Balance_Sequence>
<Balance_Sequence_Exthost></Balance_Sequence_Exthost>
<PaymentToken_id>0</PaymentToken_id>
<PaymentToken_creator></PaymentToken_creator>
<PaymentToken_expdate></PaymentToken_expdate>
<PaymentToken_type></PaymentToken_type>
<PaymentToken_status></PaymentToken_status>
<PaymentToken_creatorStatus> </PaymentToken_creatorStatus>
<PaymentToken_wallet></PaymentToken_wallet>
<PaymentToken_deviceType></PaymentToken_deviceType>
<PaymentToken_lang>  </PaymentToken_lang>
<PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
<PaymentToken_deviceIp></PaymentToken_deviceIp>
<PaymentToken_deviceId></PaymentToken_deviceId>
<PaymentToken_deviceName></PaymentToken_deviceName>
<PaymentToken_activationCode></PaymentToken_activationCode>
<PaymentToken_activationExpiry></PaymentToken_activationExpiry>
<PaymentToken_activationMethod>0</PaymentToken_activationMethod>
<PaymentToken_activationMethodData></PaymentToken_activationMethodData>
<ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
<Merch_Name></Merch_Name>
<Merch_Street></Merch_Street>
<Merch_City></Merch_City>
<Merch_Region></Merch_Region>
<Merch_Postcode></Merch_Postcode>
<Merch_Country></Merch_Country>
<Merch_Tel></Merch_Tel>
<Merch_URL></Merch_URL>
<Merch_Name_Other></Merch_Name_Other>
<Merch_Net_id></Merch_Net_id>
<Merch_Tax_id>0</Merch_Tax_id>
<Merch_Contact></Merch_Contact>
<auth_type></auth_type>
<auth_expdate_utc></auth_expdate_utc>
<Matching_Txn_ID></Matching_Txn_ID>
<Reason_ID></Reason_ID>
<Dispute_Condition></Dispute_Condition>
<Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
<Acquirer_Forwarder_ID></Acquirer_Forwarder_ID>
<Currency_Code_Fee></Currency_Code_Fee>
<Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
<Interchange_Amount_Fee></Interchange_Amount_Fee>
<Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
<Clearing_Process_Date></Clearing_Process_Date>
<Settlement_Date></Settlement_Date>
<DCC_Indicator>0</DCC_Indicator>
<multi_part_txn></multi_part_txn>
<multi_part_txn_final></multi_part_txn_final>
<multi_part_number></multi_part_number>
<multi_part_count></multi_part_count>
<SettlementIndicator>0</SettlementIndicator>
<Traceid_Message></Traceid_Message>
<Traceid_Original></Traceid_Original>
<Network_Transaction_ID></Network_Transaction_ID>
<POS_Date_DE13></POS_Date_DE13>
<Network_Currency_Conversion_Date></Network_Currency_Conversion_Date>
<Network_TxnAmt_To_BillAmt_Rate></Network_TxnAmt_To_BillAmt_Rate>
<Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
<Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
<Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
<Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
<Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
<Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
<Visa_POS_Data_DE60></Visa_POS_Data_DE60>
<Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
<Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
<Misc_TLV_Data></Misc_TLV_Data>
</GetTransaction>
</s:Body>
</s:Envelope>
```

## Load Response

Below is an example of HTTP response to the above Load Request message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>0.5</CurBalance>
        <AvlBalance>0.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
```

```
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

# 3.1.5 Example Balance Adjustment Message

Balance adjustment messages are information that a Balance Adjustment has already happened  (i.e. it is not happening at the moment, and you cannot decline it.  It is an advice).

## Balance Adjustment Request

Below is an example of the HTTP POST body data for a balance adjustment notification.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32></Acquirer_id_DE32>
            <ActBal>12.14</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38></Auth_Code_DE38>
            <Avl_Bal>12.14</Avl_Bal>
            <Bill_Amt>10.00</Bill_Amt>
            <Bill_Ccy>978</Bill_Ccy>
            <BlkAmt>0.00</BlkAmt>
            <Cust_Ref>8291</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code></MCC_Code>
            <MCC_Desc></MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42></Merch_ID_DE42>
            <Merch_Name_DE43></Merch_Name_DE43>
            <Note>GEN: Test Adjustment  User - Keren.Woodward Date - 04.12.2015 14:16:17</Note>
            <POS_Data_DE22></POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>021000</Proc_Code>
            <Resp_Code_DE39></Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>10.00</Settle_Amt>
            <Settle_Ccy>978</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>947748195</Token>
            <Trans_link>80459351</Trans_link>
            <Txn_Amt>10.0000</Txn_Amt>
            <Txn_CCy>978</Txn_CCy>
            <Txn_Ctry></Txn_Ctry>
            <Txn_Desc>Goodwill Credit</Txn_Desc>
            <Txn_GPS_Date>2015-12-04 12:16:21.520</Txn_GPS_Date>
            <TXn_ID>80459351</TXn_ID>
            <Txn_Stat_Code>S</Txn_Stat_Code>
            <TXN_Time_DE07></TXN_Time_DE07>
            <Txn_Type>B</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-CU-001</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID></MTID>
            <ProductID>1512</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>59833440</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-002</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>0</Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN></PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
            <GPS_POS_Capability></GPS_POS_Capability>
            <GPS_POS_Data></GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
```

```
<Response_Source></Response_Source>
<Response_Source_Why>0</Response_Source_Why>
<Message_Source></Message_Source>
<Message_Why>0</Message_Why>
<traceid_lifecycle></traceid_lifecycle>
<Balance_Sequence></Balance_Sequence>
<Balance_Sequence_Exthost></Balance_Sequence_Exthost>
<PaymentToken_id>0</PaymentToken_id>
<PaymentToken_creator></PaymentToken_creator>
<PaymentToken_expdate></PaymentToken_expdate>
<PaymentToken_type></PaymentToken_type>
<PaymentToken_status></PaymentToken_status>
<PaymentToken_creatorStatus> </PaymentToken_creatorStatus>
<PaymentToken_wallet></PaymentToken_wallet>
<PaymentToken_deviceType></PaymentToken_deviceType>
<PaymentToken_lang>  </PaymentToken_lang>
<PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
<PaymentToken_deviceIp></PaymentToken_deviceIp>
<PaymentToken_deviceId></PaymentToken_deviceId>
<PaymentToken_deviceName></PaymentToken_deviceName>
<PaymentToken_activationCode></PaymentToken_activationCode>
<PaymentToken_activationExpiry></PaymentToken_activationExpiry>
<PaymentToken_activationMethod>0</PaymentToken_activationMethod>
<PaymentToken_activationMethodData></PaymentToken_activationMethodData>
<ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
<Merch_Name></Merch_Name>
<Merch_Street></Merch_Street>
<Merch_City></Merch_City>
<Merch_Region></Merch_Region>
<Merch_Postcode></Merch_Postcode>
<Merch_Country></Merch_Country>
<Merch_Tel></Merch_Tel>
<Merch_URL></Merch_URL>
<Merch_Name_Other></Merch_Name_Other>
<Merch_Net_id></Merch_Net_id>
<Merch_Tax_id>0</Merch_Tax_id>
<Merch_Contact></Merch_Contact>
<auth_type></auth_type>
<auth_expdate_utc></auth_expdate_utc>
<Matching_Txn_ID></Matching_Txn_ID>
<Reason_ID></Reason_ID>
<Dispute_Condition></Dispute_Condition>
<Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
<Acquirer_Forwarder_ID></Acquirer_Forwarder_ID>
<Currency_Code_Fee></Currency_Code_Fee>
<Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
<Interchange_Amount_Fee></Interchange_Amount_Fee>
<Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
<Clearing_Process_Date></Clearing_Process_Date>
<Settlement_Date></Settlement_Date>
<DCC_Indicator>0</DCC_Indicator>
<multi_part_txn></multi_part_txn>
<multi_part_txn_final></multi_part_txn_final>
<multi_part_number></multi_part_number>
<multi_part_count></multi_part_count>
<SettlementIndicator>0</SettlementIndicator>
<Traceid_Message></Traceid_Message>
<Traceid_Original></Traceid_Original>
<Network_Transaction_ID></Network_Transaction_ID>
<POS_Date_DE13></POS_Date_DE13>
<Network_Currency_Conversion_Date></Network_Currency_Conversion_Date>
<Network_TxnAmt_To_BillAmt_Rate></Network_TxnAmt_To_BillAmt_Rate>
<Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
<Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
<Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
<Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
<Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
<Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
<Visa_POS_Data_DE60></Visa_POS_Data_DE60>
<Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
<Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Balance Adjustment Response

Below is an example of HTTP response to the above Balance Adjustment notification message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>0.5</CurBalance>
        <AvlBalance>0.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
      </GetTransactionResult>
    </GetTransactionResponse>
```

```
  </soap:Body>
</soap:Envelope>
```

# 3.1.6 Example Payment Message

Payment messages are information that a Payment has already happened  (i.e. it is not happening at the moment, and you cannot decline it.  It is an advice.).

## Payment Request

Below is an example of the HTTP POST body data for a payment advice notification.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32></Acquirer_id_DE32>
            <ActBal>46.65</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38></Auth_Code_DE38>
            <Avl_Bal>6.03</Avl_Bal>
            <Bill_Amt>5.00</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>-21.20</BlkAmt>
            <Cust_Ref>74901368</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC>64</LoadSRC>
            <LoadType>0</LoadType>
            <MCC_Code></MCC_Code>
            <MCC_Desc></MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42></Merch_ID_DE42>
            <Merch_Name_DE43></Merch_Name_DE43>
            <Note>404157 00455571 100 BACS      </Note>
            <POS_Data_DE22></POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>290000</Proc_Code>
            <Resp_Code_DE39></Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>5.00</Settle_Amt>
            <Settle_Ccy>826</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>938065873</Token>
            <Trans_link>76291418</Trans_link>
            <Txn_Amt>5.0000</Txn_Amt>
            <Txn_CCy>826</Txn_CCy>
            <Txn_Ctry>GBR</Txn_Ctry>
            <Txn_Desc>Payment</Txn_Desc>
            <Txn_GPS_Date>2016-03-10 11:33:13.103</Txn_GPS_Date>
            <TXn_ID>68051418</TXn_ID>
            <Txn_Stat_Code>S</Txn_Stat_Code>
            <TXN_Time_DE07></TXN_Time_DE07>
            <Txn_Type>G</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-CU-010</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID></MTID>
            <ProductID>598</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>59442100</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-007</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>0</Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN></PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry>GBR</source_bank_ctry>
            <source_bank_account_format>GBR</source_bank_account_format>
            <source_bank_account>601613 31926819</source_bank_account>
            <dest_bank_ctry>GRC</dest_bank_ctry>
            <dest_bank_account_format>IBAN</dest_bank_account_format>
            <dest_bank_account> GR1601101250000000012300695</dest_bank_account>
<GPS_POS_Capability>                                                    </GPS_POS_Capability>
            <GPS_POS_Data>               000</GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
```

```
<Message_Source></Message_Source>
<Message_Why>0</Message_Why>
<traceid_lifecycle></traceid_lifecycle>
<Balance_Sequence></Balance_Sequence>
<Balance_Sequence_Exthost></Balance_Sequence_Exthost>
<PaymentToken_id>0</PaymentToken_id>
<PaymentToken_creator></PaymentToken_creator>
<PaymentToken_expdate></PaymentToken_expdate>
<PaymentToken_type></PaymentToken_type>
<PaymentToken_status></PaymentToken_status>
<PaymentToken_creatorStatus> </PaymentToken_creatorStatus>
<PaymentToken_wallet></PaymentToken_wallet>
<PaymentToken_deviceType></PaymentToken_deviceType>
<PaymentToken_lang>  </PaymentToken_lang>
<PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
<PaymentToken_deviceIp></PaymentToken_deviceIp>
<PaymentToken_deviceId></PaymentToken_deviceId>
<PaymentToken_deviceName></PaymentToken_deviceName>
<PaymentToken_activationCode></PaymentToken_activationCode>
<PaymentToken_activationExpiry></PaymentToken_activationExpiry>
<PaymentToken_activationMethod>0</PaymentToken_activationMethod>
<PaymentToken_activationMethodData></PaymentToken_activationMethodData>
<ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
<Merch_Name></Merch_Name>
<Merch_Street></Merch_Street>
<Merch_City></Merch_City>
<Merch_Region></Merch_Region>
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<Merch_Tel></Merch_Tel>
<Merch_URL></Merch_URL>
<Merch_Name_Other></Merch_Name_Other>
<Merch_Net_id></Merch_Net_id>
<Merch_Tax_id>0</Merch_Tax_id>
<Merch_Contact></Merch_Contact>
<auth_type></auth_type>
<auth_expdate_utc></auth_expdate_utc>
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<Reason_ID></Reason_ID>
<Dispute_Condition></Dispute_Condition>
<Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
<Acquirer_Forwarder_ID></Acquirer_Forwarder_ID>
<Currency_Code_Fee></Currency_Code_Fee>
<Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
<Interchange_Amount_Fee></Interchange_Amount_Fee>
<Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
<Clearing_Process_Date></Clearing_Process_Date>
<Settlement_Date></Settlement_Date>
<DCC_Indicator>0</DCC_Indicator>
<multi_part_txn></multi_part_txn>
<multi_part_txn_final></multi_part_txn_final>
<multi_part_number></multi_part_number>
<multi_part_count></multi_part_count>
<SettlementIndicator>0</SettlementIndicator>
<Traceid_Message></Traceid_Message>
<Traceid_Original></Traceid_Original>
<Network_Transaction_ID></Network_Transaction_ID>
<POS_Date_DE13></POS_Date_DE13>
<Network_Currency_Conversion_Date></Network_Currency_Conversion_Date>
<Network_TxnAmt_To_BillAmt_Rate></Network_TxnAmt_To_BillAmt_Rate>
<Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
<Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
<Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
<Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
<Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
<Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
<Visa_POS_Data_DE60></Visa_POS_Data_DE60>
<Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
<Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
<Misc_TLV_Data></Misc_TLV_Data>
</GetTransaction>
    </s:Body>
</s:Envelope>
```

## Payment Response

Below is an example of HTTP response to the above Payment advice message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>0.5</CurBalance>
        <AvlBalance>0.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

# 3.1.7 Example Fee (Financial) Message

## Fee (Financial) Request

Below is an example of the HTTP POST body data for a financial fee request.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32></Acquirer_id_DE32>
            <ActBal>156.63</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38></Auth_Code_DE38>
            <Avl_Bal>137.63</Avl_Bal>
            <Bill_Amt>0.00</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>-19.00</BlkAmt>
            <Cust_Ref>9841867703</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>1.50</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC>0</LoadSRC>
            <LoadType>0</LoadType>
            <MCC_Code></MCC_Code>
            <MCC_Desc></MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42></Merch_ID_DE42>
            <Merch_Name_DE43></Merch_Name_DE43>
            <Note>Fees</Note>
            <POS_Data_DE22></POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>083999</Proc_Code>
            <Resp_Code_DE39></Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>0.00</Settle_Amt>
            <Settle_Ccy>826</Settle_Ccy>
            <Status_Code>00</Status_Code>
            <Token>936270603</Token>
            <Trans_link>5071773234</Trans_link>
            <Txn_Amt>0.00</Txn_Amt>
            <Txn_CCy>826</Txn_CCy>
            <Txn_Ctry></Txn_Ctry>
            <Txn_Desc> QCF - Quasi cash transaction Fee. Posted date - Feb 13 2020  1:12AM</Txn_Desc>
            <Txn_GPS_Date>2020-02-13 01:12:32.407</Txn_GPS_Date>
            <TXn_ID>5071773234</TXn_ID>
            <Txn_Stat_Code>S</Txn_Stat_Code>
            <TXN_Time_DE07></TXN_Time_DE07>
            <Txn_Type>P</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-CU-001</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID></MTID>
            <ProductID>4368</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>51234500</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-001</VL_Group>
            <Dom_Fee_Fixed>1.50</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>0</Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN></PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
            <GPS_POS_Capability></GPS_POS_Capability>
            <GPS_POS_Data></GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
            <Message_Source></Message_Source>
            <Message_Why>0</Message_Why>
            <traceid_lifecycle></traceid_lifecycle>
```

```
            <Balance_Sequence></Balance_Sequence>
            <Balance_Sequence_Exthost></Balance_Sequence_Exthost>
            <PaymentToken_id></PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate></PaymentToken_expdate>
            <PaymentToken_type></PaymentToken_type>
            <PaymentToken_status></PaymentToken_status>
            <PaymentToken_creatorStatus></PaymentToken_creatorStatus>
            <PaymentToken_wallet></PaymentToken_wallet>
            <PaymentToken_deviceType></PaymentToken_deviceType>
            <PaymentToken_lang></PaymentToken_lang>
            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
            <PaymentToken_deviceId></PaymentToken_deviceId>
            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod></PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
            <ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
            <Merch_Name></Merch_Name>
            <Merch_Street></Merch_Street>
            <Merch_City></Merch_City>
            <Merch_Region></Merch_Region>
            <Merch_Postcode></Merch_Postcode>
            <Merch_Country></Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id></Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type></auth_type>
            <auth_expdate_utc></auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID></Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID></Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator></DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator>0</SettlementIndicator>
            <Traceid_Message></Traceid_Message>
            <Traceid_Original></Traceid_Original>
            <Network_Transaction_ID></Network_Transaction_ID>
            <POS_Date_DE13></POS_Date_DE13>
            <Network_Currency_Conversion_Date></Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate></Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
            <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Fee (Financial) Response

Below is an example of HTTP response to the above Fee(Financial) Request message.

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance>0.5</CurBalance>
        <AvlBalance>0.5</AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

# 3.1.8 Example Card Expiry Message

Card Expiry messages inform you that a Card has Expired.  (i.e. it is not happening at the moment, and you cannot decline it. It is an advice.)

Here 'Bill_Amt' is set to either:

- "0.00" if the Card Product 'Breakage fee' flag is not set
- amount remaining on the card, if Card Product 'Breakage fee' flag is set. Below "-5.89" mean that a positive balance of "5.89" was on the card.

## Card Expiry Request

Below is an example of the HTTP POST body data for a card expiry advice notification.


```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <GetTransaction xmlns="http://tempuri.org/">
            <Acquirer_id_DE32></Acquirer_id_DE32>
            <ActBal>0.00</ActBal>
            <Additional_Amt_DE54></Additional_Amt_DE54>
            <Amt_Tran_Fee_DE28></Amt_Tran_Fee_DE28>
            <Auth_Code_DE38></Auth_Code_DE38>
            <Avl_Bal>0.00</Avl_Bal>
            <Bill_Amt>-5.89</Bill_Amt>
            <Bill_Ccy>826</Bill_Ccy>
            <BlkAmt>0.00</BlkAmt>
            <Cust_Ref>4050b028-abcd</Cust_Ref>
            <FX_Pad>0.00</FX_Pad>
            <Fee_Fixed>0.00</Fee_Fixed>
            <Fee_Rate>0.00</Fee_Rate>
            <LoadSRC></LoadSRC>
            <LoadType></LoadType>
            <MCC_Code></MCC_Code>
            <MCC_Desc></MCC_Desc>
            <MCC_Pad>0.00</MCC_Pad>
            <Merch_ID_DE42></Merch_ID_DE42>
            <Merch_Name_DE43></Merch_Name_DE43>
            <Note></Note>
            <POS_Data_DE22></POS_Data_DE22>
            <POS_Data_DE61></POS_Data_DE61>
            <POS_Termnl_DE41></POS_Termnl_DE41>
            <POS_Time_DE12></POS_Time_DE12>
            <Proc_Code>220000</Proc_Code>
            <Resp_Code_DE39></Resp_Code_DE39>
            <Ret_Ref_No_DE37></Ret_Ref_No_DE37>
            <Settle_Amt>5.89</Settle_Amt>
            <Settle_Ccy>826</Settle_Ccy>
            <Status_Code>54</Status_Code>
            <Token>663368509</Token>
            <Trans_link>5960771322</Trans_link>
            <Txn_Amt>5.89</Txn_Amt>
            <Txn_CCy>826</Txn_CCy>
            <Txn_Ctry></Txn_Ctry>
            <Txn_Desc>Card Expiry</Txn_Desc>
            <Txn_GPS_Date>2020-07-15 01:03:28.330</Txn_GPS_Date>
            <TXn_ID>5960771322</TXn_ID>
            <Txn_Stat_Code>S</Txn_Stat_Code>
            <TXN_Time_DE07></TXN_Time_DE07>
            <Txn_Type>Y</Txn_Type>
            <Additional_Data_DE48></Additional_Data_DE48>
            <Authorised_by_GPS>N</Authorised_by_GPS>
            <AVS_Result></AVS_Result>
            <CU_Group>ABC-CU-001</CU_Group>
            <InstCode>ABC</InstCode>
            <MTID></MTID>
            <ProductID>2114</ProductID>
            <Record_Data_DE120></Record_Data_DE120>
            <SubBIN>59833440</SubBIN>
            <TLogIDOrg>0</TLogIDOrg>
            <VL_Group>ABC-VL-002</VL_Group>
            <Dom_Fee_Fixed>0.00</Dom_Fee_Fixed>
            <Non_Dom_Fee_Fixed>0.00</Non_Dom_Fee_Fixed>
            <Fx_Fee_Fixed>0.00</Fx_Fee_Fixed>
            <Other_Fee_Amt>0.00</Other_Fee_Amt>
            <Fx_Fee_Rate>0.00</Fx_Fee_Rate>
            <Dom_Fee_Rate>0.00</Dom_Fee_Rate>
            <Non_Dom_Fee_Rate>0.00</Non_Dom_Fee_Rate>
            <Additional_Data_DE124></Additional_Data_DE124>
            <CVV2></CVV2>
            <Expiry_Date>0</Expiry_Date>
            <PAN_Sequence_Number></PAN_Sequence_Number>
            <PIN></PIN>
            <PIN_Enc_Algorithm></PIN_Enc_Algorithm>
            <PIN_Format></PIN_Format>
            <PIN_Key_Index></PIN_Key_Index>
            <SendingAttemptCount>0</SendingAttemptCount>
            <source_bank_ctry></source_bank_ctry>
            <source_bank_account_format></source_bank_account_format>
            <source_bank_account></source_bank_account>
```

```
            <dest_bank_ctry></dest_bank_ctry>
            <dest_bank_account_format></dest_bank_account_format>
            <dest_bank_account></dest_bank_account>
            <GPS_POS_Capability></GPS_POS_Capability>
            <GPS_POS_Data></GPS_POS_Data>
            <Acquirer_Reference_Data_031></Acquirer_Reference_Data_031>
            <Response_Source></Response_Source>
            <Response_Source_Why>0</Response_Source_Why>
            <Message_Source></Message_Source>
            <Message_Why>0</Message_Why>
            <traceid_lifecycle></traceid_lifecycle>
            <Balance_Sequence></Balance_Sequence>
            <Balance_Sequence_Exthost></Balance_Sequence_Exthost>
            <PaymentToken_id></PaymentToken_id>
            <PaymentToken_creator></PaymentToken_creator>
            <PaymentToken_expdate></PaymentToken_expdate>
            <PaymentToken_type></PaymentToken_type>
            <PaymentToken_status></PaymentToken_status>
            <PaymentToken_creatorStatus> </PaymentToken_creatorStatus>
            <PaymentToken_wallet></PaymentToken_wallet>
            <PaymentToken_deviceType></PaymentToken_deviceType>
            <PaymentToken_lang>  </PaymentToken_lang>
            <PaymentToken_deviceTelNum></PaymentToken_deviceTelNum>
            <PaymentToken_deviceIp></PaymentToken_deviceIp>
            <PaymentToken_deviceId></PaymentToken_deviceId>
            <PaymentToken_deviceName></PaymentToken_deviceName>
            <PaymentToken_activationCode></PaymentToken_activationCode>
            <PaymentToken_activationExpiry></PaymentToken_activationExpiry>
            <PaymentToken_activationMethod>0</PaymentToken_activationMethod>
            <PaymentToken_activationMethodData></PaymentToken_activationMethodData>
            <ICC_System_Related_Data_DE55></ICC_System_Related_Data_DE55>
            <Merch_Name></Merch_Name>
            <Merch_Street></Merch_Street>
            <Merch_City></Merch_City>
            <Merch_Region></Merch_Region>
            <Merch_Postcode></Merch_Postcode>
            <Merch_Country></Merch_Country>
            <Merch_Tel></Merch_Tel>
            <Merch_URL></Merch_URL>
            <Merch_Name_Other></Merch_Name_Other>
            <Merch_Net_id></Merch_Net_id>
            <Merch_Tax_id>0</Merch_Tax_id>
            <Merch_Contact></Merch_Contact>
            <auth_type></auth_type>
            <auth_expdate_utc></auth_expdate_utc>
            <Matching_Txn_ID></Matching_Txn_ID>
            <Reason_ID>0</Reason_ID>
            <Dispute_Condition></Dispute_Condition>
            <Network_Chargeback_Reference_Id></Network_Chargeback_Reference_Id>
            <Acquirer_Forwarder_ID></Acquirer_Forwarder_ID>
            <Currency_Code_Fee></Currency_Code_Fee>
            <Currency_Code_Fee_Settlement></Currency_Code_Fee_Settlement>
            <Interchange_Amount_Fee></Interchange_Amount_Fee>
            <Interchange_Amount_Fee_Settlement></Interchange_Amount_Fee_Settlement>
            <Clearing_Process_Date></Clearing_Process_Date>
            <Settlement_Date></Settlement_Date>
            <DCC_Indicator>0</DCC_Indicator>
            <multi_part_txn></multi_part_txn>
            <multi_part_txn_final></multi_part_txn_final>
            <multi_part_number></multi_part_number>
            <multi_part_count></multi_part_count>
            <SettlementIndicator>0</SettlementIndicator>
            <Traceid_Message></Traceid_Message>
            <Traceid_Original></Traceid_Original>
            <Network_Transaction_ID></Network_Transaction_ID>
            <POS_Date_DE13></POS_Date_DE13>
            <Network_Currency_Conversion_Date></Network_Currency_Conversion_Date>
            <Network_TxnAmt_To_BillAmt_Rate></Network_TxnAmt_To_BillAmt_Rate>
            <Network_TxnAmt_To_BaseAmt_Rate></Network_TxnAmt_To_BaseAmt_Rate>
            <Network_BaseAmt_To_BillAmt_Rate></Network_BaseAmt_To_BillAmt_Rate>
            <Network_Original_Data_Elements_DE90></Network_Original_Data_Elements_DE90>
            <Network_Replacement_Amounts_DE95></Network_Replacement_Amounts_DE95>
            <Network_Issuer_Settle_ID></Network_Issuer_Settle_ID>
            <Visa_ResponseInfo_DE44></Visa_ResponseInfo_DE44>
            <Visa_POS_Data_DE60></Visa_POS_Data_DE60>
            <Visa_STIP_Reason_Code></Visa_STIP_Reason_Code>
            <Mastercard_AdviceReasonCode_DE60></Mastercard_AdviceReasonCode_DE60>
            <Misc_TLV_Data></Misc_TLV_Data>
        </GetTransaction>
    </s:Body>
</s:Envelope>
```

## Card Expiry Response

Below is an example of HTTP response to the above Card Expiry Advice message:

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="h-
ttp://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <GetTransactionResponse xmlns="http://tempuri.org/">
      <GetTransactionResult>
        <Responsestatus>00</Responsestatus>
        <CurBalance></CurBalance>
```

```
        <AvlBalance></AvlBalance>
        <Acknowledgement>1</Acknowledgement>
        <LoadAmount>0.00</LoadAmount>
      </GetTransactionResult>
    </GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

# 3.1.9 Examples of Amount Signs

The table below provides an overview of the signs on important amount fields used in many transactions and illustrates using examples.

**Note:** The TXn_ID field is provided for internal GPS usage and can be ignored.

| MTID | Txn_ Type | cr/db | ProcCode | Source | settle_ ccy | settle_ amt | txn_ ccy | txn_amt | bill_ ccy | bill_amt | TXn_ID |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0100 | A | Debit | 000000 | Banknet | 978 | 7.19 | 826 | 6.30 | 978 | -7.19 | 3178117382 |
| 0100 | A | Debit | 000000 | Visa B1 | 978 | 22.25 | 826 | 19.48 | 978 | -22.25 | 3178117377 |
| 0100 | A | Credit | 280000 | Banknet | 826 | 47.75 | 826 | 47.75 | 826 | 47.75 | 3178096311 |
| 0100 | A | Credit | 260000 | Visa B1 | 978 | 77.71 | 826 | 70.00 | 978 | 77.71 | 3076890895 |
| | D | Debit | 000000 | Banknet | 978 | 1.00 | 978 | 1.00 | 978 | 1.00 | 3177930769 |
| | D | Debit | 003000 | Visa B1 | 978 | 29.94 | 554 | 50.00 | 978 | 29.94 | 3177930766 |
| | D | Credit | 280000 | Banknet | 826 | 10.00 | 826 | 10.00 | 826 | -10.00 | 3179976368 |
| | D | Credit | 200000 | Visa B1 | 840 | 10.00 | 826 | 8.02 | 124 | -14.04 | (not real) |
| 0120 | A | Debit (AFD) | 000000 | Banknet | 978 | 0.00 | 978 | 20.23 | 978 | 20.23 | 3178113201 |
| 0120 | A | Debit (AFD) | 003000 | Visa B1 | 978 | 0.00 | 458 | 195.43 | 978 | 42.80 | 3178110653 |
| 0120 | J | Debit | 000000 | Banknet | | 0.00 | 784 | 21.03 | 826 | 4.44 | 3178071058 |
| 0120 | J | Debit | 003000 | Visa B1 | | 0.00 | 458 | 2.48 | 978 | 0.54 | 3178059229 |
| 0120 | J | Credit | 200000 | Banknet | | 0.00 | 826 | 25.00 | 978 | 30.00 | (not real) |
| 0120 | J | Credit | 260000 | Visa B1 | | 0.00 | 826 | 70.00 | 978 | 77.71 | 3076890919 |
| 1240 | P | Debit | 000000 | GCMS | 978 | -129.00 | 978 | 129.00 | 978 | -129.00 | 3185427850 |
| 1240 | P | Credit | 200000 | GCMS | 978 | 39.23 | 978 | 39.23 | 978 | 39.23 | 3185427844 |
| 05pp | P | Debit | 000000 | Visa B2 | 826 | -30.58 | 710 | 550.00 | 826 | -30.58 | 3184113150 |
| 06pp | P | Credit | 200000 | Visa B2 | 978 | 7.13 | 036 | 11.36 | 978 | 7.13 | 3183968531 |
| 07pp | P | Debit | 010000 | Visa B2 | 978 | -901.75 | 978 | 901.75 | 978 | -901.75 | 3183970358 |
| 1240 | A | Debit (dummy auth) | 010000 | GCMS | 840 | -64.93 | 704 | 1500000.00 | 978 | -57.60 | 3189756992 |
| 1240 | A | Credit (dummy auth) | 200000 | GCMS | 978 | 39.23 | 978 | 39.23 | 978 | 39.23 | (not real) |
| 05pp | A | Debit (dummy auth) | 000000 | Visa B2 | 840 | -18.93 | 756 | 19.00 | 840 | -18.93 | 3189248664 |
| 06pp | A | Credit (dummy auth) | 200000 | Visa B2 | 978 | 7.13 | 036 | 11.36 | 978 | 7.13 | (not real) |
| 07pp | A | Debit (dummy auth) | 010000 | Visa B2 | 826 | -207.71 | 484 | 5100.00 | 826 | -207.71 | 3189246992 |
| 1240 | C | Chargeback | 180000 | Other | 978 | 200.00 | 978 | 200.00 | 978 | 200.00 | 3186093786 |
| 1240 | C | Chargeback | 000000 | Other | 826 | 98.00 | 826 | 98.00 | 826 | 98.00 | 3189694682 |
| 1240 | C | Chargeback | 010000 | Other | 978 | 80.00 | 978 | 80.00 | 978 | 80.00 | 3189323524 |
| | L | Load | 220000 | Other | 978 | 90.00 | 978 | 90.00 | 978 | 90.00 | 3189759169 |
| | U | Unload | 230000 | Other | 826 | 8.84 | 826 | 8.84 | 826 | -8.84 | 2993509894 |
| | B | Bal Adj | 190000 | Other | 978 | 0.19 | 978 | 0.19 | 978 | -0.19 | 3188058606 |
| | B | Bal Adj | 021000 | Other | 826 | 4.99 | 826 | 4.99 | 826 | 4.99 | 3188057935 |
| | P | Fee | 083999 | GPS (Fee fields have | 826 | 0.00 | 826 | 0.00 | 826 | 0.00 | 5071773234 |

| MTID | Txn_ Type | cr/db | ProcCode | Source | settle_ ccy | settle_ amt | txn_ ccy | txn_amt | bill_ ccy | bill_amt | TXn_ID |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | amounts) | | | | | | | |

## Notes

In the above table, a ‘p’ indicates the space character, and the ‘Source’ column indicates the origin of the message as follows:

- “Visa B1” if from Visa Base 1 (i.e., Visa online authorisation system)
- “Visa B2” if from Visa Base 2 (i.e., Visa offline clearing system)
- “Banknet” if from Mastercard Banknet (i.e., Mastercard online authorisation system)
- “GCMS” if from Mastercard Global Clearing system (i.e., Mastercard offline clearing system)
- “Other” means not Visa or Mastercard. For example, internal (via Smart Client) or a web service call

# 3.2 Cut-Off Message WSDL and Examples

This section provides a copy of the GetTransaction WSDL and examples of common transaction messages and responses.

## 3.2.1 Cut-Off Message WSDL

```
<?xml version="1.0" encoding="utf-8" ?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tm="http://microsoft.com/wsdl/mime/textMatching/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:tns="http://tempuri.org/"
xmlns:s="http://www.w3.org/2001/XMLSchema" xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/" xmlns:http="h-
ttp://schemas.xmlsoap.org/wsdl/http/" targetNamespace="http://tempuri.org/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
<wsdl:types>
  <s:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
    <s:element name="Cut_Off">
      <s:complexType>
        <s:sequence>
          <s:element minOccurs="1" maxOccurs="1" name="CutoffID" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="ProductID" type="s:int" />
          <s:element minOccurs="0" maxOccurs="1" name="CutoffDate" type="s:string" />
          <s:element minOccurs="1" maxOccurs="1" name="FirstTxn_ID" type="s:long" />
          <s:element minOccurs="1" maxOccurs="1" name="LastTxn_ID" type="s:long" />
          <s:element minOccurs="1" maxOccurs="1" name="Auths_Acknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="Auths_NotAcknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="Financials_Acknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="Financials_NotAcknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="LoadsUnloads_Acknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="LoadsUnloads_NotAcknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="BalanceAdjustExpiry_Acknowledged" type="s:int" />
          <s:element minOccurs="1" maxOccurs="1" name="BalanceAdjustExpiry_NotAcknowledged" type="s:int" />
        </s:sequence>
      </s:complexType>
    </s:element>
    <s:element name="Cut_OffResponse">
      <s:complexType>
        <s:sequence>
          <s:element minOccurs="0" maxOccurs="1" name="Cut_OffResult" type="s:string" />
        </s:sequence>
      </s:complexType>
    </s:element>
  </s:schema>
</wsdl:types>
<wsdl:message name="Cut_OffSoapIn">
  <wsdl:part name="parameters" element="tns:Cut_Off" />
</wsdl:message>
<wsdl:message name="Cut_OffSoapOut">
  <wsdl:part name="parameters" element="tns:Cut_OffResponse" />
</wsdl:message>
<wsdl:portType name="Service1Soap">
  <wsdl:operation name="Cut_Off">
    <wsdl:input message="tns:Cut_OffSoapIn" />
    <wsdl:output message="tns:Cut_OffSoapOut" />
  </wsdl:operation>
</wsdl:portType>
<wsdl:binding name="Service1Soap" type="tns:Service1Soap">
  <soap:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <wsdl:operation name="Cut_Off">
    <soap:operation soapAction="http://tempuri.org/Cut_Off" style="document" />
    <wsdl:input>
      <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
      <soap:body use="literal" />
    </wsdl:output>
  </wsdl:operation>
</wsdl:binding>
<wsdl:binding name="Service1Soap12" type="tns:Service1Soap">
  <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <wsdl:operation name="Cut_Off">
    <soap12:operation soapAction="http://tempuri.org/Cut_Off" style="document" />
    <wsdl:input>
      <soap12:body use="literal" />
    </wsdl:input>
    <wsdl:output>
      <soap12:body use="literal" />
    </wsdl:output>
  </wsdl:operation>
</wsdl:binding>
<wsdl:service name="Service1">
  <wsdl:port name="Service1Soap" binding="tns:Service1Soap">
    <soap:address location="http://localhost:22355/Service1.asmx" />
  </wsdl:port>
  <wsdl:port name="Service1Soap12" binding="tns:Service1Soap12">
    <soap12:address location="http://localhost:22355/Service1.asmx" />
  </wsdl:port>
</wsdl:service>
</wsdl:definitions>
```

# 3.2.2 Example Cut-Off

## Example Cut-Off Request Message

```
HTTP POST body data:
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
     <Cut_Off xmlns="http://tempuri.org/">
        <CutoffID>983</CutoffID>
        <ProductID>1686</ProductID>
        <CutoffDate>2021-03-23 13:16:42.999</CutoffDate>
        <FirstTxn_ID>245001</FirstTxn_ID>
        <LastTxn_ID>256999</LastTxn_ID>
        <Auths_Acknowledged>15</Auths_Acknowledged>
        <Auths_NotAcknowledged>80</Auths_NotAcknowledged>
        <Financials_Acknowledged>200</Financials_Acknowledged>
        <Financials_NotAcknowledged>16</Financials_NotAcknowledged>
        <LoadsUnloads_Acknowledged>1819</LoadsUnloads_Acknowledged>
        <LoadsUnloads_NotAcknowledged>1001</LoadsUnloads_NotAcknowledged>          <BalanceAdjustExpiry_Acknowledged>256</Bal-
anceAdjustExpiry_Acknowledged>
<BalanceAdjustExpiry_NotAcknowledged>8612</BalanceAdjustExpiry_NotAcknowledged>
     </Cut_Off>
  </s:Body>
</s:Envelope>
```

## Example Cut-Off Response Message

This is an example response to the above example request message, showing the HTTP Response body data:

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Body>
        <Cut_OffResponse xmlns="http://tempuri.org/">
            <Cut_OffResult>1</Cut_OffResult>
        </Cut_OffResponse>
    </s:Body>
</s:Envelope>
```

# Section 4: Appendices

## 4.1 Appendices

Refer to the table below for a list of available appendices, organised alphabetically.

| # | Appendix | Description |
|---|---|---|
| 4.2 | Additional Amounts Field | Additional amount field contains additional amount information for a transaction. |
| 4.3 | Authorisation Field DE43 | Describes the format of the authorisation field Merch_Name_DE43. |
| 4.4 | AVS Results | Provides details of AVS Result values. |
| 4.5 | Bank Account Format | Describes the valid values for the source_bank_account_format and dest_bank_account_format fields. |
| 4.6 | Calculating the Total | Explains how the total cost of the transaction can be calculated. |
| 4.7 | Card Status Codes | Describes the possible card status codes. |
| 4.8 | Country Codes | Lists alpha and numeric country codes. |
| 4.9 | Currency Codes | Provides a list of currency codes, based on the ISO 4217 specification. |
| 4.10 | CVV2 Indicators | Provides details of the CVV2 Presence Type and Response Type indicators. |
| 4.11 | Dispute Condition | Describes the Visa dispute reason codes returned in the Dispute_Condition field. |
| 4.12 | Financial Field Merch_Name_DE43 | Describes the subfields in the Merch_Name_DE43 field. |
| 4.13 | GPS_POS_Capability | Describes the GPS_POS_Capability subfields. |
| 4.14 | GPS_POS_Data | GPS defined field that records POS Data codes, which are specific to this transaction. |
| 4.15 | Load Source | Lists values for the LoadSRC field, identifying the source of a Load. |
| 4.16 | Load Type | Lists the load types that describe how the card was loaded. |
| 4.17 | Mastercard_AdviceReason | Describes the Mastercard_AdviceReasonCode_DE60 field. |
| 4.18 | Merchant Category Codes | Provides details of the merchant category codes (MCC). |
| 4.19 | Misc_TLV_Data Field | Describes the Misc_TLV_Data field, which is used for sending rarely used fields that can normally be ignored. |
| 4.20 | Payment Token Fields | Describes the fields used for mobile device payment tokens:<br>PaymentToken_activationMethod<br>PaymentToken_creatorStatus<br>PaymentToken_deviceType<br>PaymentToken_type<br>PaymentToken_wallet |
| 4.21 | PIN Fields | Describes the format of PIN blocks. |
| 4.22 | POS_Data_DE61 | Describes the format and layout of the POS_Data_DE61 field. |
| 4.23 | POS_Data_DE22 in Authorisation | Describes the format and layout of the POS_Data_DE22 field. |
| 4.24 | POS_Data_DE22 in Mastercard | Describes the subfields in the POS_Data_DE22 field. |
| 4.25 | Processing Codes | Describes the subfields in the processing code (ProcCode ) field. |
| 4.26 | Reason_ID | Provides details of the Reason_ID field, which indicates the reason for a message. |
| 4.27 | Response Codes | Lists the response codes that you can returned to GPS in response to a payment authorisation request. |
| 4.28 | Response_Source and Message_Source | Lists codes and possible values for the Response_Source and Message_Source fields. |
| 4.29 | Response_Source_Why and Message_Source_Why | Lists the possible values for the reason why the Response_Source and Message_Source sent the message. |
| 4.30 | Transaction Status Codes | Provides details of the available Transaction Status Code (Txn_Stat_Code) values. |
| 4.31 | Transaction Types | Provides details of available Transaction Type (Txn_Type) values. |
| 4.32 | Visa_POS_Data_DE60 | Provides details of the layout and format of the Visa_POS_Data_DE60 field. |
| 4.33 | Visa_ResponseInfo_DE44 | Provides details of the layout and format of the Visa_ResponseInfo_DE44 field. |

| # | Appendix | Description |
|---|---|---|
| 4.34 | Visa_STIP_Reason_Code | Provides details of the Visa_STIP_Reason_Code field. |

# 4.2 Additional Amount Field

The additional amount field (Additional_Amt_DE54) contains additional amount information for the transaction, if relevant. For example, for purchase with cash-back transactions, the additional amounts field will be present with the cashback amount. In practice, in request messages, you probably only want to read this field for cashback transactions to extract the cashback amount should you need it. (See also Get Transaction Message fields: Additional_Amt_DE54)

**Note:** Mastercard and Visa may add new Account Type and Amount Type codes in the future. Ignore any amounts where you do not understand the amount type or account type. These are not errors.

## 4.2.1 Additional Amount Subfields

The Additional amounts field (Additional_Amt_DE54) can contain between 1 and 6 different amounts. Each individual amount is a 20 character block. There can be between 1 and 6 blocks. Each block is formatted as follows:

| Subfield | Name | Format | Description / Valid Values |
|---|---|---|---|
| 1 | Account Type | 2 digits 00-99 | Describes which account this amount refers to.<br>See Account Type Codes for valid values. |
| 2 | Amount Type | 2 digits 00-99 | Describes what this amount means.<br>See Amount Type Codes for valid values. |
| 3 | Currency Code | 3 digits 000-999 | ISO 3-digit numeric currency code.<br>See Currency Code for valid values. |
| 4 | Amount sign | 'D' or 'C' | C = Positive (credit) amount<br>D = Debit (negative) amount |
| 5 | Amount value | 12 decimal digits | The amount in minor units of the currency in subfield 3 (currency code.) |

## 4.2.2 Amount Type Codes

Amount Type provides a description of this amount.

| Amount Type | Description |
|---|---|
| 01 | Debit accounts: Ledger Balance<br>Credit card accounts: credit amount remaining for customer (the open to buy amount) |
| 02 | Debit accounts: Available Balance<br>Credit Card accounts: customer's credit limit |
| 03 | Amount Owing |
| 04 | Amount Due |
| 10 | Healthcare Eligibility Amount |
| 11 | Prescription Eligibility Amount |
| 17 | Mastercard Prepaid online bill pay transaction fee amount |
| 40 | Cashback amount |
| 44 | Gratuity amount |
| 56 | Member provided Fee |
| 57 | Original amount |
| 59 | Limit/Balance available amount from Mastercard In-Control |

# 4.3 Authorisation Field (DE43)

This section describes the format of the authorisation field Merch_Name_DE43. (See also Get Transaction Message fields: Merch_Name_DE43)

## 4.3.1 Mastercard Authorisation

The merchant name/location field for Mastercard is made up of various subfields.

| Positions | Length | Field Name | Description / Valid Values |
|---|---|---|---|
| 1-22 | 22 | Card Acceptor Name | Name of Card Acceptor or ATM service provider.<br>(Space padded on the right to make up to 22 characters.) |
| 23-23 | 1 | Separator | Space character ' ' |
| 24-36 | 13 | Card Acceptor City | City of the merchant/ATM<br>(Space padded on the right to make up to 13 characters.) |
| 37-37 | 1 | Separator | Space character ' ' |
| 38-40 | 3 | State or Country Code | If Card Acceptor is in the USA or Canada, this contains a 2 character US state or Canadian Province code then a space.<br>Otherwise, this contains a ISO 3-alpha upper case country code. |

**Examples**

Below are examples of the type of data that can arrive in Merch_Name_DE43 in Authorisation messages:

| Authorisation Message Merch_Name_DE43 value | Things to note |
|---|---|
| PAYPAL *YIWUYUYICHE 35314369001 GBR | Normal country code |
| ROBLOX CORPORATION 888-858-2569 CA | Last 3 characters are a 2-letter US state code, followed by a space e.g. TX = Texas, NY = New York etc. |
| 3600 LAS VEGAS BLVD SO LAS VEGAS NV | Last 3 characters are a space, followed by a 2-letter US state code e.g. TX = Texas, NY = New York etc. |
| NOOR DUBAI MALL BRANCH BAI AE ARE | Emirate within UAE e.g. Dubai/DXB, Abu Dhabi/AUH, Ras Al Khaimah/RAK etc. |
| GOOGLE *FiLMiC Inc g.co/payhelp# GBR | URL in city field |
| MICROSOFT *XBOX BILL.XBOX.COM IRL | Website hostname in city field |

## 4.3.2 VISA Authorisation

The merchant name/location field forVisa is made up of various subfields.

| Positions | Length | Field Name | Description / Valid Values |
|---|---|---|---|
| 1-25 | 25 | Card Acceptor Name | Name of Card Acceptor or ATM service provider.<br>(Space padded on the right to make up to 25 characters.) |
| 26-38 | 23 | City Name | POS: City where the customer transaction occurs.<br>Card-Not-Present Transactions: Instead of the city name, these positions must contain the merchant's customer service telephone number.<br>ATM: City where the ATM is located. The institution name is in field 42. |
| 39-40 | 2 | Country Code | The 2-character alpha code in uppercase format for the country where the cardholder transaction occurs or the ATM is located. |

# 4.4 AVS Results

The table below provides details of available AVS Results (AVS_Result) values. (See also Get Transaction Message fields: AVS_Result)

| Value | Description |
|---|---|
| A | Address matches, postal code does not |
| B | Address matches (postal code not supplied or not checked) |
| C | Postal code does not match (address not supplied or not checked) |
| D | Address does not match (postal code not supplied or not checked) |
| N | Both Postal Code and address not matching |
| R | Retry, system unable to process |
| W | Postal code matches, address does not |
| X | Postal code matches (address not supplied or not checked) |
| Y | Both Postal Code and address matching |
| Z | Postal or ZIP codes match, street addresses do not match or street address not included in request. |

# 4.5 Bank Account Formats

This section describes the valid values for the source_bank_account_format and dest_bank_account_format fields. (See also Get Transaction Message fields: source_bank_account_format and dest_bank_account_format)

| Value | Description | Examples |
|---|---|---|
| IBAN | International Bank Account Number.<br>**Note**: must not contain spaces. | GR1601101250000000012300695<br>GB29NWBK60161331926819 |
| GBR | 6 digit sort code<br>1 space character<br>8 digit account number | 601613 31926819 |

**Note:** GPS plan to use the ISO 3-alpha country code in uppercase for the 'value' to identify bank account number formats which are specific to that country.

# 4.6 Calculating the Total Transaction Cost

When the External Host decides whether to approve or decline the transaction, it takes into account the total cost of the transaction, which is the sum of:

- Billing amount (Bill_Amt field)
- Fixed Fees (Fee_Fixed field)
- Rate variable Fees (Fee_Rate field)
- Foreign Exchange Padding (Fx_Pad field)
- MCC Padding (MCC_Pad field)

Example:

| Bill_Amt | Fee_Fixed | Fee_Rate | Fx_Pad | MCC_Pad | Total amount blocked |
|---|---|---|---|---|---|
| 109.45 | 1.41 | 0.92 | 2.04 | 5.08 | 118.90 |

For use of this calculation in payment authorisation, see EHI Operating Modes.

# 4.7 Card Status Codes

This section lists the possible card status codes.

Note: Since they are based on ISO8583:1987 Response Code values, many are not appropriate as a card status.

| Card Status | Description |
|---|---|
| 00 | All Good |
| 01 | Refer to card issuer |
| 03 | Invalid merchant |
| 04 | capture card |
| 05 | Do not honor |
| 06 | Unspecified Error |
| 08 | Honor with identification |
| 10 | Partial Approval |
| 12 | Invalid transaction |
| 13 | Invalid amount |
| 14 | Invalid card number (no such number) |
| 15 | Unable to route at IEM |
| 17 | Customer Cancellation |
| 30 | Format error |
| 31 | Issuer sign-off |
| 32 | Completed Partially |
| 33 | Expired card |
| 36 | Restricted card |
| 37 | Card acceptor call acquirer security |
| 38 | Allowable PIN tries exceeded |
| 41 | Lost card (Capture) |
| 43 | Stolen card (Capture) |
| 51 | Insufficient funds |
| 54 | Expired card |
| 55 | Incorrect PIN |
| 57 | Transaction not permitted to cardholder |
| 58 | Transaction not permitted to terminal |
| 61 | Exceeds withdrawal amount limit |
| 62 | Restricted card |
| 63 | Security Violation |
| 64 | Original amount incorrect |
| 65 | Exceeds withdrawal frequency limit |
| 66 | Card acceptor call acquirer’s security department |
| 67 | Card to be picked up at ATM |
| 68 | Response received too late |
| 70 | Cardholder to contact issuer |

| Card Status | Description |
|---|---|
| 71 | PIN not changed |
| 75 | Allowable number of PIN tries exceeded |
| 76 | Wrong PIN, allowable number of PIN tries exceeded |
| 77 | Issuer does not participate in the service |
| 78 | Account balance unavailable |
| 79 | Unacceptable PIN - Transaction declined Retry |
| 80 | Network error |
| 81 | Foreign network failure |
| 82 | Timeout at IEM |
| 83 | Card Destroyed |
| 85 | PIN Unblock request |
| 86 | PIN validation not possible |
| 87 | Purchase Amount Only, No Cash Back Allowed |
| 88 | Cryptographic failure |
| 89 | Authentication failure |
| 91 | Issuer or switch is inoperative |
| 92 | Unable to route at AEM |
| 94 | Duplicate transmission |
| 95 | Reconcile error |
| 96 | System malfunction |
| 98 | Refund given to Customer |
| 99 | Card Voided |
| N7 | Decline for CVV2 failure |
| P5 | PIN Change/Unblock request declined |
| P6 | Unsafe PIN |

# 4.8 Country Codes

Country codes are based on the Visa and MasterCard country codes, which are generally based on ISO 3166 country codes, but with some exceptions. You should use the correct alpha-3, alpha-2 or numeric-3 code correctly as described below.

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| Afghanistan | AFG | AF | 004 |
| Åland Islands | ALA | AX | 248 |
| Albania | ALB | AL | 008 |
| Algeria | DZA | DZ | 012 |
| American Samoa | ASM | AS | 016 |
| Andorra | AND | AD | 020 |
| Angola | AGO | AO | 024 |
| Anguilla | AIA | AI | 660 |
| Antarctica | ATA | AQ | 010 |
| Antigua and Barbuda | ATG | AG | 028 |
| Argentina | ARG | AR | 032 |
| Armenia | ARM | AM | 051 |
| Aruba | ABW | AW | 533 |
| Australia | AUS | AU | 036 |
| Austria | AUT | AT | 040 |
| Azerbaijan | AZE | AZ | 031 |
| Bahamas | BHS | BS | 044 |
| Bahrain | BHR | BH | 048 |
| Bangladesh | BGD | BD | 050 |
| Barbados | BRB | BB | 052 |
| Belarus | BLR | BY | 112 |
| Belgium | BEL | BE | 056 |
| Belize | BLZ | BZ | 084 |
| Benin | BEN | BJ | 204 |
| Bermuda | BMU | BM | 060 |
| Bhutan | BTN | BT | 064 |
| Bolivia, Plurinational State of | BOL | BO | 068 |
| Bonaire, Sint Eustatius and Saba | BES | BQ | 535 |
| Bosnia and Herzegovina | BIH | BA | 070 |
| Botswana | BWA | BW | 072 |
| Bouvet Island | BVT | BV | 074 |
| Brazil | BRA | BR | 076 |
| British Indian Ocean Territory | IOT | IO | 086 |
| Brunei Darussalam | BRN | BN | 096 |
| Bulgaria | BGR | BG | 100 |
| Burkina Faso | BFA | BF | 854 |
| Burundi | BDI | BI | 108 |

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| Cambodia | KHM | KH | 116 |
| Cameroon | CMR | CM | 120 |
| Canada | CAN | CA | 124 |
| Cape Verde | CPV | CV | 132 |
| Cayman Islands | CYM | KY | 136 |
| Central African Republic | CAF | CF | 140 |
| Chad | TCD | TD | 148 |
| Chile | CHL | CL | 152 |
| China | CHN | CN | 156 |
| Christmas Island | CXR | CX | 162 |
| Cocos (Keeling) Islands | CCK | CC | 166 |
| Colombia | COL | CO | 170 |
| Comoros | COM | KM | 174 |
| Congo | COG | CG | 178 |
| Congo, the Democratic Republic of the | ZAR | CD | 180 |
| Cook Islands | COK | CK | 184 |
| Costa Rica | CRI | CR | 188 |
| Côte d'Ivoire | CIV | CI | 384 |
| Croatia | HRV | HR | 191 |
| Cuba | CUB | CU | 192 |
| Curaçao | CUW | CW | 531 |
| Cyprus | CYP | CY | 196 |
| Czech Republic | CZE | CZ | 203 |
| Denmark | DNK | DK | 208 |
| Djibouti | DJI | DJ | 262 |
| Dominica | DMA | DM | 212 |
| Dominican Republic | DOM | DO | 214 |
| Ecuador | ECU | EC | 218 |
| Egypt | EGY | EG | 818 |
| El Salvador | SLV | SV | 222 |
| Equatorial Guinea | GNQ | GQ | 226 |
| Eritrea | ERI | ER | 232 |
| Estonia | EST | EE | 233 |
| Ethiopia | ETH | ET | 230 |
| Falkland Islands (Malvinas) | FLK | FK | 238 |
| Faroe Islands | FRO | FO | 234 |
| Federal Republic of Germany | DDR | DD | 280 |
| Fiji | FJI | FJ | 242 |
| Finland | FIN | FI | 246 |
| France | FRA | FR | 250 |

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| French Guiana | GUF | GF | 254 |
| French Polynesia | PYF | PF | 258 |
| French Southern Territories | ATF | TF | 260 |
| Gabon | GAB | GA | 266 |
| Gambia | GMB | GM | 270 |
| Georgia | GEO | GE | 268 |
| Germany | DEU | DE | 276 |
| Ghana | GHA | GH | 288 |
| Gibraltar | GIB | GI | 292 |
| Greece | GRC | GR | 300 |
| Greenland | GRL | GL | 304 |
| Grenada | GRD | GD | 308 |
| Guadeloupe | GLP | GP | 312 |
| Guam | GUM | GU | 316 |
| Guatemala | GTM | GT | 320 |
| Guernsey | GGY | GG | 831 |
| Guinea | GIN | GN | 324 |
| Guinea-Bissau | GNB | GW | 624 |
| Guyana | GUY | GY | 328 |
| Haiti | HTI | HT | 332 |
| Heard Island and McDonald Islands | HMD | HM | 334 |
| Holy See (Vatican City State) | VAT | VA | 336 |
| Honduras | HND | HN | 340 |
| Hong Kong | HKG | HK | 344 |
| Hungary | HUN | HU | 348 |
| Iceland | ISL | IS | 352 |
| India | IND | IN | 356 |
| Indonesia | IDN | ID | 360 |
| Iran, Islamic Republic of | IRN | IR | 364 |
| Iraq | IRQ | IQ | 368 |
| Ireland | IRL | IE | 372 |
| Isle of Man | IMN | IM | 833 |
| Israel | ISR | IL | 376 |
| Italy | ITA | IT | 380 |
| Jamaica | JAM | JM | 388 |
| Japan | JPN | JP | 392 |
| Jersey | JEY | JE | 832 |
| Jordan | JOR | JO | 400 |
| Kazakhstan | KAZ | KZ | 398 |
| Kenya | KEN | KE | 404 |

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| Kiribati | KIR | KI | 296 |
| Korea, Democratic People's Republic of | PRK | KP | 408 |
| Korea, Republic of | KOR | KR | 410 |
| Kosovo - see “UNMI Kosovo” below | See below | See below | See below |
| Kuwait | KWT | KW | 414 |
| Kyrgyzstan | KGZ | KG | 417 |
| Lao People's Democratic Republic | LAO | LA | 418 |
| Latvia | LVA | LV | 428 |
| Lebanon | LBN | LB | 422 |
| Lesotho | LSO | LS | 426 |
| Liberia | LBR | LR | 430 |
| Libyan Arab Jamahiriya | LBY | LY | 434 |
| Liechtenstein | LIE | LI | 438 |
| Lithuania | LTU | LT | 440 |
| Luxembourg | LUX | LU | 442 |
| Macao | MAC | MO | 446 |
| Macedonia, the former Yugoslav Republic of | MKD | MK | 807 |
| Madagascar | MDG | MG | 450 |
| Malawi | MWI | MW | 454 |
| Malaysia | MYS | MY | 458 |
| Maldives | MDV | MV | 462 |
| Mali | MLI | ML | 466 |
| Malta | MLT | MT | 470 |
| Marshall Islands | MHL | MH | 584 |
| Martinique | MTQ | MQ | 474 |
| Mauritania | MRT | MR | 478 |
| Mauritius | MUS | MU | 480 |
| Mayotte | MYT | YT | 175 |
| Mexico | MEX | MX | 484 |
| Micronesia, Federated States of | FSM | FM | 583 |
| Moldova, Republic of | MDA | MD | 498 |
| Monaco | MCO | MC | 492 |
| Mongolia | MNG | MN | 496 |
| Montenegro | MNE | ME | 499 |
| Montserrat | MSR | MS | 500 |
| Morocco | MAR | MA | 504 |
| Mozambique | MOZ | MZ | 508 |
| Myanmar | MMR | MM | 104 |
| Namibia | NAM | NA | 516 |
| Nauru | NRU | NR | 520 |

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| Nepal | NPL | NP | 524 |
| Netherlands | NLD | NL | 528 |
| Netherlands Antilles | ANT | AN | 530 |
| New Caledonia | NCL | NC | 540 |
| New Zealand | NZL | NZ | 554 |
| Nicaragua | NIC | NI | 558 |
| Niger | NER | NE | 562 |
| Nigeria | NGA | NG | 566 |
| Niue | NIU | NU | 570 |
| Norfolk Island | NFK | NF | 574 |
| Northern Mariana Islands | MNP | MP | 580 |
| Norway | NOR | NO | 578 |
| Oman | OMN | OM | 512 |
| Pakistan | PAK | PK | 586 |
| Palau | PLW | PW | 585 |
| Palestinian Territory, Occupied | PSE | PS | 275 |
| Panama | PAN | PA | 591 |
| Papua New Guinea | PNG | PG | 598 |
| Paraguay | PRY | PY | 600 |
| Peru | PER | PE | 604 |
| Philippines | PHL | PH | 608 |
| Pitcairn | PCN | PN | 612 |
| Poland | POL | PL | 616 |
| Portugal | PRT | PT | 620 |
| Puerto Rico | PRI | PR | 630 |
| Qatar | QAT | QA | 634 |
| Réunion | REU | RE | 638 |
| Romania | ROM | RO | 642 |
| Russian Federation | RUS | RU | 643 |
| Rwanda | RWA | RW | 646 |
| Saint Barthélemy | BLM | BL | 652 |
| Saint Helena, Ascension and Tristan da Cunha | SHN | SH | 654 |
| Saint Kitts and Nevis | KNA | KN | 659 |
| Saint Lucia | LCA | LC | 662 |
| Saint Martin (French part) | MAF | MF | 663 |
| Saint Pierre and Miquelon | SPM | PM | 666 |
| Saint Vincent and the Grenadines | VCT | VC | 670 |
| Samoa | WSM | WS | 882 |
| San Marino | SMR | SM | 674 |
| Sao Tome and Principe | STP | ST | 678 |

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| Saudi Arabia | SAU | SA | 682 |
| Senegal | SEN | SN | 686 |
| Serbia | SRB | RS | 688 |
| Seychelles | SYC | SC | 690 |
| Sierra Leone | SLE | SL | 694 |
| Singapore | SGP | SG | 702 |
| Sint Maarten(D) | SXM | SX | 534 |
| Slovakia | SVK | SK | 703 |
| Slovenia | SVN | SI | 705 |
| Solomon Islands | SLB | SB | 090 |
| Somalia | SOM | SO | 706 |
| South Africa | ZAF | ZA | 710 |
| South Georgia and the South Sandwich Islands | SGS | GS | 239 |
| South Sudan | SSD | SS | 728 |
| Spain | ESP | ES | 724 |
| Sri Lanka | LKA | LK | 144 |
| Sudan | SDN | SD | 729 |
| Suriname | SUR | SR | 740 |
| Svalbard and Jan Mayen | SJM | SJ | 744 |
| Swaziland | SWZ | SZ | 748 |
| Sweden | SWE | SE | 752 |
| Switzerland | CHE | CH | 756 |
| Syrian Arab Republic | SYR | SY | 760 |
| Taiwan, Province of China | TWN | TW | 158 |
| Tajikistan | TJK | TJ | 762 |
| Tanzania, United Republic of | TZA | TZ | 834 |
| Thailand | THA | TH | 764 |
| Timor-Leste | TMP | TL | 626 |
| Togo | TGO | TG | 768 |
| Tokelau | TKL | TK | 772 |
| Tonga | TON | TO | 776 |
| Trinidad and Tobago | TTO | TT | 780 |
| Tunisia | TUN | TN | 788 |
| Turkey | TUR | TR | 792 |
| Turkmenistan | TKM | TM | 795 |
| Turks and Caicos Islands | TCA | TC | 796 |
| Tuvalu | TUV | TV | 798 |
| Uganda | UGA | UG | 800 |
| Ukraine | UKR | UA | 804 |
| United Arab Emirates | ARE | AE | 784 |

| Country Name | Country 3-alpha code | Country 2-alpha code | Country 3-numeric code |
|---|---|---|---|
| United Kingdom | GBR | GB | 826 |
| United States | USA | US | 840 |
| United States Minor Outlying Islands | UMI | UM | 581 |
| UNMI Kosovo | QZZ | QZ | 900 |
| Uruguay | URY | UY | 858 |
| Uzbekistan | UZB | UZ | 860 |
| Vanuatu | VUT | VU | 548 |
| Venezuela, Bolivarian Republic of | VEN | VE | 862 |
| Viet Nam | VNM | VN | 704 |
| Virgin Islands, British | VGB | VG | 092 |
| Virgin Islands, U.S. | VIR | VI | 850 |
| Wallis and Futuna | WLF | WF | 876 |
| Western Sahara | ESH | EH | 732 |
| Yemen | YEM | YE | 887 |
| Zambia | ZMB | ZM | 894 |
| Zimbabwe | ZWE | ZW | 716 |

# 4.9 Currency Codes

Currency codes are based on the ISO 4217 specification.

| Code | Number | Exponent | Currency |
|---|---|---|---|
| AED | 784 | 2 | United Arab Emirates dirham |
| AFN | 971 | 2 | Afghan afghani |
| ALL | 008 | 2 | Albanian lek |
| AMD | 051 | 2 | Armenian dram |
| ANG | 532 | 2 | Netherlands Antillean guilder |
| AOA | 973 | 2 | Angolan kwanza |
| ARS | 032 | 2 | Argentine peso |
| AUD | 036 | 2 | Australian dollar |
| AWG | 533 | 2 | Aruban florin |
| AZN | 944 | 2 | Azerbaijani manat |
| BAM | 977 | 2 | Bosnia and Herzegovina convertible mark |
| BBD | 052 | 2 | Barbados dollar |
| BDT | 050 | 2 | Bangladeshi taka |
| BGN | 975 | 2 | Bulgarian lev |
| BHD | 048 | 3 | Bahraini dinar |
| BIF | 108 | 0 | Burundian franc |
| BMD | 060 | 2 | Bermudian dollar |
| BND | 096 | 2 | Brunei dollar |
| BOB | 068 | 2 | Boliviano |
| BOV | 984 | 2 | Bolivian Mvdol |
| BRL | 986 | 2 | Brazilian real |
| BSD | 044 | 2 | Bahamian dollar |
| BTN | 064 | 2 | Bhutanese ngultrum |
| BWP | 072 | 2 | Botswana pula |
| BYN | 933 | 2 | Belarusian ruble (new) |
| BYR | 974 | 2 | Belarusian Ruble (old) |
| BZD | 084 | 2 | Belize dollar |
| CAD | 124 | 2 | Canadian dollar |
| CDF | 976 | 2 | Congolese franc |
| CHE | 947 | 2 | Swiss WIR Euro |
| CHF | 756 | 2 | Swiss franc |
| CHW | 948 | 2 | Swiss WIR Franc |
| CLF | 990 | 4 | Chile Unidad de Fomento |
| CLP | 152 | 0 | Chilean peso |
| CNY | 156 | 2 | Chinese Renminbi/Yuan |
| COP | 170 | 2 | Colombian peso |
| COU | 970 | 2 | Unidad de Valor Real (UVR) |
| CRC | 188 | 2 | Costa Rican colon |

| Code | Number | Exponent | Currency |
|---|---|---|---|
| CUC | 931 | 2 | Cuban convertible peso |
| CUP | 192 | 2 | Cuban peso |
| CVE | 132 | 0 | Cape Verde escudo |
| CZK | 203 | 2 | Czech koruna |
| DJF | 262 | 0 | Djiboutian franc |
| DKK | 208 | 2 | Danish krone |
| DOP | 214 | 2 | Dominican peso |
| DZD | 012 | 2 | Algerian dinar |
| EGP | 818 | 2 | Egyptian pound |
| ERN | 232 | 2 | Eritrean nakfa |
| ETB | 230 | 2 | Ethiopian birr |
| EUR | 978 | 2 | Euro |
| FJD | 242 | 2 | Fiji dollar |
| FKP | 238 | 2 | Falkland Islands pound |
| GBP | 826 | 2 | Great Britain (UK) Pound Sterling |
| GEL | 981 | 2 | Georgian lari |
| GHS | 936 | 2 | Ghanaian cedi |
| GIP | 292 | 2 | Gibraltar pound |
| GMD | 270 | 2 | Gambian dalasi |
| GNF | 324 | 0 | Guinean franc |
| GTQ | 320 | 2 | Guatemalan quetzal |
| GYD | 328 | 2 | Guyanese dollar |
| HKD | 344 | 2 | Hong Kong dollar |
| HNL | 340 | 2 | Honduran lempira |
| HRK | 191 | 2 | Croatian kuna |
| HTG | 332 | 2 | Haitian gourde |
| HUF | 348 | 2 | Hungarian forint |
| IDR | 360 | 2 | Indonesian rupiah |
| ILS | 376 | 2 | Israeli new shekel |
| INR | 356 | 2 | Indian rupee |
| IQD | 368 | 3 | Iraqi dinar |
| IRR | 364 | 2 | Iranian rial |
| ISK | 352 | 0 | Icelandic króna |
| JMD | 388 | 2 | Jamaican dollar |
| JOD | 400 | 3 | Jordanian dinar |
| JPY | 392 | 0 | Japanese yen |
| KES | 404 | 2 | Kenyan shilling |
| KGS | 417 | 2 | Kyrgyzstani som |
| KHR | 116 | 2 | Cambodian riel |
| KMF | 174 | 0 | Comoro franc |

| Code | Number | Exponent | Currency |
|---|---|---|---|
| KPW | 408 | 2 | North Korean won |
| KRW | 410 | 0 | South Korean won |
| KWD | 414 | 3 | Kuwaiti dinar |
| KYD | 136 | 2 | Cayman Islands dollar |
| KZT | 398 | 2 | Kazakhstani tenge |
| LAK | 418 | 2 | Lao kip |
| LBP | 422 | 2 | Lebanese pound |
| LKR | 144 | 2 | Sri Lankan rupee |
| LRD | 430 | 2 | Liberian dollar |
| LSL | 426 | 2 | Lesotho loti |
| LYD | 434 | 3 | Libyan dinar |
| MAD | 504 | 2 | Moroccan dirham |
| MDL | 498 | 2 | Moldovan leu |
| MGA | 969 | 2 | Malagasy ariary |
| MKD | 807 | 2 | Macedonian denar |
| MMK | 104 | 2 | Myanmar kyat |
| MNT | 496 | 2 | Mongolian tögrög |
| MOP | 446 | 2 | Macanese pataca |
| MRO | 478 | 2 | Mauritanian ouguiya (old) |
| MRU | 929 | 2 | Mauritanian ouguiya (new) |
| MUR | 480 | 2 | Mauritian rupee |
| MVR | 462 | 2 | Maldivian rufiyaa |
| MWK | 454 | 2 | Malawian kwacha |
| MXN | 484 | 2 | Mexican peso |
| MXV | 979 | 2 | Mexican Unidad de Inversion (UDI) |
| MYR | 458 | 2 | Malaysian ringgit |
| MZN | 943 | 2 | Mozambican metical |
| NAD | 516 | 2 | Namibian dollar |
| NGN | 566 | 2 | Nigerian naira |
| NIO | 558 | 2 | Nicaraguan córdoba |
| NOK | 578 | 2 | Norwegian krone |
| NPR | 524 | 2 | Nepalese rupee |
| NZD | 554 | 2 | New Zealand dollar |
| OMR | 512 | 3 | Omani rial |
| PAB | 590 | 2 | Panamanian balboa |
| PEN | 604 | 2 | Peruvian sol |
| PGK | 598 | 2 | Papua New Guinean kina |
| PHP | 608 | 2 | Philippine peso |
| PKR | 586 | 2 | Pakistani rupee |
| PLN | 985 | 2 | Polish zloty (new) |

| Code | Number | Exponent | Currency |
|---|---|---|---|
| PYG | 600 | 0 | Paraguayan guaraní |
| QAR | 634 | 2 | Qatari riyal |
| RON | 946 | 2 | Romanian leu |
| RSD | 941 | 2 | Serbian dinar |
| RUB | 643 | 2 | Russian ruble (old) |
| RUR | 810 | 2 | Russian ruble |
| RWF | 646 | 0 | Rwandan franc |
| SAR | 682 | 2 | Saudi riyal |
| SBD | 090 | 2 | Solomon Islands dollar |
| SCR | 690 | 2 | Seychelles rupee |
| SDG | 938 | 2 | Sudanese pound |
| SEK | 752 | 2 | Swedish krona/kronor |
| SGD | 702 | 2 | Singapore dollar |
| SHP | 654 | 2 | Saint Helena pound |
| SLL | 694 | 2 | Sierra Leonean leone |
| SOS | 706 | 2 | Somali shilling |
| SRD | 968 | 2 | Surinamese dollar |
| SSP | 728 | 2 | South Sudanese pound |
| STD | 678 | 2 | São Tomé and Príncipe dobra (old) |
| STN | 930 | 2 | São Tomé and Príncipe dobra (new) |
| SVC | 222 | 2 | Salvadoran colón |
| SYP | 760 | 2 | Syrian pound |
| SZL | 748 | 2 | Swazi lilangeni |
| THB | 764 | 2 | Thai baht |
| TJS | 972 | 2 | Tajikistani somoni |
| TMM | 795 | 0 | Turkmenistan manat (old) |
| TMT | 934 | 2 | Turkmenistan manat (new) |
| TND | 788 | 3 | Tunisian dinar |
| TOP | 776 | 2 | Tongan pa-anga |
| TRL | 792 | 2 | Turkish lira |
| TRY | 949 | 2 | Turkish lira |
| TTD | 780 | 2 | Trinidad and Tobago dollar |
| TWD | 901 | 2 | New Taiwan dollar |
| TZS | 834 | 2 | Tanzanian shilling |
| UAH | 980 | 2 | Ukrainian hryvnia |
| UGX | 800 | 0 | Ugandan shilling |
| USD | 840 | 2 | United States dollar |
| USN | 997 | 2 | US Dollar (next day) |
| USS | 998 | 2 | US Dollar (same day) |
| UYI | 940 | 0 | Uruguay Peso en Unidades Indexadas |

| Code | Number | Exponent | Currency |
|---|---|---|---|
| UYU | 858 | 2 | Uruguayan peso |
| UYW | 927 | 4 | Unidad previsional |
| UZS | 860 | 2 | Uzbekistan som |
| VEF | 937 | 2 | Venezuelan Bolivar Fuerte (old) |
| VES | 928 | 2 | Venezuelan bolívar soberano (new) |
| VND | 704 | 0 | Vietnamese dong |
| VUV | 548 | 0 | Vanuatu vatu |
| WST | 882 | 2 | Samoan tala |
| XAF | 950 | 0 | CFA franc BEAC |
| XAG | 961 | 2 | Silver (one troy ounce) |
| XAU | 959 | 2 | Gold (one troy ounce) |
| XBA | 955 | 2 | European Composite Unit (EURCO) (bond market unit) |
| XBB | 956 | 2 | European Monetary Unit (E.M.U.-6) (bond market unit) |
| XBC | 957 | 2 | European Unit of Account 9 (E.U.A.-9) (bond market unit) |
| XBD | 958 | 2 | European Unit of Account 17 (E.U.A.-17) (bond market unit) |
| XCD | 951 | 2 | East Caribbean dollar |
| XDR | 960 | 2 | Special drawing rights |
| XOF | 952 | 0 | CFA franc BCEAO |
| XPD | 964 | 2 | Palladium (one troy ounce) |
| XPF | 953 | 0 | CFP franc (franc Pacifique) |
| XPT | 962 | 2 | Platinum (one troy ounce) |
| XSU | 994 | 2 | SUCRE |
| XTS | 963 | 2 | Code reserved for testing purposes |
| XUA | 965 | 2 | ADB Unit of Account |
| XXX | 999 | 2 | No currency |
| YER | 886 | 2 | Yemeni rial |
| ZAR | 710 | 2 | South African rand |
| ZMK | 894 | 2 | Zambian kwacha (old) |
| ZMW | 967 | 2 | Zambian kwacha (new) |
| ZWD | 716 | 2 | Zimbabwean dollar |
| ZWL | 932 | 2 | Zimbabwean dollar A/10 |

# 4.10 CVV2 Indicators

## 4.10 .1 CVV2 Presence Type Indicator

If the CVV2 field has 6 characters, then the first character is the CVV2 Presence Type indicator.

This has the following values:

| CVV2 Presence Type indicator | Description | Comment |
|---|---|---|
| 0 | CVV2 value not provided | Nothing to validate. |
| 1 | CVV2 present | CVV2 will be present in positions 4 to 6 inclusive in the 'CVV2' field.<br>If you have chosen to validate CVV2 yourself, then check the CVV2. |
| 2 | CVV2 value on card but not legible | Nothing to validate.<br>You may want to consider declining the transaction if you expect CVV2 to be present on the card. |
| 3 | Dynamic CVV2 present | You should never receive this (only for issuers that subscribe to CVV2 fallback service from Visa) |
| 9 | No CVV2 value on card | Nothing to validate.<br>You may want to consider declining the transaction if you expect CVV2 to be present on the card. |

## 4.10 .2 CVV2 Response Type Indicator

If the CVV2 field has 6 characters, then the second character is the CVV2 Response Type indicator.

This has the following values:

| CVV2 Response Type indicator | Description | Comment |
|---|---|---|
| 0 | Visa do not expect field 44.10 result of CVV2 validation | Ignore - GPS will handle this |
| 1 | Visa expect field 44.10 result of CVV2 validation | Ignore - GPS will handle this |

# 4.11 Dispute Condition

The Dispute_Condition field contains a code to indicate additional information to the Reason_ID field.

**Note:** Currently describes the Dispute Condition for a Visa chargeback; may be used as additional information to describe chargebacks and/or representments.

The usage varies per type of message, as follows:

| MTID | Txn_Type | Description | Details |
|---|---|---|---|
| 1240 | C | Chargeback Notification | For Visa cards: Dispute Reason for the chargeback (in addition to Reason_ID field.) See below.<br>For Other cards: not defined. Will be blank. |
| 1240 | H | Chargeback Notification (Non-Credit) | For Visa cards: Dispute Reason for the chargeback (in addition to Reason_ID field.) See below.<br>For Other cards: not defined. Will be blank. |
| (all other combinations) | | (all other transactions) | Not defined currently. Will be blank. |

## 4.11 .1 Visa Dispute_Condition for Chargeback (Txn_Type C and H)

In Visa newtwork chargeback message types, the Dispute_Condition field provides additional information on the reason for the chargeback (in addition to details in the Reason_ID field). For more information, refer to the *Visa chargeback documentation*.

Visa codes are defined in the BASE2 file TC33 "*Base2 Dispute Financial Status Advice*" TCR1 record position 9-11 "*Dispute Condition*". This is specific to Visa chargebacks initiated on the VROL system. The meaning varies depending on the value of the Reason_ID field.

**Note:** Visa do not explicitly define the codes in the BASE2 document; the table below provides the GPS interpretaion for guidance only.

**Table of GPS Interpretation of the VISA Codes**

| Visa Reason_ID | Visa Dispute_Condition | GPS's interpretation as to the Visa meaning |
|---|---|---|
| 10 (Fraud) | 1 | EMV liability shift Counterfeit fraud |
| 10 (Fraud) | 2 | EMV liability shift non-counterfeit fraud |
| 10 (Fraud) | 3 | Other Fraud (Card Present Environment) |
| 10 (Fraud) | 4 | Other Fraud (Card Absent Environment) |
| 10 (Fraud) | 5 | Visa Fraud Monitoring Program |
| 10 (Fraud) | (other) | Refer to Visa |
| 11 (Authorisation) | 1 | Card Recovery Bulletin |
| 11 (Authorisation) | 2 | Declined Authorisation |
| 11 (Authorisation) | 3 | No Authorisation |
| 11 (Authorisation) | (other) | Refer to Visa |
| 12 (Processing Error) | 1 | Late Presentment |
| 12 (Processing Error) | 2 | Incorrect Transaction Code |
| 12 (Processing Error) | 3 | Incorrect Currency |
| 12 (Processing Error) | 4 | Incorrect Account Number |
| 12 (Processing Error) | 5 | Incorrect Amount |
| 12 (Processing Error) | 6 | Duplicate Processing / Paid by Other Means |
| 12 (Processing Error) | 6.1 | Not sure. Probably one of 'Duplicate Processing', or 'Paid by Other Means' |
| 12 (Processing Error) | 6.2 | Not sure. Probably one of 'Duplicate Processing', or 'Paid by Other Means' |
| 12 (Processing Error) | 7 | Invalid Data |
| 12 (Processing Error) | (other) | Refer to Visa |
| 13 (Consumer Dispute) | 1 | Merchandise/Services not as received |
| 13 (Consumer Dispute) | 2 | Cancelled Recurring |
| 13 (Consumer Dispute) | 3 | Not as Described or Defective Merchandise/services |

| Visa Reason_ID | Visa Dispute_Condition | GPS's interpretation as to the Visa meaning |
|---|---|---|
| 13 (Consumer Dispute) | 4 | Counterfeit Merchandise |
| 13 (Consumer Dispute) | 5 | Misrepresentation |
| 13 (Consumer Dispute) | 6 | Credit not processed |
| 13 (Consumer Dispute) | 7 | Cancelled Merchandise/services |
| 13 (Consumer Dispute) | 8 | Original Credit Transaction Not Accepted |
| 13 (Consumer Dispute) | 9 | Non-receipt of Cash or Load Transaction Value |
| 13 (Consumer Dispute) | (other) | Refer to Visa |

# 4.12 Financial Field Merch_Name_DE43

The Merch_Name_DE43 field is made up the subfields described below. (See also Get Transaction Message fields: Merch_Name_DE43)

## 4.12.1 Mastercard Merch_Name_DE43 (Financial) Format

Most fields are variable in length, separated by a backslash '\' character.

| Length | Field Name | Description / Valid Values |
|---|---|---|
| 0-100 | Card Acceptor Name | Name of Card Acceptor or ATM service provider. May contain special characters. |
| 1 | Separator | Backslash '\' character |
| 0-100 | Card Acceptor Street Address | Card Acceptor/ATM street address. May contain special characters. |
| 1 | Separator | Backslash '\' character |
| 0-100 | Card Acceptor City | Card Acceptor/ATM city. For cardholder not present transactions, this may contain a URL or phone number of customer support. May contain special characters. |
| 1 | Separator | Backslash '\' character |
| 10 | Postal Code | May contain nothing or special characters (e.g. Polish postcodes contain '-') |
| 3 | Region Code | If country is USA, this will be the US state code<br>If country is CAN, this will be the Canadian province code.<br>If country has regions/provinces, it may contain region/province code.<br>If not applicable, may be blank or contain the 3-alpha country code of the merchant. |
| 3 | Country Code | ISO 3-alpha country code of merchant/ATM. |

## 4.12.2 VISA Merch_Name_DE43 (Financial) Format

| Positions | Length | Field Name | Description / Valid Values |
|---|---|---|---|
| 1-25 | 25 | Card Acceptor Name | Name of Card Acceptor or ATM service provider.<br>(Space padded on the right to make up to 25 characters.) |
| 26-38 | 23 | City Name | POS: City where the customer transaction occurs.<br>Card-Not-Present Transactions: Instead of the city name, these positions must contain the merchant's customer service telephone number.<br>ATM: City where the ATM is located. The institution name is in field Merch_ID_DE42. |
| 39-40 | 2 | Country Code | The 2-character alpha code in uppercase format for the country where the cardholder transaction occurs or the ATM is located. |

## 4.12.3 Merch_Name_DE43 (Financial) Examples

Examples of Merch_Name_DE43 in financial type messages:

| Financial Message Merch_Name_DE43 value | Notes |
|---|---|
| MARTIN MCCOLL\152 HUNTSPOND ROAD\FAREHAM\PO14 4PL GBRGBR | Normal.<br>Country in region field. |
| IMPERIAL CHINA \25A LISLE STREET \LONDON WC2H \WC2H 7BA GBR | Blank region field |
| MECK \Stora Varvsgatan 6A \Malmo \21119 SWESWE | Numbers-only postcode |
| VUE BSL LTD\3 CRANBOURN STREET\WEST END\WC2H 7AL GBRGBR | |
| THE CHIC PEA\4545 BLACKCOMB WAY\WHISTLER\V0N1B4 BC CAN | 'BC ' 6th to 4th last characters are the Canadian province code |
| USCUSTOMS ESTA APPL PM\6650 TELECOM DR STE 100\317-617-4458\46278 IN USA | 'IN ' 6th to 4th last characters are the US state code |
| CCSF MTA IPS PRKNG MET\1 S VAN NESS AVE FL 8 \SAN FRANCISCO\94103 CA USA | 'CA ' 6th to 4th last characters are the US state code |
| LINODE.COM\329 E. Jimmie Leeds Road\855-4546633\08205 NJ USA | Notice phone number in the City field |

| Financial Message Merch_Name_DE43 value | Notes |
|---|---|
| BADAVI SL 60508603\CL CARACAS 50 A\BARCELONA\08030 080ESP | Notice ‘080’ in region field |
| LA BANQUE POSTAL\\VAL D ISERE\7315000000FR FRA | Notice no street address. 73150 is the postcode. |
| STARBUCKS CC 4461 \\DUBAI \ ARE | Notice no street address or postcode |
| Eymundsson Leifsstod \Grensásvegi 11 \REYKJAVÍK \108 ISLISL | Notice accented characters present in both street address and city |
| Uber BV\Hamminkweg 5\help.uber.com\7251B NLDNLD | Notice URL in city field |
| *BNP\14 RUE AUBER\PARIS 15\75000 FRAFRA | Notice asterik as first character in name field. |
| CHEFETTE RESTAURANT-BL\CHEFETTE RESTAURANT-BLACST MICHAEL BB\ST. MICHAEL\BB23027 BRB | |
| KEYCDN CREDITS \Room 424, 7 Gra\41445853152 \3011 CHECHE | Notice street address. |
| APOTEKET SERGEL \SERGELGÅNGEN 14 \STOCKHOLM \111 57 SWESWE | Special character in street address. |
| Vikurskali/Strondin\Sigtuni 5\Vik\870 ISLISL | Notice ‘/’ in name field |
| mytaxi.com\C/ Diputacio 39, Local B1\taxi tour\8015 ESP | Notice ‘/’ in street address field (Abbreviation of ‘Calle’ which means Street in Spanish |
| Amazon UK Marketplace\5 rue plaetis\800-279-6620\L2338 LUXLUX | Notice telephone number and ‘-‘ in city field |
| MICROSOFT *XBOX \-- \01157761000 \89119 NV USA | Notice ‘-‘ signs in street address and ‘*’ in name field |
| BANQUE RHONES AL\\BARALP L' ALP\3875000000FR FRA | Notice apostrophe in city name |
| ROAD TRANSPORT AUTH\RTA-DUBAI METRO-TVM DUBAI AE\DUBAI\0000000784UAEARE | Notice all postcode characters used |
| WWW.REMIXSHOP.COM \ST.L.KOSTOV3\SOFIA \1407 BGRBGR | |
| CONVERSE # 39\8166 VINELAND AVE #1725\ORLANDO\32821 FL USA | |
| ANUDAN HOLDINGS (PVT)\ANUDAN HOLDINGS (PVT) LTD\HIKKADUWA\UNKNOWN LKA | |
| CT TNHH IHOME TEAM\31 E2 BIET THU TAN LAP NT KH\KHANH HOA\650000 VNM | |
| L'ESCORCHEVEL \LE PRAZ \SAINT BON TAR\73120 FRAFRA | |
| HUMBLEBUNDLE.COM HUMBL\201 POST ST FL 11 \8778877815 \94108 CA USA | |
| ADO TERMINAL TULUM\AV TULUM NO 9 ENTRE\SOLIDARIDAD Q\77780 QR MEX | Notice region code present for non-US and non-Canada country |
| "TAVRIA-V"\"TAVRIA-V"\NIKOLAEV\54056 UKR | Notice double quote characters in name and street |
| "BGEU" BR.519 ATM \PR.PARTIZANSKIY,26A\MINSK \220070 BLRBLR | Notice double quote characters in name |
| (BK-R1) BK- T1 #021-53\101 THOMSON RD\SINGAPORE\307591 SGPSGP | Notice ‘(‘, ‘)’, ‘-‘, ‘#’ characters in name. |
| #5 LUCILLE'S SMOKE\6257 E. 2ND ST\LONG BEACH\90803 CA USA | Notice apostrophe and ‘#’ characters in name. |
| *BARCLAYS/GWERU*BARCLAYS/GWERU\GWERU\UNKNOWN ZWEZWE | Notice ‘*’ ‘/’ in both name and street |
| *DEUTSCHE BANK AG \\F-FLUGHAF. \60486 DEUDEU | |
| 00/HBCG-AERO-PODGORICA\00/HBCG-AERO-PODGORICA\PODGORICA\81000 499MNE | |
| +CHURCHGATE RAI\+CHURCHGATE RAILWAY ST\M M\400020 INDIND | |
| 000000003006002\LAOS DEVELOPMENT BANK\03006002\UNKNOWN LAOLAO | |
| 000000017200001\000000017200001 TSCN,\Bac Kan\UNKNOWN VNMVNM | |
| 000000074200002\000000074200002 Toa an\Chau Doc\UNKNOWN VNMVNM | |
| 000000099999999\91Tran H Dao Tx Hoi An\Da Nang\UNKNOWN VNMVNM | |
| 013109669990000\Line2,kejiguan\Shanghai\UNKNOWN CHNCHN | |
| 018 STARBUCKS PTY\219/3Y YAMAMOTO 13/1 SOI.BEACH\CHONBURI\20150 THATHA | |
| 02010002\(02010002),Yuri Meiko\inYangon\UNKNOWN MMRMMR | |

| Financial Message Merch_Name_DE43 value | Notes |
|---|---|
| 2BuySafe.com/ MCCOYS\Kirchstrasse 6\.\9494 LIELIE | Notice '.' Is the city |
| 589359000000000\AV0POTOSI0SN0000000000\00POTOSI0000\UNKNOWN BOLBOL | |
| 99BILL*JUNEYAOAIR.\SHANGHAI PU DONG PU DIAN LU 360 HAO 12 L\SHANGHAI\200122 SHACHN | |
| WOOLWORTHS V A WRON\\CAPE TOWN\8000 ZA ZAF | No street |
| TRAVELEX LHR T5 BA (1)\\London\AB21 0DU GBRGBR | Postcode is not valid and does not correspond to city |
| Piraeus Bank,S/M MASOU\\Thessaloniki\ GRCGRC | |
| HSBC CASH MACHINE\\TILEHURST\ GBRGBR | No street, description in name |
| HOUSE BOUTIQUE \\PHNOM PENH \ KHM | No street |
| Goldman Sachs\\London\EC4A 2BB GBRGBR | No street |
| BOI ATM\\TRINITY \00000 IRLIRL | Dummy postcode (probably) |
| Twoj Market\ul.Pelplinska 41\Bydgoszcz\85-794 POLPOL | '-' in postcode field. |
| ASDA GEORGE COM LEEDS\LEEDS\GB | |
| WWW.ALZA.CZ\PRAHA 7\CZ SYMBAL.BY\PAVEL.BELAVUS\BY | |
| WWW.ALZA.SK\PRAHA 7\CZ | |
| mall.hu\Budapest\HU | |
| RYANAIR 22400000MUYY2\LONDON\GB | |
| WWW.ALZA.CZ\PRAHA 7\CZ | |

# 4.13 GPS_POS_Capability

This is a GPS defined field that records POS terminal capabilities for this transaction. It is made up of various subfields.

## 4.13.1 GPS_POS_Capability Fields

Refer to the table below for details

**Note:** All subfields are concatenated together in order. Subfields begin at position 1. You may only receive the leading subfields (i.e. 1 or more). In future, more subfields may be added.

| Position | Name | Format | Description / Valid Values |
|---|---|---|---|
| 1 | Partial Approval Support | N(1,1) | Indicates if POS terminal supports partial approval or not:<br>0 = not supported (default assumption)<br>1 = supported |
| 2 | Purchase Amount only approval support | N(1,1) | Indicates if POS terminal supports approval of the purchase amount only, in a purchase with cashback transaction.<br>0 = not supported (default assumption)<br>1 = supported |
| 3 to 22 | Card Data Input Capability | AN (20,20) | Card Data Input methods supported by the terminal.<br>1 position for each possible method.<br>Each position is set to: 1=Supported, 0=Not supported<br>See Card Data Input Capability subfield |
| 23 to 42 | Cardholder authentication capability | AN (20,20) | Cardholder authentication methods supported by the terminal.<br>1 position for each possible method.<br>Each position is set to: 1=Supported, 0=Not supported<br>See Cardholder Authentication Capability subfield |
| 43 | Card capture capability | AN(1,1) | 0 = Card capture not supported<br>1 = Card capture supported<br>9 = Unknown |
| 44 | Terminal Attended indicator | AN(1,1) | Indicates if the terminal is attended by the merchant<br>0 = No terminal used<br>1 = Attended<br>2 = Unattended<br>9 = Unknown |
| 45 | Terminal Environment | AN(1,1) | Indicates the Terminal Environment/Location-type<br>0 = No terminal used<br>1 = On premises of card acceptor<br>2 = Off premises of card acceptor<br>3 = On premises of cardholder<br>9 = Unknown |
| 46 | Terminal Card Data Output Capability | AN(1,1) | Indicates the ability of the terminal to write to the card<br>0 = Unknown<br>1 = None (eg if no terminal used)<br>2 = Magnetic Stripe Write<br>3 = ICC<br>S = Other |
| 47 | Terminal output capability | AN(1,1) | Indicates the output capabilities of the terminal<br>0 = Unknown<br>1 = None<br>2 = Print only<br>3 = Display only<br>4 = Print and Display |

| Position | Name | Format | Description / Valid Values |
|---|---|---|---|
| 48 | Terminal PIN capture capability | AN(1,1) | Terminal PIN Capture Capability.<br>Says if the terminal can capture PINs, and if so, the maximum length of PIN supported:<br>0 = None<br>1 = Unknown<br>4 = Yes, max length 4 digits<br>5 = Yes, max length 5 digits<br>6 = Yes, max length 6 digits<br>7 = Yes, max length 7 digits<br>8 = Yes, max length 8 digits<br>9 = Yes, max length 9 digits<br>A = Yes, max length 10 digits<br>B = Yes, max length 11 digits<br>C = Yes, max length 12 digits |
| 49 | Terminal Type | AN(1,1) | Defines what sort of terminal this is.<br>(here 'CAT' means Cardholder Activated Terminal.)<br>0 = Unknown/Unspecified<br>1 = CAT level 1 – Automated Dispensing Machine<br>2 = CAT level 2 – self-service terminal<br>3 = CAT level 3 – Limited Amount Terminal<br>4 = CAT level 4 – In-flight commerce terminal<br>5 = CAT level 5<br>6 = CAT level 6 – e-commerce terminal<br>7 = CAT level 7 – Transponder<br>9 = Mobile POS acceptance device<br>M = Manual (no terminal used)<br>A = ATM<br>R = Electronic Cash Register or normal attended POS device |

## 4.13.2 Card Data Input Capability subfield

This describes the "Card Data Input Capability"subfield of GPS_POS_Capability. See above.

Card Data Input Capability is a 20 character field. Each position represents a different capability, with a value set to either: 1=Supported or 0=Not supported. See the table below.

| GPS_POS_Capability position | Card Data Input Capability position | Name |
|---|---|---|
| 3 | 1 | Unknown |
| 4 | 2 | Manual (eg zip-zap); no terminal or server |
| 5 | 3 | Magnetic Stripe |
| 6 | 4 | Barcode |
| 7 | 5 | OCR |
| 8 | 6 | EMV contact |
| 9 | 7 | PAN Key Entry |
| 10 | 8 | Contactless Magnetic Stripe |
| 11 | 9 | EMV contactless or qVSDC contactless |
| 12 | 10 | Account Data on File |
| 13 | 11 | QR code |
| 14 | 12 | E-Commerce |
| 15 | 13 | E-Commerce with EMV cryptogram |
| 16 | 14 | MICR reader |

| GPS_POS_Capability position | Card Data Input Capability position | Name |
|---|---|---|
| 17 | 15 | Reserved |
| 18 | 16 | Reserved |
| 19 | 17 | Reserved |
| 20 | 18 | Reserved |
| 21 | 19 | Reserved |
| 22 | 20 | Reserved |

**Example 1**

If GPS_POS_Capability = *"1100100100010000000000010010010100000000019234CR"* then this indicates that the following card data input capabilities are supported: Magnetic Stripe, EMV contact, Account Data on File.

## 4.13.3 Cardholder Authentication Capability subfield

Positions 23 to 42 inside the GPS_POS_Capability field represent the Cardholder Authentication Capabilities.

The table defines which Cardholder Authentication Capability is defined by each position. Each position's value is set to either: 1=Supported, or 0=Not supported / unknown.

| GPS_POS_Capability position | Cardholder authentication Capability position | Name |
|---|---|---|
| 23 | 1 | None |
| 24 | 2 | PIN (online or offline) |
| 25 | 3 | Electronic signature analysis |
| 26 | 4 | biometrics |
| 27 | 5 | biographic |
| 28 | 6 | Manual signature verification |
| 29 | 7 | Manual other (eg drivers licence / ID card) |
| 30 | 8 | Offline PIN |
| 31 | 9 | Online PIN |
| 32 | 10 | 3D-Secure |
| 33 | 11 | Account based digital signature |
| 34 | 12 | Public key based digital signature |
| 35 | 13 | Unknown |
| 36 | 14 | Reserved |
| 37 | 15 | Reserved |
| 38 | 16 | Reserved |
| 39 | 17 | Reserved |
| 40 | 18 | Reserved |
| 41 | 19 | Reserved |
| 42 | 20 | Reserved |

**Example 2**

If GPS_POS_Capability = "1100100100010000000000100100101000000000019234CR" this indicates that the following Cardholder authentication methods are supported: PIN, biographic, Offline PIN, 3D-secure.

## 4.13.4 Full GPS_POS_Capability example

If GPS_POS_Capability = "1100100100010000000000010010010100000000019234CR"

Then this indicates :

| Position | Value | Meaning |
|---|---|---|
| 1 | 1 | Partial approval supported |
| 2 | 1 | Purchase amount only approval supported |
| 3 | 0 | Card data input capability not unknown |
| 4 | 0 | Card data input by manual not supported |
| 5 | 1 | Card data input by magnetic stripe supported |
| 6 | 0 | Card data input by barcode not supported |
| 7 | 0 | Card data input by OCR not supported |
| 8 | 1 | Card data input by EMV contact supported |
| 9 | 0 | Card data input by PAN key entry not supported |
| 10 | 0 | Card data input by Contactless Magnetic stripe not supported |
| 11 | 0 | Card data input by EMV contactless not supported |
| 12 | 1 | Card data input by Account Data on file supported |
| 13 | 0 | Card data input by QR code not supported |
| 14 | 0 | Card data input by E-commerce not supported |
| 15 | 0 | Card data input by E-commerce with EMV not supported |
| 16 | 0 | Card data input by MICR reader not supported |
| 17 | 0 | Reserved for future use. |
| 18 | 0 | Reserved for future use. |
| 19 | 0 | Reserved for future use. |
| 20 | 0 | Reserved for future use. |
| 21 | 0 | Reserved for future use. |
| 22 | 0 | Reserved for future use. |
| 23 | 0 | No Cardholder authentication at all is not supported |
| 24 | 1 | Cardholder authentication by PIN supported |
| 25 | 0 | Cardholder authentication by Electronic signature analysis not supported |
| 26 | 0 | Cardholder authentication by biometrics not supported |
| 27 | 1 | Cardholder authentication by biographic supported |
| 28 | 0 | Cardholder authentication by manual signature not supported |
| 29 | 0 | Cardholder authentication by manual (other) not supported |
| 30 | 1 | Cardholder authentication by offline PIN supported |
| 31 | 0 | Cardholder authentication by online PIN not supported |
| 32 | 1 | Cardholder authentication by 3D-secure supported |
| 33 | 0 | Cardholder authentication by Account based digital signature not supported |
| 34 | 0 | Cardholder authentication by Public key based digital signature not supported |
| 35 | 0 | Cardholder authentication by unknown means not indicated |
| 36 | 0 | Reserved for future use. |
| 37 | 0 | Reserved for future use. |
| 38 | 0 | Reserved for future use. |
| 39 | 0 | Reserved for future use. |
| 40 | 0 | Reserved for future use. |

| Position | Value | Meaning |
|---|---|---|
| 41 | 0 | Reserved for future use. |
| 42 | 0 | Reserved for future use. |
| 43 | 1 | Card capture supported |
| 44 | 9 | Unknown if terminal is attended |
| 45 | 2 | Terminal is off premises of card acceptor |
| 46 | 3 | Terminal supports card output by ICC writing |
| 47 | 4 | Terminal has Print and Display capability |
| 48 | C | Terminal can capture up to 12 digit PINs |
| 49 | R | Terminal is a normal POS or cash register |

# 4.14 GPS_POS_Data

This is a GPS field that records POS Data codes, which are specific to this transaction. Each position records a different piece of information.  Positions 23 onwards are reserved for future use.

**Note:** All subfields are concatenated together in order. Subfields begin at 1. You may only receive the leading subfields (i.e. 1 or more.)

## 4.14.1 GPS_POS_Data Positions

| Position | Name | Format | Values defined in section |
|---|---|---|---|
| 1 | Cardholder Present | AN(1,1) | Cardholder Present Indicator |
| 2 | Card Present | AN(1,1) | Cardholder Present Indicator |
| 3 | Card Data Input Method | AN(1,1) | Card Data Input Method |
| 4 | Cardholder authentication method 1 | AN(1,1) | Cardholder authentication Method |
| 5 | Cardholder authentication method 2 | AN(1,1) | Cardholder authentication Method |
| 6 | Cardholder authentication method 3 | AN(1,1) | Cardholder authentication Method |
| 7 | Cardholder authentication method 4 | AN(1,1) | Cardholder authentication Method |
| 8 | Cardholder authentication entity 1 | AN(1,1) | Cardholder authentication Entity |
| 9 | Cardholder authentication entity 2 | AN(1,1) | Cardholder authentication Entity |
| 10 | Cardholder authentication entity 3 | AN(1,1) | Cardholder authentication Entity |
| 11 | Cardholder authentication entity 4 | AN(1,1) | Cardholder authentication Entity |
| 12 | Chip fallback indicator | AN(1,1) | Chip Fallback Indicator |
| 13 | Fraud indicator | AN(1,1) | POS Fraud Indicator |
| 14 | Security protocol in the cardholder->merchant interaction | AN(1,1) | Security Protocol (between cardholder device and merchant) |
| 15 | 3D secure authentication method | AN(1,1) | 3D-secure Authentication Method |
| 16 | InstantFunding_GPS | N(1,1) | InstantFunding_GPS |
| 17 | InstantFunding_Network | N(1,1) | InstantFunding_Network |
| 18 | ExemptFromSCA | AN(1,1) | ExemptFromSCA |
| 19 | SCA assessment result | AN(1,1) | SCA assessment result |
| 20 | SCA test: Knowledge | AN(1,1) | SCA test: Knowledge |
| 21 | SCA test: Possession | AN(1,1) | SCA test: Possession |
| 22 | SCA test: Biometric (inherence) | AN(1,1) | SCA test: Biometric (inherence) |
| 23+ | Reserved | AN | Ignore this, if arrives. |

**Note:** Any positions not received should be treated as ‘Unknown’.

## 4.14.2 Cardholder Present Indicator

This field describes if the cardholder was present at the point of sale, or if not, why not. Values are as follows:

| Cardholder Present value | Meaning |
|---|---|
| 0 | Cardholder present |
| 1 | Cardholder not present, unspecified |
| 2 | Cardholder not present, mail order |
| 3 | Cardholder not present, telephone order |
| 4 | Cardholder not present, standing auth/recurring transaction (could recur forever) |
| 5 | Cardholder not present, e-commerce |
| 6 | Cardholder not present, installment transaction (like recurring but fixed number of installments) |
| 9 | Unknown |

## 4.14.3 Card Present Indicator

This field describes if the card was present at the point of sale, or if not, why not. Values are as follows:

| Cardholder Present value | Meaning |
|---|---|
| 0 | Card not present |
| 1 | Card present |
| 9 | Unknown |

## 4.14.4 Card Data Input Method

This field describes how the card data (eg PAN) was inputted to the terminal. Values are as follows:

| Card Data Input Method value | Meaning |
|---|---|
| 0 | unspecified |
| 1 | manual, no terminal |
| 2 | magnetic stripe read |
| 3 | bar code |
| 4 | Optical Character Recognition |
| 5 | EMV contact |
| 6 | key entered |
| 7 | EMV contactless or VSDC contactless |
| V | E-Commerce |
| C | E-Commerce with EMV cryptogram |
| E | Contactless magnetic stripe |
| F | Account Data on File |
| G | Key entered by Acquirer (merchant phoned acquirer with card data) |
| M | MICR reader |
| Q | QR code |

## 4.14.5 Cardholder Authentication Method

There are four cardholder authentication methods recorded in GPS_POS_Data. The table below describes the possible cardholder authentication method values.

| Value | Meaning |
|---|---|
| 0 | Not authenticated |
| 1 | PIN |
| 2 | Electronic signature analysis |
| 3 | Biometrics (eg fingerprint, vein scan) |
| 4 | Biographic (eg date-of-birth, other data) |
| 5 | Manual signature verification |
| 6 | Other manual verification (eg drivers licence) |
| 7 | Other |
| 8 | Unknown |
| 9 | Passcode/Password (e.g. to unlock a smartphone) |
| A | Pattern (e.g. to unlock a smartphone) |
| B | Possession of Hardware device (e.g. number generating key fob) |
| C | Possession of Hardware device with user verification (as 'B', but additionally the cardholder was verified too) |
| D | Possession of software application (e.g. passcode generating program) |
| E | Possession of software application with user verification (as 'D', but additionally the cardholder was verified too) |
| S | 3D-Secure |

**Note:** Values 7,9,A,B,C,D,E as of 06/01/2021 GPS expect to see from Visa only, and initially only for transactions on a payment-token (e.g. a smartphone), but this could change in future.

## 4.14.6 Cardholder Authentication Entity

There are four cardholder authentication methods recorded in GPS_POS_Data.

For each authentication method, the entity performing that authentication method is recorded in the four cardholder authentication entity values.

For example: “Cardholder authentication entity 2” describes which entity performed the “Cardholder authentication method 2” test.

The table below describes the possible values for cardholder authentication entities.

| Value | Meaning |
|---|---|
| 0 | Not authenticated |
| 1 | Chip Card |
| 2 | Card Acceptance Device / Terminal |
| 3 | Authorising Agent |
| 4 | Merchant |
| 5 | Other |
| 6 | Cardholder device (e.g. mobile phone) |
| 7 | Wallet Provider and/or Token Requestor. (E.g. Apple Pay) |
| 8 | Unknown |

## 4.14.7 Chip Fallback Indicator

This is used by Visa to indicate the likely cause of the fallback (e.g., a terminal or card problem).

This is done by noting if the previous chip transaction at the same terminal (which would 99% be on a completely different card) was also a fallback.

The table below describes the possible values for the Chips Fallback Indicator:

| Value | Meaning |
|---|---|
| 0 | n/a (This transaction is not a chip fallback transaction, or unknown). |
| 1 | Previous transaction at same terminal was not fallback from chip. |
| 2 | Previous transaction at same terminal was fallback from chip. |

## 4.14.8 POS Fraud Indicator

This is used by the merchant to indicate if the merchant thought the transaction was suspicious.  Not all networks, acquirers or terminals may support this.

Values are as follows:

| Fraud Indicator | Meaning |
|---|---|
| 0 | No problem |
| 1 | Merchant suspicious (in UK, this is a code 10 call) |
| 2 | Merchant verified the cardholder ID |

## 4.14.9 Security Protocol (between cardholder device and merchant)

This describes, for an e-commerce or equivalent card data input method, what security was in place between the cardholder device and merchant system.

Values are as follows:

| Security Protocol value | Meaning |
|---|---|
| 0 | None |
| 1 | Channel encryption (https) |
| N | Not applicable |

## 4.14.10 3D-secure Authentication Method

If 3D-secure was used to authenticate the cardholder, then this indicates what variety of authentication was used.

This is the authentication method as reported by the network.

**Note:** This field is only populated with an accurate value if GPS receive this information from the network. The table below summarises this situation:

| Network | 3D-secure version | Content of this 3D-secure field on 3D-secure transactions |
|---|---|---|
| Visa | 1 (all variants) | Limited, only values ‘x’ or ‘0’ |
| Visa | 2.0 and up | Provided, any value may be set.  (From Base1 field 126.20) |
| Mastercard | SPA v1 | Provided: only values 0,1,2,3 are possible |
| Mastercard | SPA v2 | Information not provided, so value ‘x’ always set |

Values are as follows:

| 3D-secure auth method | Meaning |
|---|---|
| x | Unknown / not applicable |
| 0 | None, or 3D secure version 1.0.2 authentication methods |
| 1 | Password |
| 2 | Secret key (eg on chip card) or 3DS 2.0 Challenge flow using OTP via SMS method |
| 3 | PKI or 3DS 2.0 Challenge flow using OTP via key fob or card reader method |
| 4 | 3DS 2.0 Challenge flow using OTP via app method |
| 5 | 3DS 2.0 Challenge flow using OTP via any other method |
| 6 | 3DS 2.0 Challenge flow using KBA method |
| 7 | 3DS 2.0 Challenge flow using OOB with biometric method |

| 3D-secure auth method | Meaning |
|---|---|
| 8 | 3DS 2.0 Challenge flow using OOB with app login method |
| 9 | 3DS 2.0 Challenge flow using OOB with any other method |
| A | 3DS 2.0 Challenge flow using any other authentication method |
| B | 3DS unrecognized authentication method |
| C | 3DS 2.0 Push Confirmation |
| D | 3DS 2.0 Frictionless flow, RBA (Risk-based authentication) review |
| E | 3DS 2.0 Attempts server responding |
| F | 3DS 2.0 Frictionless flow |
| y | 3DS 2.0 Challenge with Unknown authentication method |

## 4.14.11 InstantFunding_GPS

GPS flag to indicate the transaction uses instant funding (MoneySend or Visa Direct).
Values are as follows:

| InstantFunding_GPS value | Meaning |
|---|---|
| 0 | Normal transaction |
| 1 | Instant Funding Transaction |

## 4.14.12 InstantFunding_Network

Network flag to indicate the transaction uses instant funding (MoneySend or Visa Direct). Values are as follows:

| InstantFunding_Network value | Meaning |
|---|---|
| 0 | Normal transaction |
| 1 | Instant Funding Transaction |

## 4.14.13 ExemptFromSCA

Indicates if the transaction is exempt from Strong Customer Authentication (SCA) as per Payments Service Directive 2 (PSD2). Values are as follows:

| ExemptfromSCA value | Description |
|---|---|
| 0 | Transaction not exempt from SCA or Unknown |
| 1 | Transaction is exempt from SCA due to being on an exempt MCC.<br>(Acquirer did not provide an SCA exemption indicator.)<br>(As of 11/02/2020, exempt MCCs are: 4111, 4112, 4131, 4784, 7523) |
| A | Acquirer Transaction Risk Analysis |
| C<br>D | Secure Corporate Payment<br>SCA Delegation |
| M | Merchant Initiated Transaction |
| O<br>R | Authentication Outage Exemption<br>Recurring Payment |
| T | Trusted Merchant |
| V | Low Value Payment |

## 4.14.14 SCA Assessment Result

Indicates if GPS determined the transaction is SCA (Strong Cardholder Authentication) or not.
If it was determined to be SCA, this indicates why.

Note: GPS only does SCA assessment for authorisation requests, so for all other transactions (authorisation advices, clearing, reversals) this will always be 'N'.

To find out if a clearing transaction was SCA, you need to find the matching authorisation request(s), and see if they were SCA or not. It is possible that a clearing matching two authorisations, one of which could be SCA, and the other not SCA. As a result, SCA is only a property of an authorisation.

SCA assessment result values are as follows:

| Value | Description |
|---|---|
| 0 | Not SCA. |
| 1 | SCA, due to: Card/Payment-Token implicitly performs SCA. |
| 2 | SCA, due to: Transaction met at least 2 of the 3 SCA tests (Biometric, Possession, Knowledge)<br>**Note**: this will only be assessed by GPS if Card/Payment-Token does not do PSD2 (value '1') or implied SCA (value '2'). |
| D | When GPS assessed PSD2 for the transaction, it was detected that PSD2 checks were delegated to Card/Payment-Token. No further PSD2 assessment was required of GPS. |
| N | Not performed or not applicable (and value 'D' not appropriate). |

## 4.14.15 SCA Test: Knowledge

Indicates if detection of (Strong Cardholder Authentication (SCA) Knowledge test was performed by GPS, and if so, what the result was.

Knowledge test as according to the EU EBA's rules. Testing if the cardholder knew some information that is secret to them (e.g. provided a PIN or Passcode.)

Note: GPS only does SCA assessment for authorisation requests, so for all other transactions (authorisation advices, clearing, reversals) this will always be 'N'.

Values are as follows:

| Value | Description |
|---|---|
| N | Not performed or not applicable |
| 0 | Failed test |
| 1 | Passed test |

## 4.14.16 SCATest: Possession

Indicates if detection of SCA (Strong Cardholder Authentication) Possession test was performed by GPS, and if so, what the result was.

Possession test as according to the EU EBA's rules. Testing if there is proof that the cardholder possesses something that only the cardholder should possess (e.g. a physical chip card.)

Note: GPS only does SCA assessment for authorisation requests, so for all other transactions (authorisation advices, clearing, reversals) this will always be 'N'.

Values are as follows:

| Value | Description |
|---|---|
| N | Not performed or not applicable |
| 0 | Failed test |
| 1 | Passed test |

## 4.14.17 SCA Test: Biometric (inherence)

Indicates if detection of SCA (Strong Cardholder Authentication) Biometric (inherence) test was performed by GPS, and if so, what the result was.

Biometric test as according to the EU EBA's rules. Testing if there is proof that the cardholder passed some sort of biometric test (e.g. fingerprint scan, iris scan, vein scan).

Note: GPS only does SCA assessment for authorisation requests, so for all other transactions (authorisation advices, clearing, reversals) this will always be 'N'.

Values are as follows:

| Value | Description |
|---|---|
| N | Not performed or not applicable |

| Value | Description |
| --- | --- |
| 0 | Failed test |
| 1 | Passed test |

# 4.14.18 GPS_POS_Data Example

Below is an example of GPS_POS_Data.

### Example 1 - Length of 18 characters

If GPS_POS_Data = “0151500340002Nx000”

Then this indicates:

| Position | Value | Meaning |
|---|---|---|
| 1 | 0 | Cardholder is present |
| 2 | 1 | Card is present |
| 3 | 5 | EMV contact |
| 4 | 1 | 1st cardholder authentication method was PIN |
| 5 | 5 | 2nd cardholder authentication method was signature |
| 6 | 0 | No 3rd cardholder authentication method was used |
| 7 | 0 | No 4th cardholder authentication method was used |
| 8 | 3 | PIN (1st cardholder authentication method) was checked by the authorising Agent (i.e. Network, GPS or EHI) |
| 9 | 4 | Signature (2nd cardholder authentication method) was checked by the Merchant |
| 10 | 0 | n/a (as no 3rd cardholder authentication method) |
| 11 | 0 | n/a (as no 4th cardholder authentication method) |
| 12 | 0 | Not a chip fallback transaction |
| 13 | 2 | Merchant verified the cardholder ID |
| 14 | N | Security protocol (cardholder to merchant) not applicable |
| 15 | x | 3D-secure not applicable |
| 16 | 0 | Instant Funding (GPS indicator) not applicable |
| 17 | 0 | Instant Funding (Network indicator) not applicable |
| 18 | 9 | ExemptFromSCA not applicable or unknown |

**Note:** Positions 19 onwards are not present and can be treated as ‘Unknown’.

### Example 2 - Length of 22 characters

If GPS_POS_Data = “0151500340002Nx0003110”

Then this indicates:

| Position | Value | Meaning |
|---|---|---|
| 1 | 0 | Cardholder is present |
| 2 | 1 | Card is present |
| 3 | 5 | EMV contact |
| 4 | 1 | 1st cardholder authentication method was PIN |
| 5 | 5 | 2nd cardholder authentication method was signature |
| 6 | 0 | No 3rd cardholder authentication method was used |
| 7 | 0 | No 4th cardholder authentication method was used |
| 8 | 3 | PIN (1st cardholder authentication method) was checked by the authorising Agent (i.e. Network, GPS or EHI) |
| 9 | 4 | Signature (2nd cardholder authentication method) was checked by the Merchant |
| 10 | 0 | n/a (as no 3rd cardholder authentication method) |
| 11 | 0 | n/a (as no 4th cardholder authentication method) |
| 12 | 0 | Not a chip fallback transaction |

| Position | Value | Meaning |
|---|---|---|
| 13 | 2 | Merchant verified the cardholder ID |
| 14 | N | Security protocol (cardholder to merchant) not applicable |
| 15 | x | 3D-secure not applicable |
| 16 | 0 | Instant Funding (GPS indicator) not applicable |
| 17 | 0 | Instant Funding (Network indicator) not applicable |
| 18 | 9 | ExemptFromSCA not applicable or unknown |
| 19 | 3 | Transaction is SCA, as passed 2+ of the knowledge,possession & biometric tests |
| 20 | 1 | SCA Knowledge test passed |
| 21 | 1 | SCA Possession test passed |
| 22 | 0 | SCA Biometric (inherence) test failed |

# 4.15 Load Source

The table below lists the valid values for the LoadSRC field, identifying the source of a Load. (See also Get Transaction Message fields: LoadSRC)

| ID | Source | Notes |
|---|---|---|
| 1 | POS standard | |
| 2 | GPS Kiosk | |
| 3 | GPS Web Site | |
| 4 | Card Processor | |
| 5 | Standard Web Service | |
| 6 | Agent | |
| 7 | Head Office | |
| 8 | Call Centre | |
| 9 | Customer Web site | |
| 10 | Wirecard | |
| 11 | Customer kiosk | |
| 12 | Customer mobile app | |
| 13 | GPS IVR | |
| 14 | Unknown | |
| 16 | Load From Card Request File | |
| 17 | Corporate | |
| 18 | epay | |
| 19 | HOCA Verifiable | |
| 20 | Post Office | |
| 21 | HOCA Non Verifiable | |
| 22 | Paypoint | |
| 23 | DXB POS Reload | |
| 24 | TCC Web Report | |
| 25 | TCC Online | |
| 26 | VIRGIN POS Reload | |
| 27 | TCC POS Reload | |
| 28 | TCC Promotion | |
| 29 | DXB Zero Load | |
| 30 | AlFardan Reload | |
| 31 | UAEx Reload | |
| 32 | AlAnsari Reload | |
| 33 | 14 day Cool Off | |
| 34 | Unload to Repatriate | |
| 35 | Loan Repayment | |
| 36 | DXB Online | |
| 37 | Payzone | |
| 38 | VIRGIN Zero Load | |
| 39 | VIRGIN POS standard | |

| ID | Source | Notes |
|---|---|---|
| 40 | JADE Web Report | |
| 41 | JADE POS standard | |
| 42 | JADE POS Reload | |
| 43 | JADE Zero Load | |
| 44 | Wirecard-Cadooz | |
| 45 | Crunch POS Standard | |
| 46 | CRUNCH POS Reload | |
| 47 | Unload Fee Test | |
| 48 | Balance Transfer Fee Test | |
| 49 | Sofort Banking | |
| 50 | Wirecard e-commerce | |
| 51 | UAExAirport POS Standard | |
| 52 | UAExAirport Reload | |
| 53 | Cadooz Load | |
| 54 | Cadooz Reload | |
| 55 | Cadooz web unload | |
| 56 | Sofort Bank Transfer Load | |
| 57 | Billpay Payment | |
| 60 | Post Office and Paypoint | |
| 61 | Credit Limit | |
| 62 | Credit Card Payment | |
| 63 | Ukash Payment | |
| 64 | Bank Transfer | For Bank transfers, the following fields will be present in the request message:<br>source_bank_ctry<br>source_bank_account_format<br>source_bank_account<br>dest_bank_ctry<br>dest_bank_account_format<br>dest_bank_account |
| 65 | Giropay | |
| 66 | Sofortüberweisung | |
| 67 | Debit Card | |
| 68 | Primary Card | |
| 74 | Master Virtual Card | |
| 75 | Micropayment | |
| 76 | MVC Load | |
| 77 | iMVC Load | |

# 4.16 Load Type

The table below lists the valid values for the `LoadType` field, identifying the type of Load. (See also Get Transaction Message fields: LoadType)

| ID | Source |
|---|---|
| 0 | Unknown |
| 1 | Cash |
| 2 | Debit card |
| 3 | Credit card |
| 4 | e-Wallet |
| 5 | Bank account |
| 6 | Import |
| 7 | Savings Stamps |
| 8 | Cheque |
| 9 | Export |
| 10 | Transfer |
| 11 | From/To Offline Balance |

# 4.17 Mastercard_AdviceReasonCode_DE60

The Mastercard_AdviceReasonCode_DE60 field is present for MTID='0120' (Authorisation Advice) and MTID='0420' (Reversal Advice) transactions on Mastercard. In both cases it provides information on why the advice was generated.

**Note:** Mastercard may add, remove or change any of the values at any time.

The field is divided into three parts:

| Position | Length | Format | Description |
|---|---|---|---|
| 1 to 3 | 3 | N(3,3) | Advice Reason Code - reason why this advice was created<br>See Positions 1-3 Advice Reason Code |
| 4 to 7 | 4 | N(4,4) | Advice Detail Code - May be present (depending on the Advice Reason Code) providing additional information.<br>See Positions 4-7 Advice Detail Code |
| 8 to the end | 1 to 53 | ANS (1,53) | Advice Detail Text - May be present (depending on the Advice Reason Code) providing additional information as human readable format. |

## 4.17.1 Positions 1-3 Advice Reason Code

Provides three digits to describe why the MTID=0120 or MTID=0420 advice was created. See the table below.

**Note:** Not all the codes below are applicable, for example: some may only apply to Acquirers, and some only apply to services you may not be using.

- *Alternate Issuer Route* refers to the Mastercard STIP system.
- *MIP* is part of the Mastercard system. The Acquirer is connected to one MIP, Issuer (GPS) is connected to another MIP.

| Advice Reason Code | Meaning |
|---|---|
| 100 | Alternate Issuer Route: Issuer selected option |
| 101 | Alternate Issuer Route: IPS signed out |
| 102 | Alternate Issuer Route: IPS timed out |
| 103 | Alternate Issuer Route: IPS unavailable |
| 105 | Transaction processed via X-Code (i.e., Mastercard processed this at their Acquiring MIP). |
| 107 | PIN processing error |
| 108 | Alternate Issuer Route: MIP Error |
| 109 | Alternate Issuer Route: Issuer Edit Response Error |
| 111 | Alternate Issuer Route: Issuer Host System Error |
| 112 | Alternate Route: Network Not Dispatched Error |
| 113 | Alternate Route: Issuer Undelivered |
| 114 | Alternate Route: Direct Down Option |
| 115 | Transaction Processed via On-behalf Service Decision |
| 116 | Invalid Merchant |
| 120 | Transaction Blocking ( blocked by a Mastercard Fraud System; this normally configured with your issuer; GPS is not involved .) |
| 121 | Account Lookup Service |
| 126 | Pay with Rewards Processing Advice to Issuer |
| 140 | Unable to convert contactless or virtual account number |
| 141 | Mastercard Digital Enablement Service Advice to Issuer |
| 151 | In Control Processing Advice to Issuer (Mastercard Merchant Presented QR) |
| 160 | Authentication Advice to Issuer |
| 180 | CAT Risk Level 3 |
| 190 | Acquirer Processing System (APS) Approved |

| Advice Reason Code | Meaning |
|---|---|
| 191 | Acquirer Processing System (APS) Completed Authorization Transaction |
| 192 | M/Chip Offline Advice to Issuer |
| 200 | In Control Processing Advice to Issuer |
| 400 | Unable to deliver response from Mastercard to Acquirer |
| 401 | No acknowledgement from Acquirer to Mastercard |
| 402 | Issuer Time-out |
| 403 | Issuer Signed out |
| 409 | Issuer Response Error |
| 410 | Reversal message provided by a system other than Mastercard's online authorisation system (Banknet) |
| 413 | Issuer Undelivered |
| other | Mastercard may add other values when they please |

## 4.17.2 Positions 4-7 Advice Detail Code

This is a 4 digit number which may be present, providing additional information, as follows:

| Advice Detail Code | Meaning |
|---|---|
| 0000 | Accepted/Approved |
| Any other code | Reason why transaction was declined.<br>There are too many codes to practically put them in this specification, if you want to know a particular value, if you have access to the Mastercard Customer Interface Specification you can look in there, otherwise you can ask GPS. |

# 4.18 Merchant Category Codes

The table below lists the valid values for the MCC_Code field, identifying the merchant category code. (See also Get Transaction Message fields:MCC_Code)

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 742 | 742 | Veterinary Services |
| 763 | 763 | AGRICULTURAL COOPERATIVES |
| 780 | 780 | LANDSCAPE AND HORTICULTURAL SERVICES |
| 1520 | 1520 | General Contractors |
| 1711 | 1711 | Heating, Plumbing, A/C |
| 1731 | 1731 | Electrical Contractors |
| 1740 | 1740 | Masonry, Stonework, and Plaster |
| 1750 | 1750 | Carpentry Contractors |
| 1761 | 1761 | Roofing/Siding, Sheet Metal |
| 1771 | 1771 | Concrete Work Contractors |
| 1799 | 1799 | Special Trade Contractors |
| 2741 | 2741 | Miscellaneous Publishing and Printing |
| 2791 | 2791 | Typesetting, Plate Making, and Related Services |
| 2842 | 2842 | Specialty Cleaning |
| 3000 | 3299 | Airlines |
| 3001 | 3001 | AMERICAN AIRLINES |
| 3004 | 3004 | DRAGONAIR |
| 3005 | 3005 | BRITISH AIRWAYS |
| 3006 | 3006 | JAPAN AIRLINES |
| 3007 | 3007 | AIR FRANCE |
| 3008 | 3008 | LUFTHANSA |
| 3009 | 3009 | AIR CANADA |
| 3010 | 3010 | KLM (ROYAL DUTCH AIRLINES) |
| 3011 | 3011 | AEROFLOT |
| 3012 | 3012 | QANTAS |
| 3013 | 3013 | ALITALIA |
| 3014 | 3014 | SAUDI ARABIAN AIRLINES |
| 3015 | 3015 | SWISS INTERNATIONAL AIRLINES - SWISS AIR |
| 3016 | 3016 | SAS |
| 3017 | 3017 | SOUTH AFRICAN AIRWAYS |
| 3018 | 3018 | VARIG AIR (BRAZIL) |
| 3019 | 3019 | GERMANWINGS - GRMNWGAIR |
| 3020 | 3020 | AIR INDIA |
| 3021 | 3021 | AIR ALGERIE |
| 3022 | 3022 | PAL AIR |
| 3024 | 3024 | PAKISTAN INTERNATIONAL |
| 3025 | 3025 | AIR NEW ZEALAND |
| 3026 | 3026 | EMIRATES AIRLINES |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3027 | 3027 | UTA/INTERAIR |
| 3028 | 3028 | AIR MALTA |
| 3029 | 3029 | SN BRUSSELS AIRLINES - SNBRU AIR |
| 3030 | 3030 | AEROLINEAS ARGENTINAS |
| 3031 | 3031 | OLYMPIC AIRWAYS |
| 3032 | 3032 | EL AL |
| 3033 | 3033 | ANSETT AIRLINES |
| 3034 | 3034 | TRANS AUSTRAILIAN AIRWAYS (TAA) |
| 3035 | 3035 | TAP (PORTUGAL) |
| 3037 | 3037 | EGYPTAIR |
| 3038 | 3038 | KUWAIT AIRWAYS |
| 3039 | 3039 | AVIANCA |
| 3040 | 3040 | GULF AIR (BAHRAIN) |
| 3042 | 3042 | FINNAIR |
| 3043 | 3043 | AER LINGUS |
| 3044 | 3044 | AIR LANKA |
| 3047 | 3047 | THY (TURKEY) |
| 3048 | 3048 | AIRMARO |
| 3049 | 3049 | TUNIS AIR |
| 3050 | 3050 | ICELANDAIR |
| 3051 | 3051 | AUSTRIAN AIRLINES |
| 3052 | 3052 | LAN AIRLINES-LANAIR |
| 3056 | 3056 | QUEBECAIRE |
| 3057 | 3057 | EAST/WEST AIRLINES (AUSTRALIA) |
| 3058 | 3058 | DELTA |
| 3063 | 3063 | U.S. AIR |
| 3064 | 3064 | ADRIA AIRWAYS |
| 3065 | 3065 | AIRINTER |
| 3066 | 3066 | SOUTHWEST |
| 3068 | 3068 | AIR ASTANA |
| 3069 | 3069 | Sun Country Airlines |
| 3072 | 3072 | CEBU PAC |
| 3075 | 3075 | SINGAPORE AIRLINES |
| 3076 | 3076 | AEROMEXICO |
| 3077 | 3077 | THAI AIRWAYS |
| 3078 | 3078 | CHINA AIRLINES |
| 3079 | 3079 | JETSTAR AIRLINES |
| 3081 | 3081 | NORDAIR |
| 3082 | 3082 | KOREAN AIRLINES |
| 3084 | 3084 | EVA AIRWAYS |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3088 | 3088 | CROATIA AIRLINES |
| 3089 | 3089 | TRANSAERO |
| 3096 | 3096 | AIR ZIMBABWE |
| 3098 | 3098 | ASIANNA AIRLINES - ASIANNA |
| 3099 | 3099 | CATHAY PACIFIC |
| 3100 | 3100 | MALAYSIAN AIRLINE SYSTEM |
| 3102 | 3102 | IBERIA |
| 3103 | 3103 | GARUDA (INDONESIA) |
| 3111 | 3111 | BRITISH MIDLAND |
| 3112 | 3112 | WINDWARD ISLAND |
| 3125 | 3125 | TAN |
| 3127 | 3127 | TACA INTERNATIONAL |
| 3129 | 3129 | SURINAM AIRWAYS |
| 3132 | 3132 | FRONTIER AIRLINES |
| 3136 | 3136 | QATAR AIRWAYS |
| 3144 | 3144 | VIRGIN ATLANTIC |
| 3146 | 3146 | LUXAIR |
| 3161 | 3161 | ALL NIPON AIRWAYS |
| 3174 | 3174 | JETBLUE AIRLINES |
| 3175 | 3175 | MIDDLE EAST AIR |
| 3177 | 3177 | AIRTRAN AIRWAYS |
| 3178 | 3178 | MESA AIR |
| 3180 | 3180 | WESTJETAIR |
| 3182 | 3182 | LOT (POLAND) |
| 3183 | 3183 | OMANAIR |
| 3184 | 3184 | LIAT |
| 3190 | 3190 | JUGOSLAV AIR |
| 3191 | 3191 | ISLAND AIRLINES |
| 3196 | 3196 | HAWAIIAN AIR |
| 3206 | 3206 | CHINA EASTERN AIRLINES |
| 3211 | 3211 | NORWEGIAN AIR SHUTTLE |
| 3217 | 3217 | CSA |
| 3219 | 3219 | COPA |
| 3223 | 3223 | COMAIR |
| 3228 | 3228 | CAYMAN AIRWAYS |
| 3234 | 3234 | CARIBBEAN AIRLINES |
| 3236 | 3236 | AIR ARABIA |
| 3240 | 3240 | BAHAMASAIR |
| 3245 | 3245 | EASYJET AIR |
| 3246 | 3246 | RYANAIR |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3247 | 3835 | 3247-3835 |
| 3248 | 3248 | TAM AIR |
| 3256 | 3256 | ALASKA AIRLINES |
| 3260 | 3260 | SPIRIT AIRLINES |
| 3261 | 3261 | AIR CHINA |
| 3267 | 3267 | AIR PANAMA |
| 3292 | 3292 | CYPRUS AIRWAYS |
| 3294 | 3294 | ETHIOPIAN AIRLINES |
| 3295 | 3295 | KENYA AIRWAYS |
| 3296 | 3296 | AIR BERLIN |
| 3297 | 3297 | TAROM |
| 3298 | 3298 | AIR MAURITIUS |
| 3299 | 3299 | WIDEROE'S FLYVESELSKAP |
| 3351 | 3441 | Car Rental |
| 3351 | 3441 | Car Rental Agencies 2 |
| 3355 | 3355 | SIXT CAR RENTAL |
| 3357 | 3357 | HERTZ RENT-A-CAR |
| 3359 | 3359 | PAYLESS CAR RENTAL |
| 3364 | 3364 | AGENCY RENT-A-CAR |
| 3366 | 3366 | BUDGET RENT-A-CAR |
| 3368 | 3368 | HOLIDAY RENT-A-CAR |
| 3381 | 3381 | EUROP CAR |
| 3387 | 3387 | ALAMO RENT-A-CAR |
| 3389 | 3389 | AVIS RENT-A-CAR |
| 3390 | 3390 | DOLLAR RENT-A-CAR |
| 3393 | 3393 | NATIONAL CAR RENTAL |
| 3395 | 3395 | THRIFTY RENT-A-CAR |
| 3400 | 3400 | AUTO HOST CAR RENTALS |
| 3405 | 3405 | ENTERPRISE RENT-A-CAR |
| 3409 | 3409 | GENERAL RENT-A-CAR |
| 3412 | 3412 | A-1 RENT-A-CAR |
| 3420 | 3420 | ANSA INTL RENT-A-CAR |
| 3427 | 3427 | AVON RENT-A-CAR |
| 3438 | 3438 | INTERENT RENT-A-CAR |
| 3441 | 3441 | ADVANTAGE RENT-A-CAR |
| 3501 | 3790 | Hotels/Motels/Inns/Resorts |
| 3501 | 3835 | 3501-3835 |
| 3502 | 3502 | BEST WESTERN HOTELS |
| 3503 | 3503 | SHERATON HOTELS |
| 3504 | 3504 | HILTON HOTELS |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3505 | 3505 | FORTE HOTELS |
| 3506 | 3506 | GOLDEN TULIP HOTELS |
| 3507 | 3507 | FRIENDSHIP INNS |
| 3508 | 3508 | QUALITY INNS & QUALITY SUITES |
| 3509 | 3509 | MARRIOTT HOTELS |
| 3510 | 3510 | DAYS INNS OR DAYSTOP |
| 3511 | 3511 | ARABELLA HOTELS |
| 3512 | 3512 | INTER-CONTINENTAL HOTELS |
| 3513 | 3513 | WESTIN HOTELS |
| 3514 | 3514 | AMERISUITES |
| 3515 | 3515 | RODEWAY INNS |
| 3516 | 3516 | LA QUINTA MOTOR INNS |
| 3519 | 3519 | PULLMAN INTERNATIONAL HOTELS |
| 3520 | 3520 | MERIDIEN HOTELS |
| 3521 | 3521 | ROYAL LAHAINA RESORTS |
| 3523 | 3523 | PENINSULA HOTEL |
| 3526 | 3526 | PRINCE HOTELS |
| 3528 | 3528 | RED LION HOTELS OR RED LION INNS |
| 3530 | 3530 | RENAISSANCE HOTELS |
| 3533 | 3533 | HOTEL IBIS |
| 3535 | 3535 | HILTON INTERNATIONAL |
| 3536 | 3536 | AMFAC HOTELS |
| 3537 | 3537 | ANA HOTEL |
| 3538 | 3538 | CONCORDE HOTELS |
| 3539 | 3539 | SUMMERFIELD SUITES HOTEL |
| 3540 | 3540 | IBEROTEL HOTELS |
| 3541 | 3541 | HOTEL OKURA |
| 3542 | 3542 | ROYAL HOTELS |
| 3543 | 3543 | FOUR SEASONS HOTELS |
| 3545 | 3545 | SHANGRI-LA INTERNATIONAL |
| 3548 | 3548 | HOTELS MELIA |
| 3549 | 3549 | AUBERGE DES GOVERNEURS |
| 3551 | 3551 | MIRAGE HOTEL AND CASINO |
| 3552 | 3552 | COAST HOTELS |
| 3553 | 3553 | PARK INNS INTERNATIONAL |
| 3555 | 3555 | TREASURE ISLAND HOTEL AND CASINO |
| 3558 | 3558 | JOLLY HOTELS |
| 3559 | 3559 | CANDLEWOOD SUITES - THISTLE HOTELS |
| 3560 | 3560 | DISALLOWED - Aladdin Resort and Casino |
| 3561 | 3561 | GOLDEN NUGGET |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3562 | 3562 | COMFORT INNS |
| 3567 | 3567 | SOHO GRAND HOTEL |
| 3570 | 3570 | FORUM HOTELS |
| 3572 | 3572 | MIYAKO HOTELS |
| 3573 | 3573 | SANDMAN HOTELS |
| 3575 | 3575 | VAGABOND HOTELS |
| 3577 | 3577 | MANDARIN ORIENTAL HOTEL |
| 3579 | 3579 | HOTEL MERCURE |
| 3581 | 3581 | DELTA HOTEL |
| 3583 | 3583 | SAS HOTELS |
| 3586 | 3586 | SOKOS HOTELS |
| 3590 | 3590 | FAIRMONT HOTELS |
| 3591 | 3591 | SONESTA HOTELS |
| 3592 | 3592 | OMNI HOTELS |
| 3595 | 3595 | HOSPITALITY INNS |
| 3596 | 3596 | WYNN LAS VEGAS |
| 3597 | 3597 | DISALLOWED - Riverside Resort and Casino |
| 3598 | 3598 | REGENT INTERNATIONAL HOTELS |
| 3602 | 3602 | HUDSON HOTEL |
| 3604 | 3604 | HILTON GARDEN RESORT/INN |
| 3607 | 3607 | FONTAINEBLEAU RESORTS |
| 3608 | 3608 | GAYLORD OPRYLAND |
| 3612 | 3612 | MOVENPICK HOTELS |
| 3613 | 3613 | MICROTEL INN AND SUITES |
| 3615 | 3615 | TRAVELODGE |
| 3617 | 3617 | AMERICAS BEST VALUE INN |
| 3618 | 3618 | GREAT WOLF |
| 3619 | 3619 | ALOFT |
| 3621 | 3621 | EXTENDED STAY |
| 3623 | 3623 | DORINT HOTELS |
| 3625 | 3625 | HOTEL UNIVERSALE |
| 3628 | 3628 | EXCALIBUR HOTEL AND CASINO |
| 3629 | 3629 | DAN HOTELS |
| 3631 | 3631 | SLEEP INNS |
| 3632 | 3632 | PHOENICIAN |
| 3634 | 3634 | SWISSOTEL |
| 3635 | 3635 | RESO HOTELS |
| 3636 | 3636 | SAROVA HOTELS |
| 3637 | 3637 | RAMADA INNS & RAMADA LIMITED |
| 3638 | 3638 | HOWARD JOHNSON |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3639 | 3639 | MOUNT CHARLOTTE THISTLE |
| 3640 | 3640 | HYATT HOTELS |
| 3641 | 3641 | SOFITEL HOTELS |
| 3642 | 3642 | NOVOTEL HOTELS |
| 3643 | 3643 | STEIGENBERGER HOTELS |
| 3644 | 3644 | ECONO LODGES |
| 3645 | 3645 | QUEENS MOAT HOUSES |
| 3647 | 3647 | HUSA HOTELS |
| 3648 | 3648 | DE VERE HOTELS |
| 3649 | 3649 | RADISSON HOTELS |
| 3650 | 3650 | RED ROOF INNS |
| 3651 | 3651 | IMPERIAL LONDON HOTEL |
| 3652 | 3652 | EMBASSY HOTELS |
| 3653 | 3653 | PENTA HOTELS |
| 3654 | 3654 | LOEWS HOTELS |
| 3655 | 3655 | SCANDIC HOTELS |
| 3657 | 3657 | OBEROI HOTELS |
| 3659 | 3659 | TAJ HOTELS INTERNATIONAL |
| 3660 | 3660 | KNIGHTS INNS |
| 3661 | 3661 | METROPOLE HOTELS |
| 3662 | 3662 | CIRCUS CIRCUS HOTEL AND CASINO |
| 3663 | 3663 | HOTELES EL PRESIDENTE |
| 3665 | 3665 | HAMPTON INNS |
| 3667 | 3667 | LUXHOR HOTEL AND CASINO |
| 3668 | 3668 | MARITIM HOTELS |
| 3670 | 3670 | ARCADE HOTELS |
| 3672 | 3672 | CAMPANILE HOTELS |
| 3674 | 3674 | RANTASIPI HOTELS |
| 3676 | 3676 | MONTE CARLO HOTEL AND CASINO |
| 3677 | 3677 | CLIMAT DE FRANCE HOTELS |
| 3678 | 3678 | CUMULUS HOTELS |
| 3680 | 3680 | HOTEIS OTHAN |
| 3681 | 3681 | ADAMS MARK HOTELS |
| 3684 | 3684 | BUDGET HOST INNS |
| 3687 | 3687 | CLARION HOTELS |
| 3689 | 3689 | CONSORT HOTELS |
| 3690 | 3690 | COURTYARD BY MARRIOTT |
| 3692 | 3692 | DOUBLTREE HOTELS |
| 3693 | 3693 | DRURY INNS |
| 3694 | 3694 | ECONOMY INNS OF AMERICA |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3695 | 3695 | EMBASSY SUITES |
| 3698 | 3698 | HARLEY HOTELS |
| 3699 | 3699 | MIDWAY MOTOR LODGE |
| 3700 | 3700 | MOTEL 6 |
| 3703 | 3703 | RESIDENCE INNS |
| 3706 | 3706 | SHILO INNS |
| 3709 | 3709 | SUPER 8 MOTELS |
| 3710 | 3710 | THE RITZ CARLTON HOTELS |
| 3715 | 3715 | FAIRFIELD INN |
| 3716 | 3716 | CARLTON HOTELS |
| 3717 | 3717 | CITY LODGE HOTELS |
| 3719 | 3719 | PROTEA HOTELS |
| 3721 | 3721 | HILTON CONRAD |
| 3722 | 3722 | WYNDHAM HOTEL & RESORTS |
| 3723 | 3723 | RICA HOTELS |
| 3728 | 3728 | BALLY'S HOTEL AND CASINO |
| 3730 | 3730 | MGM GRAND HOTEL |
| 3731 | 3731 | HARRAH'S HOTELS AND CASINOS |
| 3732 | 3732 | OPRYLAND HOTEL |
| 3733 | 3733 | Boca Raton Resort |
| 3736 | 3736 | Colorado Belle Edgewater Resort |
| 3737 | 3737 | Riviera Hotel and Casino |
| 3738 | 3738 | Tropicana  Resort and Casino |
| 3739 | 3739 | Woodside Hotels and Resorts |
| 3740 | 3740 | MARRIOTT/TOWNPLACE SUITES |
| 3741 | 3741 | MILLENNIUM HOTELS |
| 3745 | 3745 | ST. REGIS HOTEL |
| 3750 | 3750 | CROWNE PLAZA HOTEL |
| 3751 | 3751 | HOMEWOOD SUITES |
| 3752 | 3752 | PEABODY HOTELS |
| 3754 | 3754 | AMELIA ISLAND PLANTATION |
| 3765 | 3765 | BELLAGIO |
| 3769 | 3769 | DISALLOWED - Stratosphere Hotel and Casino |
| 3770 | 3770 | SPRINGHILL SUITES |
| 3771 | 3771 | DISALLOWED - Ceasers Hotel and Casino |
| 3772 | 3772 | NEMACOLIN WOODLANDS |
| 3773 | 3773 | DISALLOWED - Venetian Resort, Hotel and Casino |
| 3774 | 3774 | DISALLOWED - New York - New York Hotel and Casino |
| 3775 | 3775 | SANDS RESORT |
| 3777 | 3777 | MANDALAY BAY RESORT |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 3778 | 3778 | FOUR POINTS HOTELS |
| 3779 | 3779 | W HOTELS |
| 3780 | 3780 | DISNEY RESORTS |
| 3782 | 3782 | ROSEN HOTELS & RESORTS |
| 3783 | 3783 | TOWN AND COUNTRY RESORT |
| 3784 | 3784 | FIRST HOSPITALITY HOTELS |
| 3785 | 3785 | OUTRIGGER HOTELS AND RESORTS |
| 3786 | 3786 | OHANA HOTELS OF HAWAII |
| 3790 | 3790 | RAFFLES HOTEL |
| 3791 | 3791 | Staybridge Suites |
| 3792 | 3792 | Claridge Casino Hotel |
| 3793 | 3793 | Flamingo Hotels |
| 3794 | 3794 | Grand Casino Hotels |
| 3795 | 3795 | Paris Las Vegas Hotel |
| 3796 | 3796 | Peppermill Hotel Casino |
| 3797 | 3797 | Atlantic City Hilton Resorts |
| 3798 | 3798 | Embassy Vacation Resort |
| 3799 | 3799 | Hale Koa Hotel |
| 3801 | 3801 | WILDERNESS HOTEL AND RESORT |
| 3802 | 3802 | THE PALACE HOTEL |
| 3808 | 3808 | LXR (LUXURY RESORTS) |
| 3811 | 3811 | PREMIER TRAVEL INN |
| 3812 | 3812 | HYATT PLACE |
| 3813 | 3813 | HOTEL INDIGO |
| 3814 | 3814 | THE ROOSEVELT HOTEL NY |
| 3819 | 3819 | OXFORD SUITES |
| 3822 | 3822 | CROSSLAND |
| 4011 | 4011 | Railroads |
| 4111 | 4111 | Commuter Transport, Ferries |
| 4112 | 4112 | Passenger Railways |
| 4119 | 4119 | Ambulance Services |
| 4121 | 4121 | Taxicabs/Limousines |
| 4131 | 4131 | Bus Lines |
| 4214 | 4214 | Motor Freight Carriers and Trucking - Local and Long Distance, Moving and Storage Companies, and Local Delivery Services |
| 4215 | 4215 | Courier Services |
| 4225 | 4225 | Public Warehousing and Storage - Farm Products, Refrigerated Goods, Household Goods, and Storage |
| 4411 | 4411 | Cruise Lines |
| 4457 | 4457 | Boat Rentals and Leases |
| 4468 | 4468 | Marinas, Service and Supplies |
| 4511 | 4511 | Airlines, Air Carriers |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 4582 | 4582 | Airports, Flying Fields |
| 4722 | 4722 | Travel Agencies, Tour Operators |
| 4723 | 4723 | TUI Travel - Germany |
| 4761 | 4761 | TRANSPORTATION/TRAVEL-RELATED ARRANGEMENT |
| 4784 | 4784 | Tolls/Bridge Fees |
| 4789 | 4789 | Transportation Services (Not Elsewhere Classified) |
| 4812 | 4812 | Telecommunication Equipment and Telephone Sales |
| 4813 | 4813 | Special Telecom Merchants |
| 4814 | 4814 | Telecommunication Services |
| 4816 | 4816 | Computer Network Services |
| 4821 | 4821 | Telegraph Services |
| 4829 | 4829 | Money Transfer, Money Orders - Merchant |
| 4899 | 4899 | Cable, Satellite, and Other Pay Television and Radio |
| 4900 | 4900 | Utilities |
| 5013 | 5013 | Motor Vehicle Supplies and New Parts |
| 5021 | 5021 | Office and Commercial Furniture |
| 5039 | 5039 | Construction Materials (Not Elsewhere Classified) |
| 5044 | 5044 | Photographic, Photocopy, Microfilm Equipment, and Supplies |
| 5045 | 5045 | Computers, Peripherals, and Software |
| 5046 | 5046 | Commercial Equipment (Not Elsewhere Classified) |
| 5047 | 5047 | Medical, Dental, Ophthalmic, and Hospital Equipment and Supplies |
| 5051 | 5051 | Metal Service Centers |
| 5065 | 5065 | Electrical Parts and Equipment |
| 5072 | 5072 | Hardware, Equipment, and Supplies |
| 5074 | 5074 | Plumbing, Heating Equipment, and Supplies |
| 5085 | 5085 | Industrial Supplies (Not Elsewhere Classified) |
| 5094 | 5094 | Precious Stones and Metals, Watches and Jewelry |
| 5099 | 5099 | Durable Goods (Not Elsewhere Classified) |
| 5111 | 5111 | Stationary, Office Supplies, Printing and Writing Paper |
| 5122 | 5122 | Drugs, Drug Proprietaries, and Druggist Sundries |
| 5131 | 5131 | Piece Goods, Notions, and Other Dry Goods |
| 5137 | 5137 | Uniforms, Commercial Clothing |
| 5139 | 5139 | Commercial Footwear |
| 5169 | 5169 | Chemicals and Allied Products (Not Elsewhere Classified) |
| 5172 | 5172 | Petroleum and Petroleum Products |
| 5192 | 5192 | Books, Periodicals, and Newspapers |
| 5193 | 5193 | Florists Supplies, Nursery Stock, and Flowers |
| 5198 | 5198 | Paints, Varnishes, and Supplies |
| 5199 | 5199 | Nondurable Goods (Not Elsewhere Classified) |
| 5200 | 5200 | Home Supply Warehouse Stores |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 5211 | 5211 | Lumber, Building Materials Stores |
| 5231 | 5231 | Glass, Paint, and Wallpaper Stores |
| 5251 | 5251 | Hardware Stores |
| 5261 | 5261 | Nurseries, Lawn and Garden Supply Stores |
| 5271 | 5271 | Mobile Home Dealers |
| 5300 | 5300 | Wholesale Clubs |
| 5309 | 5309 | Duty Free Stores |
| 5310 | 5310 | Discount Stores |
| 5311 | 5311 | Department Stores |
| 5331 | 5331 | Variety Stores |
| 5382 | 5382 | Antique Shops - Sales, Repairs, and Restoration Services |
| 5399 | 5399 | Miscellaneous General Merchandise |
| 5411 | 5411 | Grocery Stores, Supermarkets |
| 5422 | 5422 | Freezer and Locker Meat Provisioners |
| 5441 | 5441 | Candy, Nut, and Confectionery Stores |
| 5451 | 5451 | Dairy Products Stores |
| 5462 | 5462 | Bakeries |
| 5499 | 5499 | Miscellaneous Food Stores - Convenience Stores and Specialty Markets |
| 5511 | 5511 | Car and Truck Dealers (New & Used) Sales, Service, Repairs Parts and Leasing |
| 5521 | 5521 | Car and Truck Dealers (Used Only) Sales, Service, Repairs Parts and Leasing |
| 5531 | 5531 | Auto and Home Supply Stores |
| 5532 | 5532 | Automotive Tire Stores |
| 5533 | 5533 | Automotive Parts and Accessories Stores |
| 5541 | 5541 | Service Stations |
| 5542 | 5542 | Automated Fuel Dispensers |
| 5551 | 5551 | Boat Dealers |
| 5561 | 5561 | Motorcycle Shops, Dealers |
| 5571 | 5571 | Motorcycle Shops and Dealers |
| 5592 | 5592 | Motor Homes Dealers |
| 5598 | 5598 | Snowmobile Dealers |
| 5599 | 5599 | Miscellaneous Auto Dealers |
| 5611 | 5611 | Men’s and Boy’s Clothing and Accessories Stores |
| 5621 | 5621 | Women’s Ready-To-Wear Stores |
| 5631 | 5631 | Women’s Accessory and Specialty Shops |
| 5641 | 5641 | Children’s and Infant’s Wear Stores |
| 5651 | 5651 | Family Clothing Stores |
| 5655 | 5655 | Sports and Riding Apparel Stores |
| 5661 | 5661 | Shoe Stores |
| 5681 | 5681 | Furriers and Fur Shops |
| 5691 | 5691 | Men’s, Women’s Clothing Stores |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 5697 | 5697 | Tailors, Alterations |
| 5698 | 5698 | Wig and Toupee Stores |
| 5699 | 5699 | Miscellaneous Apparel and Accessory Shops |
| 5712 | 5712 | Furniture, Home Furnishings, and Equipment Stores, Except Appliances |
| 5713 | 5713 | Floor Covering Stores |
| 5714 | 5714 | Drapery, Window Covering, and Upholstery Stores |
| 5718 | 5718 | Fireplace, Fireplace Screens, and Accessories Stores |
| 5719 | 5719 | Miscellaneous Home Furnishing Specialty Stores |
| 5722 | 5722 | Household Appliance Stores |
| 5732 | 5732 | Electronics Stores |
| 5733 | 5733 | Music Stores-Musical Instruments, Pianos, and Sheet Music |
| 5734 | 5734 | Computer Software Stores |
| 5735 | 5735 | Record Stores |
| 5811 | 5811 | Caterers |
| 5812 | 5812 | Eating Places, Restaurants |
| 5813 | 5813 | Drinking Places |
| 5814 | 5814 | Fast Food Restaurants |
| 5815 | 5815 | Digital Goods - Audiovisual Medai |
| 5816 | 5816 | Digital Goods - Games |
| 5817 | 5817 | Digital Goods - Software |
| 5818 | 5818 | Digital Goods - Multi Categorry |
| 5912 | 5912 | Drug Stores and Pharmacies |
| 5921 | 5921 | Package Stores-Beer, Wine, and Liquor |
| 5931 | 5931 | Used Merchandise and Secondhand Stores |
| 5932 | 5932 | Antique Shops |
| 5933 | 5933 | Pawn Shops |
| 5935 | 5935 | Wrecking and Salvage Yards |
| 5937 | 5937 | Antique Reproductions |
| 5940 | 5940 | Bicycle Shops |
| 5941 | 5941 | Sporting Goods Stores |
| 5942 | 5942 | Book Stores |
| 5943 | 5943 | Stationery Stores, Office, and School Supply Stores |
| 5943 | 5968 | 5943-5968 |
| 5944 | 5944 | Jewelry Stores, Watches, Clocks, and Silverware Stores |
| 5945 | 5945 | Hobby, Toy, and Game Shops |
| 5946 | 5946 | Camera and Photographic Supply Stores |
| 5947 | 5947 | Gift, Card, Novelty, and Souvenir Shops |
| 5948 | 5948 | Luggage and Leather Goods Stores |
| 5949 | 5949 | Sewing, Needlework, Fabric, and Piece Goods Stores |
| 5950 | 5950 | Glassware, Crystal Stores |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 5960 | 5960 | Direct Marketing - Insurance Services |
| 5961 | 5961 | MAIL ORDER HOUSES INCL CATALOG ORDER STORES BOOK/RECORD CLUB |
| 5962 | 5962 | Direct Marketing - Travel |
| 5963 | 5963 | Door-To-Door Sales |
| 5964 | 5964 | Direct Marketing - Catalog Merchant |
| 5965 | 5965 | Direct Marketing - Combination Catalog and Retail Merchant |
| 5966 | 5966 | Direct Marketing - Outbound Tele |
| 5967 | 5967 | Direct Marketing - Inbound Tele |
| 5968 | 5968 | Direct Marketing - Subscription |
| 5969 | 5969 | Direct Marketing - Other |
| 5970 | 5970 | Artist’s Supply and Craft Shops |
| 5971 | 5971 | Art Dealers and Galleries |
| 5972 | 5972 | Stamp and Coin Stores |
| 5973 | 5973 | Religious Goods Stores |
| 5975 | 5975 | Hearing Aids Sales and Supplies |
| 5976 | 5976 | Orthopedic Goods - Prosthetic Devices |
| 5977 | 5977 | Cosmetic Stores |
| 5978 | 5978 | Typewriter Stores |
| 5983 | 5983 | Fuel Dealers (Non Automotive) |
| 5992 | 5992 | Florists |
| 5993 | 5993 | Cigar Stores and Stands |
| 5994 | 5994 | News Dealers and Newsstands |
| 5995 | 5995 | Pet Shops, Pet Food, and Supplies |
| 5996 | 5996 | Swimming Pools Sales |
| 5997 | 5997 | Electric Razor Stores |
| 5998 | 5998 | Tent and Awning Shops |
| 5999 | 5999 | Miscellaneous Specialty Retail |
| 6010 | 6010 | Financial Institutions - Manual Cash Disbursements |
| 6011 | 6011 | Automated Cash Disburse |
| 6012 | 6012 | Financial Institutions - Merchendise and Services |
| 6050 | 6050 | Quasi Cash, Money Orders - Member Financial Institution |
| 6051 | 6051 | Quasi Cash, Money Orders - Non-Financial institution |
| 6211 | 6211 | Security Brokers/Dealers |
| 6300 | 6300 | Insurance Underwriting, Premiums |
| 6381 | 6381 | Insurance Premiums |
| 6399 | 6399 | Insurance - Default |
| 6513 | 6513 | Real Estate Agents and Managers - Rentals |
| 6529 | 6529 | Remote Stored Value Load--MemberFinancial Inst |
| 6530 | 6530 | Remote Stored Value Load--Merchant |
| 6531 | 6531 | Payment Service Provider - MoneyTransfer For A Purchase |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 6532 | 6532 | Payment Service Provider - MemberFinancial Inst. - Pymt Trans. |
| 6533 | 6533 | Payment Service Provider - Merchant - Payment Transaction |
| 6534 | 6534 | Money Transfer - Member FinancialInstitution |
| 6535 | 6535 | Value Purchase-Member Financial Institution |
| 6538 | 6538 | MASTERCARD MONEYSEND FUNDING TRANSACTION |
| 6540 | 6540 | POI Funding Transactions (Excluding MasterCard MoneySend) |
| 6760 | 6760 | Savings Bonds |
| 7011 | 7011 | Hotels, Motels, and Resorts |
| 7012 | 7012 | Timeshares |
| 7032 | 7032 | Sporting/Recreation Camps |
| 7033 | 7033 | Trailer Parks, Campgrounds |
| 7210 | 7210 | Laundry, Cleaning Services |
| 7211 | 7211 | Laundries |
| 7216 | 7216 | Dry Cleaners |
| 7217 | 7217 | Carpet/Upholstery Cleaning |
| 7221 | 7221 | Photographic Studios |
| 7230 | 7230 | Barber and Beauty Shops |
| 7251 | 7251 | Shoe Repair/Hat Cleaning |
| 7261 | 7261 | Funeral Services, Crematories |
| 7273 | 7273 | Dating/Escort Services |
| 7276 | 7276 | Tax Preparation Services |
| 7277 | 7277 | Counseling Services |
| 7278 | 7278 | Buying/Shopping Services |
| 7296 | 7296 | Clothing Rental |
| 7297 | 7297 | Massage Parlors |
| 7298 | 7298 | Health and Beauty Spas |
| 7299 | 7299 | Miscellaneous General Services |
| 7311 | 7311 | Advertising Services |
| 7321 | 7321 | Credit Reporting Agencies |
| 7333 | 7333 | Commercial Photography, Art and Graphics |
| 7338 | 7338 | Quick Copy, Repro, and Blueprint |
| 7339 | 7339 | Secretarial Support Services |
| 7342 | 7342 | Exterminating Services |
| 7349 | 7349 | Cleaning and Maintenance |
| 7361 | 7361 | Employment/Temp Agencies |
| 7372 | 7372 | Computer Programming |
| 7375 | 7375 | Information Retrieval Services |
| 7379 | 7379 | Computer Repair |
| 7392 | 7392 | Consulting, Public Relations |
| 7393 | 7393 | Detective Agencies |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 7394 | 7394 | Equipment Rental |
| 7395 | 7395 | Photo Developing |
| 7399 | 7399 | Miscellaneous Business Services |
| 7511 | 7511 | Truck Stop |
| 7512 | 7512 | CAR RENTAL AGENCIES -- NOT LISTED BELOW |
| 7513 | 7513 | Truck/Utility Trailer Rentals |
| 7519 | 7519 | Recreational Vehicle Rentals |
| 7521 | 7521 | Car Rental Agencies |
| 7523 | 7523 | Parking Lots, Garages |
| 7531 | 7531 | Auto Body Repair Shops |
| 7534 | 7534 | Tire Retreading and Repair |
| 7535 | 7535 | Auto Paint Shops |
| 7535 | 7535 | Paint Shop Automotives |
| 7538 | 7538 | Auto Service Shops |
| 7542 | 7542 | Car Washes |
| 7549 | 7549 | Towing Services |
| 7622 | 7622 | Electronics Repair Shops |
| 7623 | 7623 | A/C, Refrigeration Repair |
| 7629 | 7629 | Small Appliance Repair |
| 7631 | 7631 | Watch/Jewelry Repair |
| 7641 | 7641 | Furniture Repair, Refinishing |
| 7692 | 7692 | Welding Repair |
| 7699 | 7699 | Miscellaneous Repair Shops |
| 7800 | 7800 | Government Owned Lottery |
| 7801 | 7801 | Internet Gambling |
| 7802 | 7802 | Government Licensed Horse/Dog Racing |
| 7829 | 7829 | Picture/Video Production |
| 7832 | 7832 | Motion Picture Theaters |
| 7841 | 7841 | Video Tape Rental Stores |
| 7911 | 7911 | Dance Hall, Studios, Schools |
| 7922 | 7922 | Theatrical Ticket Agencies |
| 7929 | 7929 | Bands, Orchestras |
| 7932 | 7932 | Billiard/Pool Establishments |
| 7933 | 7933 | Bowling Alleys |
| 7941 | 7941 | Sports Clubs/Fields |
| 7991 | 7991 | Tourist Attractions and Exhibits |
| 7992 | 7992 | Golf Courses - Public |
| 7993 | 7993 | Video Amusement Game Supplies |
| 7994 | 7994 | Video Game Arcades |
| 7995 | 7995 | Betting/Casino Gambling |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 7995 | 7995 | DISALLOWED - Gambling Transactions |
| 7996 | 7996 | Amusement Parks/Carnivals |
| 7997 | 7997 | Country Clubs |
| 7998 | 7998 | Aquariums |
| 7999 | 7999 | Miscellaneous Recreation Services |
| 8011 | 8011 | Doctors |
| 8021 | 8021 | Dentists, Orthodontists |
| 8031 | 8031 | Osteopaths |
| 8041 | 8041 | Chiropractors |
| 8042 | 8042 | Optometrists, Ophthalmologist |
| 8043 | 8043 | Opticians, Eyeglasses |
| 8049 | 8049 | Chiropodists, Podiatrists |
| 8050 | 8050 | Nursing/Personal Care |
| 8062 | 8062 | Hospitals |
| 8071 | 8071 | Medical and Dental Labs |
| 8099 | 8099 | Medical Services |
| 8111 | 8111 | Legal Services, Attorneys |
| 8211 | 8211 | Elementary, Secondary Schools |
| 8220 | 8220 | Colleges, Universities |
| 8241 | 8241 | Correspondence Schools |
| 8244 | 8244 | Business/Secretarial Schools |
| 8249 | 8249 | Vocational/Trade Schools |
| 8299 | 8299 | Educational Services |
| 8351 | 8351 | Child Care Services |
| 8398 | 8398 | Charitable and Social Service Organizations - Fundraising |
| 8641 | 8641 | Civic, Social, Fraternal Associations |
| 8651 | 8651 | Political Organizations |
| 8661 | 8661 | Religious Organizations |
| 8675 | 8675 | Automobile Associations |
| 8699 | 8699 | Membership Organizations |
| 8734 | 8734 | Testing Laboratories |
| 8911 | 8911 | Architectural/Surveying Services |
| 8931 | 8931 | Accounting/Bookkeeping Services |
| 8999 | 8999 | Professional Services |
| 9211 | 9211 | Court Costs, Including Alimony and Child Support - Courts of Law |
| 9222 | 9222 | Fines - Government Administrative Entities |
| 9223 | 9223 | Bail and Bond Payments (payment to the surety for the bond, not the actual bond paid to the government agency) |
| 9311 | 9311 | Tax Payments - Government Agencies |
| 9399 | 9399 | Government Services (Not Elsewhere Classified) |
| 9402 | 9402 | Postal Services - Government Only |

| MCC Lower | MCC Upper | MCC Category Description |
|---|---|---|
| 9405 | 9405 | U.S. Federal Government Agencies or Departments |
| 9700 | 9700 | Automated Referral Service |
| 9701 | 9701 | Visa Credential Service |
| 9702 | 9702 | Emergency Services |
| 9751 | 9751 | U.K. Supermarkets - Electronic HotFile |
| 9752 | 9752 | U.K. Petrol Stations - ElectronicHot File |
| 9754 | 9754 | GAMBLING-HORSE, DOG RACING-ST LOTTERY |
| 9950 | 9950 | Intra-Company Purchases |
| 9999 | 9999 | CLIENT DEFINED MCC |

# 4.19 Misc_TLV_Data Field

The Misc_TLV_Data field is used for sending rarely used fields that can normally be ignored.

For the format of this field, see section Data Types: *TLV10*.

The table below lists the tag values (10 characters), and their meaning.

**Note:** As GPS may add tags at any time (without a specification update) your systems should ignore any unknown tags, to avoid errors.

| Tag | Value Format | Description |
|---|---|---|
| V125030003 | N(16,16) | Visa Original Trace ID, exactly as received from Visa.<br>For information only - Traceid_Original is the recommended field to use instead, this can be used if you suspect Traceid_Original is not as expected. |
| CGBRDEBT01 | ANS(1,35) | UK Debt repayment - Recipient Last Name<br>(Specific to UK country) |
| CGBRDEBT02 | ANS(1,10) | UK Debt repayment - Recipient Postal Code<br>(Specific to UK country) |
| CGBRDEBT03 | N(8,8) | UK Debt repayment - Recipient Date of Birth YYYYMMDD<br>(Specific to UK country) |
| CGBRDEBT04 | ANS(1,20) | UK Debt repayment - Recipient Account Number<br>(Specific to UK country) |
| Any other value | Anything | Unknown |

The following formats are intended for future Mastercard and Visa raw data, if they are required:

| Data Source | Tag Construction plan |
|---|---|
| Banknet<br>(Mastercard online authorisations) | 'M' + 3 digit DE + 3 digit subelement + 3 digit subfield |
| Visa Base1<br>(visa online authorisations) | 'V' + 3 digit DE + 2 hexdigit dataset ID + 4 hexdigit Tag<br>(if sending all datasets, 'xx' will be used as the dataset ID)<br>(if sending all tags, 'xxxx' will be used as the Tag) |
| GCMS<br>(Mastercard clearing) | 'm' + 3 digit DE + 4 digit PDS + 2 digit subfield |
| Visa Base 2<br>(Visa clearing) | 'v' + 2 digit TC + 1 digit TCR + 3 digit start offset + 3 digit end offset |
| Specific to a particular country | 'C' + 3-alpha-country-code + 6 char identifier |
| Other | Initial character will not be any of 'M','V','m','v','C' |

# 4.20 Payment Token Fields

This section provides details of the fields which hold payment token information.

## 4.20.1 PaymentToken_activationMethod

Describes the method used to activate the payment token. The table below describes the valid options and the content for each method.

| PaymentToken_activationMethod | Description | Content included |
|---|---|---|
| 0 | None | Empty |
| 1 | SMS to mobile | Mobile phone number held on GPS for the cardholder |
| 2 | Email | Email address held on GPS for the cardholder |
| 3 | Cardholder to call automated call centre | Call centre number |
| 4 | Cardholder to call normal call centre | Call centre number |
| 5 | Website | Website URL |
| 6 | Mobile Application | Mobile application reference |
| 7 | Cardholder will receive voice call | Mobile phone number held on GPS for the cardholder |

## 4.20.2 PaymentToken_deviceType

Describes the type of device the payment token is installed on. Below is a list of possible values.

| PaymentToken_deviceType | Description |
|---|---|
| A | Clothing / Apparel |
| B | Media/Gaming device, eg XBox, TV, set-top box |
| C | Card |
| D | Domestic Application, eg Fridge, washing machine |
| F | Fob or Key-Fob |
| G | Mobile Tag, Case or Sleeve |
| H | Fashion Accessory, eg Handbag, glasses |
| J | Jewelry, eg necklace, rings, bracelets |
| M | Mobile phone |
| P | Personal Computer / laptop |
| R | Wristband |
| S | Sticker |
| T | Tablet |
| U | Unknown |
| V | Vehicle |
| W | Watch |
| X | Mobile phone or Tablet |
| other | Ask GPS for any additional values |

## 4.20.3 PaymentToken_type

Describes the type of payment token. Below is a list of possible values.

| PaymentToken_type | Description |
|---|---|
| BW | Browser Accessible Wallet |
| C | Contactless device PAN |
| CF | Card on File PAN |
| CL | Cloud-base payments PAN |
| P | Real PAN |
| SE | Secure Element PAN |
| U | Unknown - other PAN mapping not otherwise defined |
| V | Virtual PAN |

## 4.20.4 PaymentToken_creatorStatus

Describes the status of the payment token on the token creator's system. Below is a list of possible values.

> **Note:** GPS receive this value from the token creator's system.

| PaymentToken_creatorStatus | Description | Is this status reversible? |
|---|---|---|
| A | Active | Yes |
| D | Deleted on cardholder device | No |
| I | Inactive | Yes |
| N | Not Tokenised | Yes |
| S | Suspended | Yes |
| X | Deactivated | No |

## 4.20.5 PaymentToken_wallet

Describes the type of eWallet the payment token belongs to. Below is a list of possible values.

| PaymentToken_wallet | Description |
|---|---|
| ANDROID | Google Pay Wallet<br>(known before 20/2/2018 as "Android Pay Wallet") |
| APPLE | Apple Pay Wallet |
| FITBIT | Fitbit Pay Wallet |
| MASTERPASS | MasterPass from Mastercard |
| MRCHTOKEN | Merchant Tokenisation Program |
| PAYNETPHYR | Phyre |
| SAMSUNG | Samsung Pay Wallet |
| GARMIN | Garmin Pay |
| MTBLANC | Montblanc Pay |
| STOCARD | Stocard Pay Wallet |
| CHUNGHWA | Chungwa |
| LGPAY | LG Electronics |
| MICROSOFT | Microsoft |
| RELIANCE | Reliance |
| SAMA | Saudi Arabia Monetary Authority |
| VISA_DCA | Visa Digital Commerce App |
| other | Ask GPS for any additional wallets |

# 4.21 PIN Fields

The card's Primary Identification Number (PIN) is encapsulated in a PIN block and then encrypted using the Triple-DES algorithm.

The Data Encryption Standard (DES), including Triple-DES, is described by the United States National Institution of Standards and Technology (NIST) in document NIST 800-67 which is available here: https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-67r1.pdf

## 4.21.1 PIN Block Formats

The authorisation request message field PIN_Format describes the PIN block format as follows:

**Note:** This version of the specification only sends PIN blocks in format 1 (ISO9564-1 Format 1.) This ensures that PINs are properly protected and the receiver can decrypt them without needing to know the PAN. ISO9564-1 is available from https://www.iso.org/home.html

| PIN_Format | Format | Example |
|---|---|---|
| 0 | ISO 9564-1 Format 0 | PAN = 5299887766554439<br>PIN = 223344<br>Plaintext PIN field = '0'+ PIN length (4-C) + PIN + 'F's padding to 16 hex digits<br>= 06223344FFFFFFFF<br>Account number field = '0000' + rightmost 12 digits of the PAN excluding the check digit<br>= 0000988776655443<br>Now XOR the 2 results to get the PIN block:<br>06223344FFFFFFFF xor 0000988776655443<br>=> PIN BLOCK = 0622ABC3899AABBC |
| 1 | ISO 9564-1 Format 1 | PIN BLOCK = '1' + PIN length (4-C) + PIN + random padding to 16 hex digits<br>e.g. PIN = 223344<br>=> 8 random padding bytes needed, e.g. 358C44BF<br>=> PIN BLOCK = 16223344358C44BF |
| 2 | ISO 9564-1 Format 2<br>(also see EMV 4.3 book 3 VERIFY command) | PIN BLOCK = '2' + PIN length (4-C) + PIN + 'F' pad nibbles up to 16 hex<br>e.g. PIN = 223344<br>=> PIN BLOCK = '2' + '6' + '223344' + 'FFFFFFFF'<br>=> PIN BLOCK = 26223344FFFFFFFF |
| 3 | ISO 9564-1 Format 3 | PAN = 5299887766554439<br>PIN = 223344<br>Plaintext PIN field = '3'+ PIN length (4-C) + 'A-F' random padding to 16 hex digits<br>= 36223344CBADFEEA<br>Account number field = '0000' + rightmost 12 digits of the PAN excluding the check digit<br>= 0000988776655443<br>36223344CBADFEEA xor 0000988776655443<br>=> PIN BLOCK = 3622ABC3BDC8AAA9 |

## 4.21.2 PIN Encryption Example

In this example:

- PIN_Format =1 (ISO 9564-1 Format 1)
- PIN = 223344
- Random padding nibbles for PIN block = 358C44BF
- EHI PIN Key established between GPS and 3rd party is Triple length 3DES key = 0123456789abcdeffedcba9876543210B5BC921385681AB9

=> PIN BLOCK = 16223344358C44BF

=> PIN field (PIN block 3DES encrypted with EHI PIN Key 0123456789abcdeffedcba9876543210B5BC921385681AB9)

=> PIN field = 479ECEE7AEA0EBAE

## 4.21.3 Establishment of EHI PIN Keys

Before you can transfer PIN data over EHI, the following needs to have occurred first:

- Establishment of a triple length DES key, which is used to transfer PIN encryption keys for the EHI Zone. (Zone Master Key.)
- Transmission of a PIN key encrypted under the EHI Zone key in ECB mode using 3DES.
- All PINs will be encrypted under the PIN key.

This process is expected to be done manually, as it will be done rarely.

For example:

1. New random 3DES triple length EHI Zone key of clear value '022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02' is generated by GPS.
2. This is split into 3 clear XOR components of:
    1. D7E307AEDA98D35498E986145A735D367FBA8D6BF0C3ED30
    2. 92464A17A5C6CC2CEC25CC381617A282A6F0E69ABE692E02
    3. 47803B6687EDCC7062EF65AA7BCFF2CBB188215FE6018C30
3. These 3 XOR components are delivered to the 3rd party, to separate people independently.
4. Each 3rd party who has received an XOR component enters them into their Hardware Security Module (HSM).
5. The 3rd party HSM now has the clear Zone Master key of 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02 installed.
6. GPS then generate a random triple length EHI PIN Key of clear value '20438354E545C7CD2FB5B9F84CE385C10431A91CF9B98FA5'.
7. GPS then transmit the EHI PIN key encrypted using Triple-DES in ECB mode under the EHI Zone Key. EHI PIN Key under Zone key is '898AEA86B81C1CA61E575F208E0535A25A1E84D4E88B9097'.
8. The 3rd party then sends this EHI PIN Key under Zone key value to their HSM.
9. 3rd party HSM now has the clear EHI PIN Key of '20438354E545C7CD2FB5B9F84CE385C10431A91CF9B98FA5'.
10. 3rd party can now use this to decrypt the PIN field.

## 4.21.4 Worked example of 3DES ECB encrypting the PIN key under the Master Key

Using the above example, this is how you encrypt:

- the PIN key (20438354E545C7CD2FB5B9F84CE385C10431A91CF9B98FA5)
- under the Master key (022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02).

Encryption mode is ECB (Electronic Code Book.) This means each 8-byte input block is separately encrypted under the encryption key.

Starting point:

- Clear Zone Master key = 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02 (Triple length DES key)
- Clear Zone PIN key = 20438354E545C7CD2FB5B9F84CE385C10431A91CF9B98FA5 (Triple length DES key)

Steps:

1. First 8 bytes of PIN key = 20438354E545C7CD
   Triple DES encrypt 20438354E545C7CD under 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02
   = 898AEA86B81C1CA6
2. Second 8 bytes of PIN key = 2FB5B9F84CE385C1
   Triple DES encrypt 2FB5B9F84CE385C1 under 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02
   = 1E575F208E0535A2
3. Third 8 bytes of PIN key = 0431A91CF9B98FA5
   Triple DES encrypt 0431A91CF9B98FA5 under 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02
   = 5A1E84D4E88B9097
4. Now concatenate the 3 encrypted results = 898AEA86B81C1CA6 1E575F208E0535A2 5A1E84D4E88B9097
5. PIN key under Master Key = 898AEA86B81C1CA61E575F208E0535A25A1E84D4E88B9097

## 4.21.5 Example Triple DES operations with a triple length key

Various examples above involve a triple length DES key encrypting or decrypting an 8-byte block.

Basic Algorithm:

- A Triple length key is 3 DES (8-byte) keys concatenated: K1, K2, K3
- Encryption of Data D = $ENCRYPT_{K3}(DECRYPT_{K2}(ENCRYPT_{K1}(D)))$
- Decryption of Data D = $DECRYPT_{K1}(ENCRYPT_{K2}(DECRYPT_{K3}(D)))$

This is an example of how that works.

Suppose the Triple Length key = 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02 (e.g. same as clear Zone Master Key above)

Suppose 8-byte block = 20438354E545C7CD (e.g. same as first 8 bytes of the clear PIN key).

## Triple DES Encryption

To encrypt this block with the triple length key:

1. DES Encrypt 20438354E545C7CD with 1st part of Triple length key (022576DFF8B3D308)
   = 23085EE9F52CE247
2. DES Decrypt the result of above (23085EE9F52CE247) with 2nd part of Triple length key (16232F8637AB0D7F)
   = 2A5D03C4B8A9F91D
3. DES Encrypt the result of above (2A5D03C4B8A9F91D) with 3rd part of Triple length key (68C24AAEA8AB4F02)
   = 898AEA86B81C1CA6

So the 3DES encryption of 20438354E545C7CD, with key 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02, is 898AEA86B81C1CA6

## Triple DES Decryption

As an example, we can decrypt the result of above (898AEA86B81C1CA6) with the same triple length key (022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02)
To decrypt this block with the triple length key:

1. DES Decrypt 898AEA86B81C1CA6 with 3rd part of Triple length key (68C24AAEA8AB4F02)
   = 2A5D03C4B8A9F91D
2. DES Encrypt the result of above (2A5D03C4B8A9F91D) with 2nd part of Triple length key (16232F8637AB0D7F)
   = 23085EE9F52CE247
3. DES Decrypt the result of above (23085EE9F52CE247) with 1st part of Triple length key (022576DFF8B3D308)
   = 20438354E545C7CD

So the 3DES decryption of 898AEA86B81C1CA6, with key 022576DFF8B3D30816232F8637AB0D7F68C24AAEA8AB4F02, is 20438354E545C7CD.

# 4.22 POS_Data_DE61

The table below describes the POS_Data_DE61 field, used for Mastercard Authorisation related message. (See also Get Transaction Message fields: POS_Data_DE61)

All subfields are concatenated together in order. Subfields begin at 1. Only the first 9 subfields (i.e. subfields 1 to 9, the first 9 characters) in the field are mandatory.For example, you might have just the first 9 subfields, or first 10, or first 11, or first 12, or first 13 or all 14.

**Note:** This field is deprecated in EHI version 3.0.

| subfield | Name | Format | Description / Valid Values |
|---|---|---|---|
| 1 | POS Terminal Attendance | N(1,1) | POS Terminal Attendance - indicates if the card acceptor is:<br>0 = Attended terminal<br>1 = Unattended terminal (cardholder-activated terminal [CAT], home PC, mobile phone, PDA)<br>2 = No terminal used (voice/audio response unit [ARU] authorisation) |
| 2 | RFU | N(1,1) | 0 = Reserved for future use. |
| 3 | POS Terminal Location | N(1,1) | POS Terminal Location - indicates the terminal location:<br>0 = On premises of card acceptor facility<br>1 = Off premises of card acceptor facility (merchant terminal–remote location)<br>2 = Off premises of card acceptor facility (cardholder terminal including home PC, mobile phone, PDA)<br>3 = No terminal used (voice/ARU authorisation)<br>4 = On premises of card acceptor facility (cardholder terminal including home PC, mobile phone, PDA) |
| 4 | POS Cardholder Presence | AN(1,1) | POS Cardholder Presence - indicates whether the cardholder is present at the point of service and explains the condition if the cardholder is not present.<br>0 = Cardholder present<br>1 = Cardholder not present, unspecified<br>2 = Mail/facsimile order<br>3 = Phone/ARU order<br>4 = Standing order/recurring transactions<br>5 = Electronic order (home PC, Internet, mobile phone, PDA) |
| 5 | POS Card Presence | N(1,1) | POS Card Presence - indicates if the card is present at the point of service.<br>0 = Card present<br>1 = Card not present |
| 6 | POS Card Capture Capabilities | N(1,1) | POS Card Capture Capabilities - indicates whether the terminal has card capture capabilities.<br>0 = Terminal/operator has no card capture capability<br>1 = Terminal/operator has card capture capability |
| 7 | POS Transaction Status | N(1,1) | POS Transaction Status - indicates the purpose or status of the request.<br>0 = Normal request (original presentment)<br>2 = SecureCode phone order<br>3 = ATM installment inquiry<br>4 = Preauthorised request<br>6 = ATC update<br>8 = Account status inquiry service<br>9 = Tokenization request/notification |
| 8 | POS Transaction Security | N(1,1) | POS Transaction Security indicates the card acceptor's security level.<br>0 = No security concern<br>1 = Suspected fraud (merchant suspicious–code 10)<br>2 = ID verified |
| 9 | RFU | N(1,1) | 0 = Reserved for future use. |
| 10 | Cardholder-Activated Terminal Level | N(1,1) | Indicates whether the cardholder activated the terminal with the use of the card and the CAT security level.<br>0 = Not a CAT transaction<br>1 = Authorized Level 1 CAT: Automated dispensing machine with PIN<br>2 = Authorized Level 2 CAT: Self-service terminal<br>3 = Authorized Level 3 CAT: Limited-amount terminal<br>4 = Authorized Level 4 CAT: In-flight commerce<br>5 = Reserved<br>6 = Authorized Level 6 CAT: Electronic commerce<br>7 = Authorized Level 7 CAT: Transponder transaction<br>8 = Reserved for future use<br>9 = MPOS Acceptance Device |
| 11 | POS Card Data Input Capabilities | N(1,1) | Terminal capabilities for transferring the data on the card into the terminal.<br>0 = Unknown or unspecified<br>1 = No terminal used (voice/ARU authorization); server<br>2 = Magnetic stripe reader only<br>3 = Contactless M/Chip (Proximity Chip)<br>Terminal supports PayPass M/Chip and PayPass magstripe transactions. The terminal also may support other card input types, including contact transactions<br>4 = Contactless Magnetic Stripe (Proximity Chip) only<br>The terminal supports PayPass magstripe transactions. The terminal also may support other card input types, including contact transactions<br>5 = EMV specification (compatible chip reader) and magnetic stripe reader.<br>The terminal also may support contactless transactions; however contactless transactions should always be submitted with value 3 or 4.<br>6 = Key entry only<br>7 = Magnetic stripe reader and key entry |

| subfield | Name | Format | Description / Valid Values |
|---|---|---|---|
| | | | 8 = EMV specification (compatible chip reader), magnetic stripe reader and key entry. The terminal also may support contactless transactions; however contactless transactions should always be submitted with value 3 or 4.<br>9 = EMV specification (compatible chip reader) only - The terminal also may support contactless transactions; however contactless transactions should always be submitted with value 3 or 4.<br>DE 61, subfield 11 values 3, 4, 5, 8, and 9 can only be used if the terminal is chip certified by MasterCard. |
| 12 | POS Authorization Life Cycle | N(2,2) | Indicates the number of days pre-authorization will stay in effect. Used mainly for car rentals and hotel reservations.<br>Zeros indicate it does not apply. Zero fill or number of days. |
| 13 | POS Country Code | N(3,3) | ISO 3-digit numeric country code of the terminal location.<br>See Country Codes. |
| 14 | POS Postal Code | ANS (0,10) | Merchant postal code. |

# 4.23 POS_Data_DE22 in Authorisation Messages

The merchant name/location field (POS_Data_DE22) is made up of various subfields. (See also Get Transaction Message fields: POS_Data_DE22)

> **Note:** Similiar values are used by Visa and Mastercard, but there are some subtle differences.

## 4.23.1 POS_Data_DE22 Layout Format

The field for Mastercard Authorisation Messages consists of 3 decimal digits as follows:

| Position | Length | Description |
|---|---|---|
| 1-2 | 2 | PAN Entry Method<br>See POS_Data_DE22 positions 1-2: PAN Entry Method |
| 3 | 1 | PIN Entry Capability<br>See POS_Data_DE22 positions 3: Terminal PIN Entry Capability |

The field for Visa Authorisation Messagesconsists of 4 decimal digits as follows:

| Position | Length | Description |
|---|---|---|
| 1-2 | 2 | PAN Entry Method<br>See POS_Data_DE22 positions 1-2: PAN Entry Method |
| 3 | 1 | PIN Entry Capability<br>See POS_Data_DE22 positions 3: Terminal PIN Entry Capability |
| 4 | 1 | Filler - value '0' |

## 4.23.2 POS_Data_DE22 positions 1-2: PAN Entry Method

This field is formatted as follows:

| Value | Mastercard Description | Visa Description |
|---|---|---|
| 00 | Unknown or no terminal | Unknown or terminal not used |
| 01 | Manual Key Entry | (manual key entry) for application-based e-commerce transactions, and card-not-present transactions initiated with a token |
| 02 | Partial Magnetic Stripe Read | Magnetic stripe read; CVV checking may not be possible Plus transactions: Exact Track 2 contents read, but transaction is not eligible for CVV checking |
| 03 | Barcode | Optical code |
| 04 | OCR | Not valid |
| 05 | Contact EMV ICC | Integrated circuit card read; CVV or iCVV checking is possible |
| 06 | Contact EMV ICC (PAN mapping service applied by Network) | Not valid |
| 07 | Contactless EMV ICC | (contactless chip using VSDC rules) for transactions at contactless-enabled devices with a mobile-issued token payment |
| 08 | Contactless EMV ICC (PAN mapping service applied by Network) | Not valid |
| 10 | Credential-on-file<br>Indicates a Merchant is initiating a transaction on behalf of the Cardholder using credentials stored on file. | Credential-on-file<br>Indicates a Merchant is initiating a transaction on behalf of the Cardholder using credentials stored on file. |
| 79 | PAN+expdate key entered by Acquirer (PAN+expdate read from Magnetic Stripe and communicated verbally to acquirer who keyed in the transaction. Neither Track1 or Track2 will be present.) | Not valid |
| 80 | Magnetic Stripe (fallback from EMV ICC) | Not valid |
| 81 | e-commerce | Not valid |
| 82 | PAN data on file | Not valid |
| 90 | Magnetic Stripe Read | (magnetic stripe read; CVV check is possible; exact content of Track 1 or Track 2 included) |

| Value | Mastercard Description | Visa Description |
|---|---|---|
| 91 | Contactless Magnetic Stripe | (contactless chip using magnetic stripe data rules) for transactions at contactless-enabled devices with a mobile-issued token payment |
| 92 | Contactless Magnetic Stripe (PAN mapping service applied) | Not valid |
| 95 | Contact EMV ICC (something unreliable) | Integrated circuit card read; CVV or iCVV checking may not be possible |
| 96 | Stored Value from pre-registered checkout service | Not valid |

## 4.23.3 POS_Data_DE22 positions 3: Terminal PIN Entry Capability

This describes the capability of the Terminal to accept a PIN. The field is formatted as follows:

| Value | Mastercard Description | Visa Description |
|---|---|---|
| 0 | Unknown | Unknown |
| 1 | Terminal supports PIN. | Indicates that the point-of-transaction terminal can accept and forward an online PIN. |
| 2 | Terminal does not support PIN. | Indicates that the point-of-transaction terminal cannot accept and forward an online PIN. |
| 8 | Terminal supports PIN, but PIN PAD does not work currently. | Terminal PIN pad is down |

# 4.24 POS_Data_DE22 in Mastercard Financial Messages

**Note:** The POS_Data_DE22 field applies to Mastercard Financial Clearing messages only (i.e., MTID=1240, MTID=1442). For Visa, use GPS_POS_Data. (See also Get Transaction Message fields: POS_Data_DE22 and GPS_POS_Data)

The merchant name/location (POS_Data_DE22) field is made up of various subfields. Its format is based on ISO8583:1993 DE 22 specification, and consists of both:

- Terminal capabilities (what the terminal can do)
- Terminal methods (what the terminal did do, or what actually happened)

| Positions | Length | Field Name | Description / Valid Values |
|---|---|---|---|
| 1 | 1 | Card Data Input Capability | 0 = Unknown<br>1 = Manual, no terminal; server<br>2 = Magnetic stripe reader (MSR)<br>3 = Barcode<br>4 = OCR<br>5 = ICC<br>6 = PAN Key entry (PKE) only<br>A = Contactless MSR (possibility also optionally including ICC, MSR or PKE)<br>B = MSR + PKE<br>C = MSR, ICC, PKE<br>D = MSR + ICC<br>E = ICC + PKE<br>M = Contactless ICC + Contactless MSR (possibly also optionally including ICC, MSR or PKE)<br>V = Other |
| 2 | 1 | Cardholder Authentication Capability | 0 = No electronic authentication capability<br>1 = PIN<br>2 = Electronic signature analysis capability<br>3 = Biometrics<br>4 = Biographic<br>5 = Electronic authentication capability is inoperative<br>9 = Unknown |
| 3 | 1 | Card Capture Capability | 0 = No capture capability<br>1 = Card Capture capability<br>9 = Unknown |
| 4 | 1 | Terminal Operating Environment | 0 = No Terminal used<br>1 = On card acceptor premises, attended<br>2 = On card acceptor premises, unattended<br>3 = Off card acceptor premises, attended<br>4 = Off card acceptor premises, unattended<br>5 = On cardholder premises, unattended<br>6 = Off cardholder premises, unattended<br>9 = Unknown |
| 5 | 1 | Cardholder present data | 0 = Cardholder present<br>1 = Cardholder not present (unspecified)<br>2 = Cardholder not present (mail order)<br>3 = Cardholder not present (telephone order)<br>4 = Cardholder not present (standing order or recurring transaction)<br>5 = Cardholder not present (e-commerce) |
| 6 | 1 | Card Present Data | 0 = Card not present<br>1 = Card Present |
| 7 | 1 | Card Data Input Method | 0 = Unknown or no terminal<br>1 = Manual Input (no terminal used)<br>2 = Partial Magnetic Stripe Read<br>3 = Barcode<br>4 = OCR<br>5 = Contact EMV ICC<br>6 = PAN Key Entry<br>A = Contactless Magnetic Stripe<br>B = Magnetic Stripe Read<br>C = Contact EMV ICC, Online Transaction<br>F = Contact EMV ICC, Offline Transaction<br>M = Contactless EMV ICC<br>N = Contactless EMV ICC or Contactless Magnetic Stripe (PAN mapping service applied by Network)<br>O = e-commerce with EMV ICC. Mastercard Digital Enablement Service Applied.<br>R = e-commerce with EMV ICC<br>S = e-commerce<br>T = Pan auto-entry via server (issuer, acquirer or third party vendor system)<br>V = e-commerce or PAN auto-entry by server. Card on File service applied by Network. |
| 8 | 1 | Cardholder authentication Method | 0 = Not authenticated<br>1 = PIN<br>2 = Electronic Signature Analysis<br>3 = Biometrics<br>4 = Biographic<br>5 = Manual signature verification<br>6 = Other Manual verification (e.g. drivers licence)<br>9 = Unknown |

| Positions | Length | Field Name | Description / Valid Values |
|---|---|---|---|
| | | | S = Other systematic verification (including biometrics + biographic) |
| 9 | 1 | Cardholder authentication entity | Identifies who verified the cardholder (using the method described in the *Cardholder authentication method* field above).<br>0 = Not authenticated<br>1 = ICC<br>2 = Terminal<br>3 = Authorising Agent<br>4 = Merchant<br>5 = Other<br>9 = Unknown |
| 10 | 1 | Card Data Output Capability | This is rarely used.<br>10 = Unknown<br>1 = None<br>2 = Magnetic Stripe writer<br>3 = ICC<br>S = Other |
| 11 | 1 | Terminal Data Output Capability | This is rarely used.<br>0 = Unknown<br>1 = None<br>2 = Printing only<br>3 = Display only<br>4 = Printing and Display |
| 12 | 1 | PIN Capture Capability | 0 = No PIN capture capability<br>1 = Unknown<br>4 = PIN capture up to 4 digits max<br>5 = PIN capture up to 5 digits max<br>6 = PIN capture up to 6 digits max<br>7 = PIN capture up to 7 digits max<br>8 = PIN capture up to 8 digits max<br>9 = PIN capture up to 9 digits max<br>A = PIN capture up to 10 digits max<br>B = PIN capture up to 11 digits max<br>C = PIN capture up to 12 digits max |

# 4.25 Processing Codes

The Processing code (`ProcCode`) is a 6 digit field made up of:

- 2 characters transaction code. See Transaction Codes.
- 2 characters source account type code. See Account Type Codes.
- 2 characters destination account type code. See Account Type Codes.

For transactions initiated via web services, the processing code is formed of:

- 3 digits load source supplied in the request
- 3 digits “999”

## 4.25.1 Transaction Codes

The first two characters of the processing code is the transaction code, as follows:

| Value | Description | Impacts Balance |
|---|---|---|
| 00 | Debits (goods and services) | YES |
| 01 | Debits (for ATM withdrawals, or for cash disbursements using Maestro cards) | YES |
| 02 | Adjustment Credits | YES |
| 09 | Debits (goods with cash back) | YES |
| 10 | Account Funding | YES |
| 11 | Quasi-Cash (eg Gambling chips, money order, wire-transfer) | YES |
| 12 | Debits (for cash advances) | YES |
| 17 | Debits (for cash advances) | YES |
| 18 | Unique Transaction (requires unique MCC) | YES |
| 19 | Debit Adjustments | YES |
| 20 | Credits (for refund) | YES |
| 21 | Credits (for deposit) | YES |
| 22 | Credits - Card Load | YES |
| 23 | Debits - Card Unload | YES |
| 26 | Original Credits | Yes |
| 28 | Credits (for Payment Transaction) | YES |
| 30 | Balance inquiry service | NO |
| 33 | MDES / Visa Tokenisation - Tokenisation Authorisation | NO |
| 34 | MDES/ Visa Tokenisation - Activation Code Notification | NO |
| 35 | MDES / Visa Tokenisation - Tokenisation Complete Notification | NO |
| 36 | MDES / Visa Tokenisation - Token Event Notification.<br>See the ‘Message_Source’ field for which system originated the Token Event.<br>See the ‘Message_Why’ field for what sort of Token Event occurred. | NO |
| 70 | PIN change | NO |
| 71 | Card Data File Action (eg new PAN or expdate) | NO |
| 72 | PIN unblock | NO |
| 91 | PIN unblock | NO |
| 92 | PIN change | NO |

# 4.25.2 Account Type Codes

The 3rd & 4th digits in Processing code is the Source account type code.

The 5th and 6th digits in Processing code is the Destination account type code.

Both codes are from the following list of account type codes (based on ISO 8583:2003 Account Type Codes).

| Value | Description |
|---|---|
| 00 | Default Account (not specified or not applicable) |
| 10 | Savings Account |
| 20 | Cheque Account |
| 30 | Credit Card Account |
| 38 | Credit Line Account |
| 39 | Corporate Account |
| 40 | Universal Account |
| 50 | Money Market Investment Account |
| 58 | IRA Investment Account |
| 60 | Stored Value Account |
| 90 | Revolving Loan Account |
| 91 | Installment Loan Account |
| 92 | Real Estate Loan Account |

# 4.26 Reason_ID

The Reason_ID field contains a code to indicate the reason behind this message.

This field is used to describe the reason for a chargeback, but may be used to explain the reason behind other messages. See also the Message_Why field.

## 4.26.1 Reason_ID Usage

The usage varies per type of message, as follows:

| MTID | Txn_Type | Description | Reason_ID meaning |
|---|---|---|---|
| 0100<br>0120<br>0400<br>0420 | A, D, J | If message comes from Visa then: Visa's Message Reason Code (otherwise blank) | Visa's Reason for the message. See below. |
| 1240 | C | Chargeback Notification | Reason for the chargeback. See below. |
| 1240 | H | Chargeback Notification (Non-Credit) | Reason for the chargeback. See below. |
| (all other combinations) | | (all other transactions) | Not defined currently. Will be blank. |

## 4.26.2 Reason_ID for a Chargeback (Txn_Type C and H)

In Chargeback message types, the Reason_ID field is the reason for the chargeback.

The code is specific to the card network the chargeback relates to, as networks define the valid chargeback reasons, and may change them. The table below list the reason_ID codes. For more information on the code and whether a code is currently in use, refer to the following Visa/Mastercard chargeback documentation:

Mastercard codes are defined in the M*astercard GCMS IPM clearing formats manua*l, Field 25 (Message Reason Code), as applicable for chargeback messages.

Visa codesare defined in the BASE2 file TC33 "Base2 Dispute Financial Status Advice" TCR1 record position 74-75 "Dispute Financial Reason Code". Since we expect all GPS customers to initiate Visa Chargebacks on the VROL system, only VROL-related chargeback reasons are listed below. See also the Dispute_Condition code.

| Reason_ID | Mastercard network meaning (Chargeback Message Reason Code) | Visa network meaning (Dispute Financial Reason Code) |
|---|---|---|
| 10 | - | Fraud |
| 11 | - | Authorisation |
| 12 | - | Processing Error |
| 13 | - | Consumer Dispute |
| 4515 | Cardholder Denies Transaction Finalised | |
| 4804 | Multiple Processing, Duplicate | |
| 4807 | Warning Bulletin | |
| 4808 | Requested/Required Authorisation not obtained | |
| 4809 | Transaction not reconcilied | |
| 4811 | Stale Transaction | |
| 4812 | Account Number not on file | |
| 4831 | Transaction Amount Differs | |
| 4834 | Duplicate Processing | |
| 4837 | Fraudulent Transaction, no cardholder authorisation | |
| 4840 | Fraudulent Processing of Transaction | |
| 4841 | Cancelled Recurring Transaction | |
| 4842 | Late Presentment | |
| 4846 | Correct Transaction Currency Not Provided | |

| Reason_ID | Mastercard network meaning (Chargeback Message Reason Code) | Visa network meaning (Dispute Financial Reason Code) |
|---|---|---|
| 4849 | Questionable Card Acceptor Activity | |
| 4850 | Installment Transaction Dispute | |
| 4853 | Cardholder Dispute Defective/Not as described | |
| 4854 | Cardholder Dispute (not elsewhere classified) - USA only | |
| 4855 | Non-receipt of merchandise | |
| 4859 | Services not rendered | |
| 4860 | Credit not processed | |
| 4863 | Cardholder does not recognize - Potential Fraud | |
| 4870 | Chip Liability Shift | |
| 4871 | Chip/PIN Liability Shift | |
| 4880 | Maestro Late Presentment | |
| 4890 | Syntax Error Return | |
| 4900 | Invalid Second Presentment (Generic) | |
| 4901 | Required documentation not received to support second presentment | |
| 4902 | Documentation received was illegible | |
| 4903 | Scanning error - unrelated documents or partial scan | |
| 4905 | Invalid Acquirer Reference Number in Second Presentment, no documentation required or provided | |
| 4908 | Invalid Acquirer Reference Number in Second Presentment, documentation received | |
| 4999 | Domestic Chargeback Dispute | |

# 4.26.3 Reason_ID for an Authorisation (Txn_Type A, D, J)

In authorisation-related messages (Txn_Types: A, D or J) if GPS receives the transaction from Visa, then the Visa Message Reason code is included, if available.

**Note:** GPS maps important Visa Message Reasons to the GPS field Message_Why. This field is provided for additional information. GPS does not recommend you process this, but you can store for information if desired.

| Reason Code | Used for | Description |
|---|---|---|
| 2104 | Acquirer generated 0120 (USA only) | Acquirer Advice. No 0100 was sent |
| 2501 | Reversal messages | Transaction voided by customer |
| 2502 | Reversal messages | Transaction not completed |
| 2503 | Reversal messages | No confirmation from POS |
| 2504 | Reversal messages | Partial dispense by ATM or POS partial reversal |
| 3700 | Payment token related messages | Token create |
| 3701 | Payment token related messages | Token deactivate |
| 3702 | Payment token related messages | Token suspend |
| 3703 | Payment token related messages | Token resume |
| 3711 | Payment token related messages | Device provisioning result |
| 3712 | Payment token related messages | OTP verification result |
| 3713 | Payment token related messages | Call Centre activation |
| 3714 | Payment token related messages | Mobile Banking App activation |
| 3715 | Payment token related messages | Replenishment confirmation of limited-use keys |
| 3716 | Payment token related messages | Token expiry update |
| 3720 | Payment token related messages | PAN expiry update |
| 3721 | Payment token related messages | PAN update |
| 3730 | Payment token related messages | Device provisioning update results |
| 3740 | Payment token related messages | Device binding |
| 3741 | Payment token related messages | Device binding results |
| 3742 | Payment token related messages | OTP verification results - device binding |
| 3743 | Payment token related messages | Call centre step up - device binding |
| 3744 | Payment token related messages | Mobile banking app step up - device binding |
| 3745 | Payment token related messages | Device binding removed |
| 3751 | Payment token related messages | Cardholder verification results |
| 3752 | Payment token related messages | OTP verification result - cardholder verification |
| 3753 | Payment token related messages | Call center step up - cardholder verification |
| 3754 | Payment token related messages | Mobile banking app step up - cardholder verification |
| 3900 | Merchant initiated transactions | Incremental authorization |
| 3901 | Merchant initiated transactions | Resubmission |
| 3902 | Merchant initiated transactions | Delayed charges |
| 3903 | Merchant initiated transactions | Reauthorization |
| 3904 | Merchant initiated transactions | No show |
| 5206 | Deferred authorisation | Deferred Authorisation |

| Reason Code | Used for | Description |
|---|---|---|
| 5400 | Fee collection/funds disbursement transactions | Preauthorisation |
| 5401 | Fee collection/funds disbursement transactions | Purchase |
| 5402 | Fee collection/funds disbursement transactions | OCT |
| 5403 | Fee collection/funds disbursement transactions | AFT |
| 5404 | Fee collection/funds disbursement transactions | Bill Pay |
| 5405 | Fee collection/funds disbursement transactions | Preauthorisation Completion |
| 5406 | Fee collection/funds disbursement transactions | Reversal |
| 5407 | Fee collection/funds disbursement transactions | Chargeback |
| 5408 | Fee collection/funds disbursement transactions | Representment |
| 5409 | Fee collection/funds disbursement transactions | Adjustment |
| Any other value | Unknown | Unknown.<br>Visa may add extra codes at any time. |

**Note:** Only some of these codes apply to transactions with GPS.

# 4.27 Response Codes

The table below lists the response codes that can be returned in response to a payment authorisation request. See Get Transaction Message fields: Resp_Code_DE39 and Get Transaction Message fields: Responsestatus.

| Response Code | Description | Action |
|---|---|---|
| 00 | All good | Approve |
| 01 | Refer to card issuer<br>**Note**: Not permitted for Visa transactions | Refer |
| 03 | Invalid merchant | Decline |
| 05 | Do not honour | Decline |
| 10 | Partial approval<br>Note: this is permitted only if GPS_POS_Capability position 1 (partial approval supported) is '1'<br>(POS supports partial approval) | Approve |
| 13 | Invalid amount | Decline |
| 14 | Invalid card number (no such number) | Decline |
| 17 | Customer cancellation<br>• Not valid for any response<br>• Used only in outgoing reversal/advice messages to indicate reason for Reversal/Advice | Decline |
| 30 | Format error<br>• Used in response if request message invalid<br>• GPS will send decline to network | Decline |
| 32 | Partial reversal<br>**Note**: this will only be received in reversal request/advice messages to indicate a partial reversal occurred at the acquirer.<br>The value is not used in response messages. | n/a<br>(value not used in response messages) |
| 33 | Expired card (Capture) | Decline & Pickup |
| 41 | Lost card (Capture) | Decline & Pickup |
| 43 | Stolen card (Capture) | Decline & Pickup |
| 46 | Account Closed | Decline |
| 51 | Insufficient funds | Decline |
| 54 | Expired card | Decline |
| 55 | Incorrect PIN | Decline |
| 57 | Transaction not permitted to cardholder | Decline |
| 58 | Transaction not permitted to terminal | Decline |
| 59 | Suspected Fraud | Decline |
| 61 | Exceeds withdrawal amount limit<br>If Visa, this will be converted to "05" decline (as Visa do not support "61") | Decline |
| 62 | Restricted card | Decline |
| 63 | Security violation | Decline |
| 65 | Exceeds withdrawal frequency limit | Decline |
| 68 | Response received too late<br>• Not valid for any response<br>• Used only in outgoing reversal/advice messages to indicate reason for reversal/advice | Decline |
| 6P | Verification Data Failed. Applies to cardholder, card, and other verification data. Includes both:<br>• Provided verification data is invalid<br>• Required verification data is missing<br>**Note**: if a more specific code exists (eg '55' if PIN incorrect), then use that. | Decline |
| 70 | Cardholder to contact issuer | Decline |

| Response Code | Description | Action |
|---|---|---|
| 75 | Allowable number of PIN tries exceeded | Decline |
| 82 | Time-out at IEM<br>• Not valid for any response<br>• Used only in outgoing reversal/advice messages to indicate reason for reversal/advice | Decline |
| 85 | Approved (used for some non-financial transactions such as PIN Unblock request).<br>For clients involved in authorisation decisions this is not valid for the Authorisation response.<br>Use '00' (approve) instead. | Approve |
| 86 | PIN validation not possible. | Decline |
| 91 | Issuer or switch is inoperative<br>• EHI modes 1 or 2 - GPS will decline<br>• EHI modes 4 or 5 - GPS to stand-in<br>If your systems are unavailable, then use '05' decline if you to not want to invoke STIP.<br>**Note**: EHI modes 1 or 2, for Mastercards: using this code will invoke STIP at the Mastercard, which may approve the transaction (depending on your STIP setup at Mastercard.) | Decline or Invoke STIP (at GPS or Network) |
| 92 | Unable to Route Transaction (to Issuer or EHI)<br>• EHI modes 1 or 2 - GPS will decline<br>• EHI modes 4 or 5 - GPS to stand-in<br>If your systems have a fatal error, then use '05' decline if you to not want to invoke STIP.<br>**Note**: if this received in advices, it can indicate that GPS failed to connect to EHI.<br>**Note**: EHI modes 1 or 2, for Mastercards: using this code will invoke STIP at Mastercard, which may approve the transaction (depending on your STIP setup at Mastercard.) | Decline or Invoke STIP (at GPS or Network) |
| 93 | Violation of law. (Transaction is illegal or against regulations in this jurisdiction.) | Decline |
| 96 | System malfunction<br>• EHI modes 1 or 2 - GPS will decline<br>• EHI modes 4 or 5 - GPS to stand-in<br>If your systems have a fatal error, then use '05' decline if you to not want to invoke STIP.<br>**Note**: EHI modes 1 or 2, for Mastercard: using this code will invoke STIP at Mastercard, which may approve the transaction (depending on your STIP setup at Mastercard.) | Decline or Invoke STIP (at GPS or Network) |
| N7 | Decline for CVV2 failure | Decline |
| 0A | Approval with Load | Approve |
| C0 | SCA required, card form factor | Decline |
| C1 | SCA required, non-card form factor | Decline |
| (any code not in the above list) | Invalid response | If 0110 response, then GPS will invoke STIP in EHI modes 4 or 5, otherwise will decline (05). |

**Notes:**

- Response code "01" is not permitted for Visa Transactions. If "01" is sent, then Visa will discard the authorisation response and instead invoke STIP.

# 4.28 Response_Source and Message_Source

This field is used to identify the source (originator) of the message. It indicates:

- Who sent the 0110 response message to the terminal (Response_Source)
- Who sent this (usually advice/reversal) message in the first place (Message_Source)
- Who created the payment token (PaymentToken_creator)

Response_Source and Message_Source may be present in the Authorisation Advice and/or Authorisation Reversal messages.

### Possible Values

| Source | Description |
|---|---|
| UNKNOWN | Unknown or not applicable |
| ISSUER | GPS Issuer Auth System (primary site) |
| ISSUER-ALT | Alternate Issuer System (Secondary site) |
| ACQUIRER | Acquirer |
| TERMINAL | Terminal |
| CARD | Chip Card |
| EHI | Issuer PM Host via EHI connection |
| ACQ-MC-X | Acquirer X-Code (Mastercard) |
| MC-X | Mastercard X-Code at acquirer MIP |
| MC-STIP | Mastercard Stand-In processing |
| VISA-STIP | Visa Stand-In processing |
| VISA-IARS | Visa International Automated Referral Service |
| MC-ICPS | Mastercard in-control processing service |
| MC-PREVAL | Mastercard pre-validation services |
| MC-BLOCK | Mastercard transaction blocking service |
| MC-RPCS | Mastercard Recurring Payment cancellation service |
| MC-MDES | Mastercard tokenisation system (MDES) |
| CARD-APP | Application running on cardholder's card device (e.g. phone application) |
| VISA-T | Visa Tokenisation system (Visa Europe/International Token Service) |
| CARD-WAL | Wallet application running on cardholder's card device (e.g. phone) |
| WALLET | Wallet Service Provider (generic) systems - not on cardholder device (e.g. WAL-AP or WAL-AN or WAL-SA) |
| WAL-AP | Apple Wallet Systems (Apple servers - not on cardholder device) |
| WAL-AN | Android Wallet Systems (Google servers - not on cardholder device) |
| WAL-SA | Samsung Wallet Systems (Samsung servers - not on cardholder device) |
| CRDHLR | Cardholder |
| MC | Mastercard |
| VISA | Visa |

# 4.29 Response_Source_Why and Message_Why

This field describes the reason why the response and message source sent the message. It indicates:

- Why the <Response_Source> sent the 0110 response message to the terminal.
- Why the <Message_Source> created this (usually advice/reversal) message in the first place.

It may be present in Authorisation Advice and/or Authorisation Reversal messages.

### Possible Values

| Why | Description |
|---|---|
| 0 | Unknown / not-applicable / not-a-fault |
| 1 | Issuer signed off |
| 2 | Issuer signed off by switch |
| 3 | Issuer communications line down or unavailable |
| 4 | Issuer sent DE39 instruction to force network Stand In Processing (STIP) |
| 5 | Issuer timed out |
| 6 | PCAS/Limit-1 diverted (transactions under the limit sent to network STIP) |
| 7 | Issuer is in *Suppress Inquiry* mode |
| 8 | Issuer selected option |
| 9 | MIP/VAP error |
| 10 | Issuer Edit Response Error (if Mastercard, DE60.3 may contain DE in error) |
| 11 | Issuer system error |
| 12 | Network not dispatched error |
| 13 | Issuer undelivered |
| 14 | Direct down option |
| 15 | Network unable to map virtual PAN |
| 16 | Automated Fuel Dispenser (AFD) transaction acquired in USA met Visa Transaction Advisor Service criteria |
| 17 | Visa Payment Controls (VPC) rule |
| 18 | Selective acceptance service |
| 19 | Automated Referral Service |
| 20 | Original processed in STIP |
| 21 | Network Account Management system |
| 22 | PIN verification error |
| 23 | Unable to translate PIN |
| 24 | CVV error |
| 25 | Source or destination does not support service |
| 26 | ARQC verification error |
| 27 | Network error |
| 28 | Network unable to deliver response to acquirer |
| 29 | Duplicate detected by network |
| 30 | Invalid merchant |
| 31 | Network transaction blocking service |
| 32 | Acquirer acknowledgement of 0110 not received |
| 33 | Foreign system sent message |

| Why | Description |
|---|---|
| 34 | AFD confirmation advice |
| 35 | Exception file maintenance |
| 36 | Reversal matched original authorisation request |
| 37 | No matching original authorisation request found |
| 38 | Issuer notification of token vault provisioned or status change |
| 39 | Issuer notification of card-on-file token issuance |
| 40 | Pay with rewards processing advice to issuer |
| 41 | Network MDES advice to issuer |
| 42 | Authentication advice to issuer |
| 43 | CAT Risk Level 3 |
| 44 | EMV Offline advice to issuer |
| 45 | In-Control processing advice to issuer |
| 46 | Adminstrative text message |
| 47 | Transaction voided by customer |
| 48 | Transaction not completed |
| 49 | No confirmation from terminal |
| 50 | Partial Reversal |
| 51 | Payment Token Status Change<br>In this case (MTID='0100', Txn_Type='A', ProcCode='360000' Token Event Notification) it indicates that the PaymentToken_creatorStatus has been changed by the payment token creator. The GPS status may also have changed too.<br>• PaymentToken_id - indicates which payment token the status change is for<br>• PaymentToken_creatorStatus - indicates the new status as set by the creator<br>• PaymentToken_status - indicates the current GPS status as set on Smart Client |
| 52 | Payment Token Replaced<br>In this case (MTID='0100', Txn_Type='A', ProcCode='360000' Token Event Notification) it indicates that a new payment token has been digitised (i.e. personalised) with the following properties:<br>• There was already a previously digitised payment token on the same device<br>• The properties of the new digitised token as the same as the previous one, except that the expiry date has been updated.<br>• PaymentToken_id is the same (as same underlying payment token entry on the GPS system)<br>• PaymentToken_expdate has the new payment token expiry date<br>• The previous expiry date is not included (if this is required, you should request it) |
| 53 | Activation code expired (e.g. for a payment token activation) |
| 54 | Activation code wrong (e.g. for a payment token activation) |
| 55 | Activation code maximum attempts exceeded (e.g. for a payment token activation) |
| 56 | Incremental authorisation |
| 57 | Resubmission |
| 58 | Delayed charges |
| 59 | Re-authorisation |
| 60 | No show |
| 61 | Account top up |
| 62 | Consumer Transaction Controls service |
| 63 | Dispute financial |
| 64 | Recurring payment Blocking Service |

| Why | Description |
|---|---|
| 65 | Merchant country on Issuers exclusion list |
| 66 | Office of Foreign Assets Control (OFAC) embargo |
| 67 | Cashback processing error |
| 68 | Invalid CAVV |
| 69 | Luhn check digit failure |
| 70 | Issuer does not support gambling transactions |
| 71 | Payment token created |
| 72 | Payment token provisioning result |
| 73 | Payment token activation code verification result |
| 74 | Payment token call centre activation result |
| 75 | Payment token mobile banking activation result |
| 76 | Payment token EMV session keys replenishment confirmation |
| 77 | Payment token provisioning-update results |
| 78 | PAN expiry date changed |
| 79 | PAN replaced |
| 80 | Payment token activated |
| 81 | Payment token suspended |
| 82 | Payment token deactivated |
| 83 | Network Payment Fraud Disruption service |
| 84 | Payment-Token Device binding |
| 85 | Payment-Token Device binding removed |
| 86 | Payment-Token Device binding complete without authentication |
| 87 | Payment-Token Device binding activation code verification result |
| 88 | Payment-Token Device binding call centre activation result |
| 89 | Payment-Token Device binding mobile banking verification result |
| 90 | Cardholder verification complete without authentication |
| 91 | Cardholder verification activation code verification result |
| 92 | Cardholder verification call centre activation result |
| 93 | Cardholder verification mobile banking activation results |
| 94 | Payment-Token re-personalised after personalisation data update |
| 95 | Payment-Token expiry date updated |
| 96 | Deferred Authorisation. (i.e. authorisation is received a long time after the cardholder interacted with the terminal. Could easily be many hours later. Common for mass-transit transactions, such as commuter railways and buses.) |
| 97 | Acquirer authorisation advice (Merchant/Acquirer approved authorisation offline) |
| other | Ask GPS for updated information codes |

# 4.30 Transaction Status Codes

The table below provides details of available Transaction Status Code (Txn_Stat_Code) values. (See also Get Transaction Message fields: Txn_Stat_Code)

| Value | Description | Impacts Balance |
|---|---|---|
| A | Accepted | Blocked |
| C | Cleared | No (Just changing Authorisation Transaction status to cleared when matching presentment is received) |
| I | Declined | No |
| S | Settled | Actual |
| V | Reversed | Blocked (If matching authorization found) |

# 4.31 Transaction Types

The table below provides details of available Transaction Type (Txn_Type) values. (See also Get Transaction Message fields: Txn_Type)

| Value | Description | Mapping | Impacts Balance |
|---|---|---|---|
| A | Authorisation | Authorisation (if MTID=0100)<br>Financial (if MTID=1240) | Yes (If approved) |
| B | Balance Adjustment | Bal Adjustment/Expiry | Yes |
| C | Chargeback | Financial | Yes |
| D | Auth Reversal | Authorisation | Yes (If matching auth exists) |
| E | Financial Reversal | Financial | Yes |
| G | Payment | Load/Unload | Yes |
| H | Chargeback - Non Credit | Financial | No |
| J | Authorisation Advice | Authorisation | Yes (if approved) |
| K | Chargeback Reversal | Financial | Yes |
| L | Load | Load/Unload | Yes |
| N | Sec Presentment | Financial | Yes |
| P | Presentment | Financial | Yes |
| U | Unload | Load/Unload | Yes |
| Y | Card Expiry | Bal Adjustment/Expiry | Yes |

# 4.32 Visa_POS_Data_DE60

The Visa_POS_Data_DE60 field contains the raw Visa POS data GPS received in Visa online authorisation related messages. It can be useful for diagnosis in exception cases. GPS processes this field to set the GPS_POS_Data and GPS_POS_Capability fields.

**Note:** The values supplied in this field are subject to change by Visa. We advise you not to configure your systems to make decisions based on this field.

## 4.32.1 Visa_POS_Data_DE60 Positions

Each different position holds a different piece of POS information. Note that not all positions may arrive.

For more information on this field, refer to Visa. Only a summary of the relevant values are given below.

The position is the character offset in the field; the first character is “position 1”.

| Position | Description | More Information |
|---|---|---|
| 1 | Terminal Type | See Position 1 - Terminal Type |
| 2 | Terminal Entry Capability | See Position 2 - Terminal Entry Capability |
| 3 | Chip Condition Code | See Position 3 - Chip Condition Code |
| 4 | Special Condition indicator - existing debt | See Position 4 - Special condition (existing debt) |
| 5 - 6 | RFU | |
| 7 | Chip Transaction Indicator | See Position 7 - Chip Transaction indicator |
| 8 | Chip Card Authentication reliability indicator | See Position 8 - Chip card authentication reliability indicator |
| 9 - 10 | Mail/Phone/E-Commerce/Payment indicator | See Position 9-10 - Mail/Phone/E-Commerce/Payment indicator |
| 11 | Cardholder ID method indicator | See Position 11 - Cardholder ID Method Indicator |
| 12 | Additional authorisation indicators | See Position 12 - Additional Authorisation Indicators |
| 13 and up | Unknown | May be added in future by Visa |

## 4.32.2 Position 1 - Terminal Type

| Value | Description |
|---|---|
| 0 | Unspecified |
| 1 | Unattended cardholder-activated, no authorization, below-floor-limit transaction (not allowed in zero floor markets) |
| 2 | ATM |
| 3 | Unattended cardholder-activated, authorized transaction |
| 4 | Electronic cash register |
| 5 | Home terminals, which include personal computers, personal digital assistants, interactive televisions, and telephones |
| 7 | Telephone device (including Visa dial terminals) |
| 8 | Reserved for future use |
| 9 | Mobile acceptance solution (mPOS) |
| Any other value | Unknown |

## 4.32.3 Position 2 - Terminal Entry Capability

| Value | Description |
|---|---|
| 0 | Unknown |
| 1 | Terminal not used |
| 2 | Magnetic Stripe read capability |

| Value | Description |
|---|---|
| 3 | Barcode read capability |
| 4 | OCR-read capability |
| 5 | Chip-capable terminal |
| 8 | Proximity-read-capable terminal |
| 9 | Terminal does not have the capability to read card data |
| Any other value | Unknown |

## 4.32.4 Position 3 – Chip Condition Code

| Value | Description |
|---|---|
| 0 | Not applicable |
| 1 | Transaction was initiated from a magnetic stripe with a service code beginning with 2 or 6 and the last read at VSDC terminal was a successful chip read or was not a chip transaction |
| 2 | Transaction was initiated at a chip-capable terminal from a magnetic stripe that contains service code 2 or 6, and the previous transaction initiated by that terminal was an unsuccessful chip read. |
| Any other value | Unknown |

## 4.32.5 Position 4 – Special Condition (existing debt)

| Value | Description |
|---|---|
| 0 | Default value |
| 7 | Purchase of Cryptocurrency |
| 8 | Quasi-Cash |
| 9 | Existing debt indicator |
| Any other value | Unknown |

## 4.32.6 Position 7 – Chip Transaction Indicator

| Value | Description |
|---|---|
| 0 | Not applicable |
| 1 | Standard third bitmap or field 55 used to submit chip data |
| 2 | Expanded third bitmap used to submit chip data |
| 3 | Visa dropped chip data due to invalid format for chip card type |
| 4 | Token-based transaction |
| Any other value | Unknown |

## 4.32.7 Position 8 – Chip Card Authentication Reliability Indicator

| Value | Description |
|---|---|
| 0 | No information / not applicable |
| 1 | Acquirer indicates that Card Authentication may not be reliable |
| 2 | Visa indicates acquirer inactive for Card Authentication |
| 3 | Visa indicates issuer inactive for Card Authentication |

| Value | Description |
|---|---|
| Any other value | Unknown |

## 4.32.8 Position 9-10 – Mail/Phone/E-Commerce/Payment Indicator

| Value | Description |
|---|---|
| 00 | Not applicable |
| 01 | Mail/Phone Order (MOTO).<br>Indicates that the transaction is a mail/phone order purchase, not a recurring transaction or installment payment. |
| 02 | Recurring transaction from acquirer in Visa US region |
| 03 | Installment payment.<br>Indicates a purchase of goods or services that is billed to the account in multiple charges over a period of time agreed upon by the cardholder and merchant. |
| 04 | Unknown classification/other mail order. Indicates that the type of mail/telephone order is unknown. |
| 05 | Secure electronic commerce transaction.<br>Indicates that the electronic commerce transaction has been authenticated using a Visa-approved protocol, such as 3D Secure. |
| 06 | Non-authenticated security transaction at a 3D Secure-capable merchant, and merchant attempted to authenticate the cardholder using 3D Secure<br>Identifies an electronic commerce transaction where the merchant attempted to authenticate the cardholder using 3D Secure, but was unable to complete the authentication because the issuer or cardholder does not participate in the 3D Secure program. |
| 07 | Non-authenticated Security Transaction<br>Identifies an electronic commerce transaction that uses data encryption for security; however, cardholder authentication is not performed using a Visa-approved protocol, such as 3D Secure. |
| 08 | Non-secure transaction<br>Identifies an electronic commerce transaction that has no data protection. (This value is not allowed in Europe) |
| 09 | Reserved for future use |
| Any other value | Unknown |

## 4.32.9 Position 11 – Cardholder ID Method Indicator

| Value | Description |
|---|---|
| 0 | Unspecified |
| 1 | Signature |
| 2 | Online PIN |
| 3 | Unattended terminal, no PIN pad |
| 4 | Mail/Telephone/Electronic Commerce |
| Any other value | Unknown |

## 4.32.10 Position 12 – Additional Authorisation Indicators

| Value | Description |
|---|---|
| 0 | Not applicable |
| 1 | Terminal accepts partial authorization responses, amount is not an estimate. |
| 2 | Estimated amount, terminal does not support partial authorization responses. |
| 3 | Estimated amount and terminal accepts partial authorization responses |
| Any other value | Unknown |

# 4.33 Visa_ResponseInfo_DE44

The Visa_ResponseInfo_DE44 field contains a summary of verifications performed by the Visa system on the transaction, before it reached GPS. It is a useful source of additional information for Visa authorisation-related transactions.

**Note:** The values supplied in this field are subject to change by Visa. We advise you not to configure your systems to make decisions based on this field.

**Note:** Only some of the values below apply to the GPS to Visa connection.

## 4.33.1 Visa_ResponseInfo_DE44 Positions

Each position holds the result of a verification check at Visa. The Visa system may vary on which checks it performs on which transactions.

The position is the character offset in the field; the first character is *position 1*. A space character in any position indicates the information is not provided.

In the table below, *Issuer* indicates GPS, *STIP* indicates the Visa Stand-In Processing sytem and *Switch* refers to the Visa Network.

**Note:** Only a summary of the relevant values are given below. For more information, refer to the Visa documentation.

| Position | Description | More Information |
|---|---|---|
| 1 | Response Source/Reason | See Position 1 - Response Source/Reason Code. |
| 2 | AVS result | See AVS_Results. |
| 3 | Reserved for future use | See Visa documentation |
| 4 | Reserved for future use | See Visa documentation |
| 5 | CVV/iCVV result | Values:<br>Space = no information<br>1 = CVV, iCVV, dCVV, or Online CAM failed verification, or Offline PIN authentication was interrupted<br>2 = CVV, iCVV, dCVV, or Online CAM passed verification.<br>3 = Transaction passed CVV, Emergency Replacement Card (ERC) service value only, which is used exclusively by the Global Customer Assistance Service (GCAS). |
| 6 - 7 | PACM diversion level | See Visa documentation |
| 8 | PACM diversion reason | See Visa documentation |
| 9 | Card Authentication Results | Values:<br>Space = no information<br>1 = EMV ARQC checked and failed verification<br>2 = EMV ARQC checked and passed verification |
| 10 | Reserved for future use | See Visa documentation |
| 11 | CVV2 Result | See Position 11 - CVV2 Result Code |
| 12-13 | Original Response code | See Visa documentation |
| 14 | Cheque settlement code (USA only) | See Visa documentation |
| 15 | CAVV result | See Position 15 - CAVV Result Code |
| 16 - 19 | Response Reason Code | See Visa documentation. (Not applicable to GPS) |
| 20 - 23 | Last 4 digits of PAN for receipt | Holds the last four digits of the cardholder PAN, for some payment-token transactions. |
| 24 | CVM requirement for PINless | Values:<br>Space = no information<br>0 = No CVM required<br>1 = Signature prompt required |
| 25 and up | Unknown | See Visa documentation |

## 4.33.2 Position 1 – Response Source/Reason Code

This position explains who responded to the acquirer and why. GPS already map this into the Response_Source and Response_Source_Why fields.

In the table below, Issuer indicates GPS, and STIP indicates the Visa Stand-In Processing sytem.

| Value | Description |
|---|---|
| space | No information |
| 0 | Advice of Exception file change initiated by Global Customer Assistance Service (GCAS) or Automatic Cardholder Database Update (Auto-CDB) Service |
| 1 | Response provided by STIP because the request was timed out by Switch (ATR) or the response contained invalid data |
| 2 | Response provided by STIP because the transaction amount was below issuer limit (PCAS processing), or transaction amount is below sliding dollar limit (PACM processing), or in response to a verification request |
| 4 | Response provided by STIP because issuer was not available for processing |
| 5 | Response provided by issuer |
| 7 | Reversal message matched to the original authorization request message |
| 8 | No matching original authorization request message found. V.I.P. attempts to match reversals with originals when possible; however, 8 does not guarantee that<br>an original was not received |
| A | Automated Fuel Dispenser Advice |
| B | Response provided by STIP: Transaction met Visa Transaction Advisor Service criteria |
| C | Response provided by STIP for conditions not listed. See the GPS fields Response_Source_Why and Visa_STIP_Reason_Code for why (see section Visa_STIP_Reason_Code field) |
| Any other value | Unknown |

## 4.33.3 Position 11 – CVV2 Result Code

Result of Visa's CVV2 verification.

| Value | Summary |
|---|---|
| space | No information |
| C | dCVV2 match |
| D | dCVV2 no match |
| K | dCVV2 match (with merchant participation) |
| L | dCVV2 no match (with merchant participation) |
| M | CVV2 match |
| N | CVV2 no match |
| P | CVV2 not processed |
| S | CVV2 should be on the card |
| U | Issuer [actual issuer, not GPS] does not participate in CVV2 service or participates but has not provided Visa with encryption keys, or both |
| Any other value | Unknown |

## 4.33.4 Position 15 – CAVV Result Code

Result of Visa's CAVV (3D-secure) verification.

| Value | CAVV result |
|---|---|
| space | No information |
| 0 | CAVV could not be verified or CAVV data was not provided when expected |
| 1 | CAVV failed verification–authentication. |
| 2 | CAVV passed verification–authentication. |
| 3 | CAVV passed verification–attempted authentication.<br>A 3D Secure (3DS) authentication value of 07 from the Issuer Attempts Server indicates that authentication was attempted.<br>Issuer attempts CAVV key was used to generate the CAVV. |

| Value | CAVV result |
|---|---|
| 4 | CAVV failed verification–attempted authentication.<br>A 3D Secure (3DS) authentication value of 07 from the Issuer Attempts Server indicates that authentication was attempted.<br>Issuer attempts CAVV key was used to generate the CAVV. |
| 5 | RFU |
| 6 | CAVV not verified, issuer not participating in CAVV verification (except as noted, only Visa generates this code, issuers do not). |
| 7 | CAVV failed verification–attempted authentication.<br>A 3D Secure (3DS) Authentication Results Code value of 07 from Visa Attempts Service indicates that an authentication attempt was performed.<br>(Visa CAVV attempts key was used to generate the CAVV) |
| 8 | CAVV passed verification–attempted authentication<br>A 3D Secure (3DS) Authentication Results Code value of 07 from Visa Attempts Service indicates that an authentication attempt was performed.<br>(Visa CAVV attempts key was used to generate the CAVV) |
| 9 | CAVV failed verification–attempted authentication<br>A 3D Secure (3DS) Authentication Results Code value of 08 from Visa Attempts Service indicates that an authentication attempt was performed when the<br>Issuer Access Control Server (ACS) was not available.<br>(Visa CAVV attempts key was used to generate the CAVV) |
| A | CAVV passed verification–attempted authentication<br>A 3D Secure (3DS) Authentication Results Code value of 08 from Visa Attempts Service indicates that an authentication attempt was performed when the<br>Issuer ACS was not available.<br>Visa CAVV attempts key was used to generate the CAVV. |
| B | CAVV passed verification–attempted authentication, no liability shift.<br>Only Visa generates this code, issuers do not. |
| C | CAVV was not verified–attempted authentication.<br>If 3D Secure (3DS) Authentication Results Code value is 07 in the CAVV and the issuer did not return a CAVV results code in the authentication response, or,<br>if, Field 44.13 = 0 in the response message and the CAVV encryption keys do not exist in V.I.P., V.I.P.. sets the value to C in Field 44.13.<br>Only Visa generates this code, issuers do not. |
| D | CAVV was not verified–cardholder authentication.<br>If 3D Secure (3DS) Authentication Results code value is 00 in the CAVV and the issuer did not return a CAVV results code in the authorization response, or, if,<br>Field 44.13 = 0 in the response message and the CAVV encryption keys do not exist in V.I.P., V.I.P. sets the value to D in Field 44.13.<br>Only Visa generates this code, issuers do not. |
| Any other value | Unknown |

# 4.34 Visa_STIP_Reason_Code

The Visa_STIP_Reason_Code field provides Visa's reason codes for why an advice was generated. This information can be used to supplement the details returned in the 'Message_Why' and 'Response_Source_Why' fields of an advice message that originated from Visa.

**Note:** The values supplied in this field are subject to change by Visa. We advise you not to configure your systems to make decisions based on this field.

**Note:** Only some of the values below apply to the GPS to Visa connection.

Definitions used below:

- Issuer - means GPS in this scenario
- STIP - Visa's STand-In Processing system
- Switch - the Visa Network

| Value | Action taken by Visa | Detailed reason (why action was taken) |
|---|---|---|
| 9001 | STIP processed transaction | Issuer is signed off [to Visa] |
| 9002 | STIP processed transaction | Issuer was signed off by Visa |
| 9011 | STIP processed transaction | Line [from] Visa to Issuer is down |
| 9012 | STIP processed transaction | Forced STIP because of N0 (Force STIP) original response from issuer |
| 9020 | STIP processed transaction | Response from Issuer timed out |
| 9022 | STIP processed transaction | PACM (Positive Authorisation Capacity Management) - diverted |
| 9023 | STIP processed transaction | PCAS (Positive Cardholder Authorisation Service) -diverted |
| 9024 | STIP processed transaction | Transaction declined due to Visa Payment Controls (VPC) rule |
| 9025 | STIP processed transaction | Declined by Selective Acceptance Service |
| 9026 | STIP processed transaction | Transaction reviewed by the Visa Transaction Advisor Service: additional authentication required. |
| 9027 | STIP processed transaction | Declined by token provisioning service |
| 9030 | STIP processed transaction | This transaction is auto-CDB; there is a pickup response from the issuer |
| 9031 | STIP processed transaction | Original processed in stand-in |
| 9033 | STIP processed transaction | Declined due to active account management threshold exceeded |
| 9034 | STIP processed transaction | Unable to deliver response to Acquirer |
| 9035 | STIP processed transaction | Process recurring payment in STIP |
| 9037 | STIP processed transaction | Declined by Visa CTC (Consumer Transaction Controls) service |
| 9038 | STIP processed transaction | Merchandise return authorization processed in STIP |
| 9041 | STIP processed transaction | There was a PIN verification error |

| Value | Action taken by Visa | Detailed reason (why action was taken) |
|---|---|---|
| 9042 | STIP processed transaction | Offline PIN authentication was interrupted |
| 9045 | STIP processed transaction | Switch was unable to translate the PIN |
| 9047 | STIP processed transaction | Declined by Real-Time Decisioning (RTD) processing |
| 9048 | STIP processed transaction | There is an invalid CVV with the All Respond Option |
| 9054 | STIP processed transaction | There is an invalid CAM [EMV ARQC invalid normally] |
| 9063 | STIP processed transaction | Transaction declined, processing requirements not met. This value is set by Visa when the value in field 39 is 96 and:<br>• Transaction required to process in-country, but the in-country Visa system is unavailable, or,<br>• Transaction not eligible to be processed by the in-country Visa System |
| 9091 | STIP processed transaction | Dispute financial |
| 9095 | STIP processed transaction | Issuer notification of token vault provisioned or status change |
| 9050 | STIP generated advice | Source or destination does not participate in this service |
| 9061 | Switch-Detected Error | There is an internal system error or other switch-detected error condition |
| 9102 | Switch-Generated Reversal Advice | Switch generated this 0420 reversal advice because an approval response could not be delivered to the acquirer. Visa Europe only |
| 9103 | Switch-Generated Reversal Advice | An approval response could not be delivered to the acquirer because the issuer timed out |
| 9201 | STIP Decline Advice | Decline due to PPCS (Stop recurring payment service) |
| 9202 | STIP Decline Advice | Decline due to issuer country exclusion list |
| 9203 | STIP Decline Advice | Decline due to Office of Foreign Assets Control (OFAC) embargo |
| 9204 | STIP Decline Advice | Cashback processing error |
| 9205 | STIP Decline Advice | Invalid CAVV with Visa Verify and decline options (V and W) |
| 9206 | STIP Decline Advice | Mod-10 check failure |
| 9207 | STIP Decline Advice | Issuer does not support gambling transactions |
| 9208 | STIP Decline Advice | Declined because issuing identifier and/or routing identifier is blocked |
| 9209 | STIP Decline Advice | Declined because issuer does not support transaction type |
| 9210 | STIP Decline Advice | Declined because of issuer participation options |
| 9211 | STIP Decline Advice | Declined because acquirer does not support the service requested |
| 9212 | STIP Decline Advice | Declined due to fraud condition |

| Value | Action taken by Visa | Detailed reason (why action was taken) |
|---|---|---|
| 9213 | STIP Decline Advice | Declined because call-out to an external service timed out |
| 9214 | STIP Decline Advice | Declined because of error return from call-out to external service |
| 9215 | STIP Decline Advice | Declined because issuer blocked specific POS entry mode |
| 9218 | STIP Decline Advice | Product subtype is MB (Interoperable mobile branchless) and business application identifier is not MP or business application identifier is MP and product subtype is not MB. |
| 9219 | STIP Decline Advice | Merchant Blocking Service Decline Reason Code |
| 9302 | STIP Decline Advice | Exceeds Settlement Risk Exposure Cap. This code appears in 0120 messages |
| Any other value | Unknown | Ignore this.<br>**Note**: Visa may add other values at any time without prior warning, so you must ignore any values that you are not expecting. |

# Section 5: FAQs

# General FAQs

This section provides answers to frequently asked questions. It is divided into the following sections:

- EHI Setup
- EHI Modes
- Duplicate Checking and Transaction Matching
- EHI Cut Off Messages
- Transaction Life Cycle

## EHI Setup

### Q. How do I change my EHI configuration?

Please discuss changes with your implementation manager or account manager.

### Can I use a private IP in the Test Environment?

A private IP is used internally within your own network and so will require a VPN connection for EHI to access. In the test environment GPS recommends the EHI connection resolves to a public IP.

### Q. Do I need to provide an SSL certificate?

You only need to provide an SSL certificate when using TLS (i.e., connect over HTTPS). GPS validates the SSL (Secure Socket Layer) certification and the certificate has to be issued to the EHI FQDN name. For example, when calling *https://ehi.abcxyz.eu/v1/ehi/ehi.php* then the certificate has to be issued to "*ehi.abcxyz.eu*". You can also issue a wildcard certificate: " **.abcxyz.eu*".

## EHI Modes

### Q. Which EHI mode should I choose?

GPS offers five EHI modes, which are configured when your account is set up on the GPS platform.

You should select your EHI mode based on how you want the balance on the cards in your programme to be held and how you want to handle payment authorisation transactions:

- Modes 1 is used where you want full to control the card balance and authorisation process
- Mode 3 is used where you want GPS to control the card balance and authorisation process
- Modes 4 and 5 are similar to mode 1, but offer GPS Stand-in processing if your systems are unavailable.
- Mode 2 offers flexible scenarios where GPS holds the balance and performs authorisation, but you can override an approval decision.

For more information, see EHI Operating Modes.

### Q. Can I be on more than one EHI mode?

You can only choose one EHI mode per product.

## Duplicate Checking and Transaction Matching

### Q. What is duplicate checking and how can I ensure a message is unique?

EHI is designed to resend messages if a successful acknowledgement is not received by GPS. Even if you respond with a valid acknowledgement, due to network issues, this may not be received by GPS, in which case GPS resends the message. This ultimately means that any message can be received through EHI more than once. You must ensure that accounts are not debited or credited multiple times due to duplicate messages.

Duplicate checking must be performed for any new message received through EHI. You can use the transaction ID (`Txn_ID`) field to check the uniqueness of a transaction in EHI.

### Q. What is transaction matching and how should I perform this?

You are likely to receive multiple linked messages for a card payment transaction throughout its life-cycle (for example, from authorisatio, through to presentment and so on). Incoming messages must be linked with each other. The main reason for linkage is to compare financial effect of new messages with previous messages and re-calculate card balances.

Matching of a received message to an earlier message is done by comparison of some key data fields. For details see Transaction Matching.

### Q. What fields should I use for transaction matching?

You can use the following fields to match your transactions:

1. traceID_lifecyle - this is the primary identifier to match a message to a previous transaction.
2. authcode and date- can be used to match where you cannot find a match using traceID_lifecyle

# EHI Cut Off Messages

### Q. What are Cut Off messages and what are they used for?

The EHI cut off message is an optional service, which provides a summary of messages sent to the External host in the last X hours (where X is configurable). This is set at product level and sent every X hours to the specified URL you provided.

The cut off message enables you to check all the messages that GPS has sent to and received from the external host andto identify where any messages were not received/acknowledged (e.g., because of a network connection issue or timeout). It is an important aid to transaction reconciliation and troubleshooting.

The cut off message structure is different to the normal EHI transaction message structure, so GPS recommends you use a different URL for your cut off messages.

### Q. How do the timings on EHI Cut off messages work?

EHI starts sending the cut off message at the end of the cut-off period that was applied to a product.

For example if you select a cut off period of every 6 hours, if added to a product at 1am, EHI will start sending at 7 am.

Cut of times often vary per product as they can be added to different products at different times.

### Q. What happens if there is no data within the cut off period?

If there is no data, then zero is sent as a count at the end of the cut-off period.

# Transaction Life-Cycle

## Authorisations

### Q. What are Authorisations and how do they work?

Authorisation is the stage in a transaction life-cycle where a merchant requests approval for a card payment amount. If the authorisation is approved, the amount is ring-fenced on the card. Ring-fencing means that the amount is blocked and the available balance on the card is reduced by this amount.

There are different types of authorisations:

- **Pre-auth** - the merchant requests authorisation for an initial amount. This may be followed by authorisation requests for additional amounts.
- **Auth** - the merchant requests authorisation for a purchase amount. This could either be the full amount of the purchase or a partial amount.
- **Auth and Capture** - the merchant requests the authorisation and taking of the amount at the same time.

When GPS receives the authorisation request, this is processed according to your EHI mode. In mode 3, GPS approves or declines. In mode 1, the Program Manager approves or declines. Other modes use a combination of GPS and Program Manager approval. Where the Program Manager holds the card balance, they need to block the approved amount on the card and reduce the available balance. See EHI Operating Modes.

For an approved transaction, typically the merchant then has up to 7-10 days to request settlement of the authorised amount. The time-period when a merchant needs to request setlement of the authorised amount may vary, depending on their Merchant Category Code (MCC). They can respond by:

- Sending an **authorisation reversal request** - for example, if the transaction is a duplicate or was submitted in error. When the Program Manager receives the authorisation reversal message and they hold the card balance, they should unblock the amount reserved on the card.
- Sending a **presentment request** - to take part or all of the authorised amount. When the Program Manager receives the presentment request, they should match it to the original authorisation; where they hold the card balance, they should deduct the amount from the balance on the card.

  This captured amount is transferred from the card issuer to the merchant's acquirer during the settlement process. (GPS is not involved in settlement, although we do receive copies of settlement reports.)

If no response is received from the card scheme network within the GPS configired hanging filter time period, GPS automatically issues an authorisation reversal message. When the Program Manager receives the authorisation reversal message and they hold the card balance, they should unblock the amount reserved on the card.

For more information, see Transaction Flow Scenarios.

### Q. What is an incremental authorisation and how do I identify it?

An incremental authorisation is an additional authorisation, following a previous transaction authorisation, which is used to request an additional amount for the same product or service purchased by the cardholder. It is commonly used by merchants in the hospitality and tourism industry, for items such as hotel bills and car rentals, where the final amount is not known at the time the original authorisation is requested.

Multiple incremental authorisations are usually linked to a single presentment.

> **Note:** The incremental authorisation is for an additional payment and doesn't affect any previous authorisations made on the card.

You can identify an incremental authorisation as follows:

`txn_type` = A (authorisation)

For Visa, `Reason_ID` = 3900 (incremental auth for Visa)

`Auth_Type` = 0 or P (used for both preauths and incremental auths)

The following fields will be the same as in the original authorisation: `Auth_Code_DE38`, `Token`, `Txn_CCy` and `traceid_lifecycle`

The `Network_Transaction_ID` field will be unique.

### Q. What is an offline transaction and how do I handle it?

In an offline transaction, GPS has not received a previous authorisation transaction from the card network. In this case you will not receive any authorisation request message. See the Presentments section below for details of how to handle a presentment message for an offline transaction.

## Presentments

### Q. What are presentments and how do they work?

A presentment (settlement or clearing request) is a financial transaction where GPS receives a request to settle an amount that was previously authorised on a card. A presentment is typically linked to a previous authorisation transaction. GPS receives several daily batch clearing files from the card schemes, containing, amongst other records, presentments.

The majority of presenment transactions are requests for settlement of transactions authorised the previous day. Hower, for a normal authorisation, under current card scheme rules, merchants have up to 7-10 days to request settlement of an authorisation.

GPS processes the presentments in the batch file, records details in the GPS database, and sends a presentment message for each presentment, via EHI to the external host (Program Manager's system).

When you receive a presentment, you should try and match to an existing preauthorisation. Where your systems hold the card balance, you should reduce the balance by the amount of the presentment.

### Q.How often do GPS receive clearing files from the schemes?

Mastercard send 8 clearing files per day, seven days a week. Visa send 2 clearing files per day. It takes GPS a few hours to process the presentments and send presentment notifications via EHI.

### Q. What happens if GPS does not receive a presentment for a previously authorised card amount?

If no presentment is received within a defined hanging filter period, GPS sends a financial authorisation reversal message, via EHI, to the external host. The Program Manager should unblock any amount ring-fenced on the card, so that it is available to the cardholder.

### Q. Are there any cases where GPS receives a presentment which does not have a linked previous authorisation?

Yes. In the case of offline transactions, the authorisation approval is made without GPS and we will have no record of the transaction in the system. In this case, GPS creates a new authorisation transaction and sends this to the Program Manager, followed by the linked presentment message. For more information, see First Presenment for an Offline Transaction.

### Q. What are incremental presentments and how do I handle them?

An incremental presentment may occur when a merchant requests an authorisation for a specific amount, but then submits multiple presentments for different partial amounts. So, an incremental presentment has one authorisation and multiple presentment files. The final presentment total usually equals the total of the original authorised amount.

An incremental presentment can be identified in a GetTransaction financial message if the `multi_part_txn` field = 1. Additional fields provide information on the number of expected partial presentments: `multi_part_txn` and `multi_part_txn_final` and `multi_part_number` (Visa only) . See GetTransaction Message Fields.

When you receive an incremental presentment, you should only unblock the amount stated and not the full amount previously authorised. Once you have received the final presentment, you can calculate the total and unblock any amount left on the original authorisation.

### Q. How is a partial presentment processed?

For a partial presentment (i.e., for part of the authorised amount), the authorised fees are partially cleared as well, with the remaining amount blocked on the card.

### Q. What happens if a presentment is more than the amount available on the card?

The presentment always debits or credits the card balance, regardless of the existing amount. If the presentment is more than the amount held on the card, the card account would go into a negative balance.

> **Note:** whether negative balances are permitted on your programme will depend on the nature of the programme type and the agreements with the issuer.

### Q: How do I identify a negative card balance?

A negative balance is indicated in the `balance` and `available_balance` fields.

## Credit Transactions

### Q. Can a refund be online?

Yes. Visa and Mastercard allow acquirers to send refunds with or without authorisation. If an online refund (authorisation) is received, it will be normally followed by a presentment (financial) similar to purchase authorisation flow. It is not recommended to make the funds available to cardholder before the financial is received.

### Q. What is the difference between refund authorisation and reversal authorisation?

Authorisation reversals occur against authorisations that have not become financial yet (no presentment is created). Reversals are typically received in the same day. If a reversal authorisation is received for a purchase whis is already cleared (i.e. presentment received before authorisation reversal), it points to a transaction processing error on acquirer side.

Refunds are standalone transactions that have their own lifecycle (financial message and possibly authorisation message). Refunds might be linked with a previous purchase or not. Unlike reversals, there's no strict linking requirement for refunds against previous purchases (due to the independent flow, there is no need to backward balance update).

### Q. What is the difference between Refunds and Fund Transfers (Original Credits)?

Refunds are common way of returning funds to clients related to a previous card transaction. Refunds are recommended to be funded to cardholder after financial is received.

Money transfers are fund transfer transactions from an entity to another and are not linked with a previous transaction. Visa Fast Funds and Mastercard Money Send are example of these messages. Unlike refunds, most of the Fund Transfer transactions are mandated to be funded to target card during authorisation in 30 minutes. This needs a careful approach to detect the appropriate fund transfers and credit the cards in 30 minutes and not credit the cards again when financials are received. (Please check with your Visa / Mastercard representative to confirm the funding requirements for your region/country).

# Troubleshooting FAQs

This section provides answers to common integration queries.

## System timeouts and connection issues

### Q. When moving from Test to Production, why is my external host response slower?

The use of a Virtual Private Network (VPN) in the production environment may result in slower response times, especially during the early stages of pavement testing and launch.

> **Note:** When integrating to the Test environment, GPS does not require you to set up a Virtual Private Network (VPN). However, this is required in the Production environment.

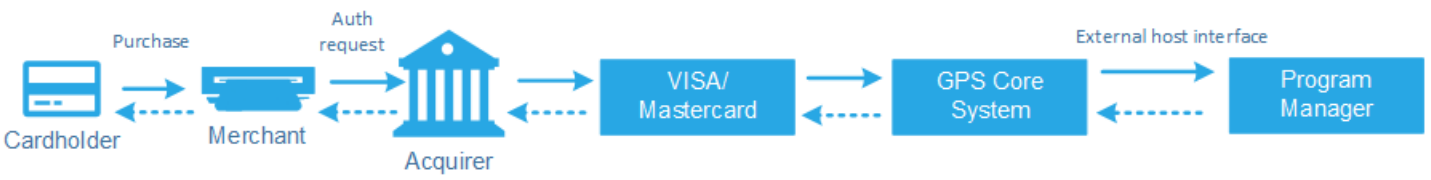
### Q.How can I identify if a transaction has been timed out and view details of the response time?

You can view details in Smart Client: In the **View Transactions** screen, double-click the declined transaction.

The **Response Status (DE039)** field indicates "*92 - Unable to route*". The **difference (in Milliseconds)** field shows the response time.

### Q. Why is the GPS default timeout set to its current level and should I request a change for my program?

The default GPS limit for a timeout is set to its current level to avoid potential network timeouts by the card scheme (Visa/Mastercard) as well as to reduce delays for the cardholder which may result in them abandoning their purchase. Visa and Mastercard have different timeout rules. For details, check with your Implementation Manager. The GPS timeout limit takes into account the full, end-to-end transaction roundtrip, which involves several parties and systems, each of which take a portion of the available time. See the figure below.




For suggestions as to how you can reduce response timeouts, see below.

### Q. How can I reduce the number of response timeouts (where my external host does not respond within the allowed time period)?

The default permitted response time (e.g., 200ms) is the full round-trip time, including your processing and routing, between GPS and your external host.

Factors that could impact on your response time include your system processing time and the network transport time. Below are some suggestions as to how you can improve your external host response times and avoid response timeouts during real-time authorisation requests:

- Make sure you have an appropriate level of monitoring and logging on your sytems so that you can quickly identify potential issues affecting your service.
- Where response delays are due to slow processing on your systems, consider upgrading your hardware or software/processing logic. As a general rule, you should be processing a message and returning a decision as quickly as possible, in order to enable sufficient time for the message to pass over the network. Your system design should also take into account future traffic loads as your service grows.
- Implement a separate endpoint for your Cut-off messages (to reduce traffic going into your main data feed).
- In the production environment, the use of TLS inside the VPN tunnel is not required and may slow down response times. You can increase response times by using HTTP.
- We recommend you provide GPS with IP addresses for your external host endpoints and do not use a DNS as this can create potential additional lookup traffic overhead prior to the authorisation being sent.
- VPN tunnels have a tendency to “sleep” after a period of time. In certain circumstances, where there are low levels of authorisation traffic, it is necessary to establish a “keep alive” packet transfer. This ensures that an IPsec tunnel is “ready to go” at any time. This means that no single authorisation request is subjected to any additional IPsec negotiation required to wake the connection prior to any standard authorisation being sent through GPS EHI. For details of implementing this option, check with your Implementation Manager.
- It may be possible to request a higher limit for much longer geographical (e.g.,intercontinental) distances from the GPS data centres. (**Note**: any permanent higher timeouts may be chargeable.)
- If you are experiencing ocasional timeouts, consider moving to EHI modes 4 or 5, where GPS can provide the approve or decline decision for an authorisation request in the event that your external host system does not respond with the timeout limit. See EHI Operating Modes.
- If you are experiencing consistent timeouts, try confirm the days and times when this occurs. This may help identify a possible cause.
- Consider the time it takes to connect to any external third party services you are using for your authorisation decisions, such as fraud screening and foreign exchange (FX) conversion services.
- If you are using an older version of EHI, you can reduce the number of connection timeouts by upgrading to a later version. See Upgrading your EHI Version.
- If you have high traffic volumes, you should consider implementing a dedicated session for your authorisation traffic. This must be negotiated with the card scheme (Visa/Mastercard). For details, check with your Implementation Manager.

# Transactions and Matching

### Q. I am receiving an unexpectedly high volume of repeat messages per day via EHI

This could be due to a number of reasons:

- Check that the message format of your external response matches the EHI specifications. An invalidly formatted response may result in the response message being rejected and the original advice or authorisation request message being resent to your external host.
- Make sure you remove the namespace from the response as this causes EHI to resend the messages.
- Ensure you are acknowledging all GPS messages with a value of *<acknowledge>1</acknowledge>*. See Processing EHI Transactions.
- If you do not acknowledge messages within the permitted period, this will result in EHI resending messages. This may be due to your systems processing and responded to messages slowly. See How can I reduce the number of response timeouts?
- At times of peak traffic load, consider prioritising messages that require real-time decision-making, such as authorisations.

### Q. How can I ensure the card balance is always correctly updated?

For EHI modes 1,2,4,5 where you hold the balance, GPS do not match advices received from the card networks; we will pass the advice through to your external host system. When you receive an advice for an approved authorisation, you should block the funds and match the subsequent presentment using appropriate matching criteria; see Transaction Matching.

For mode 3, since GPS holds the balance, GPS matches transactions and updates the balance on your behalf.

**Note:** In some circumstances, the card schemes may perform Stand-In processing on our behalf and approve an authorisation request (e.g.,where the GPS system is unavailable and or does not respond in time). In these circumstances GPS does not block the approved amount on the card. Once we receive the presentment, we will create an authorisation advice and send this to you, along with the presentment advice.

### Q. How can I prevent a card balance going into negative on a card?

In certain circumstances, such as for offline transactions or where GPS or the card scheme performs Stand-In processing this may potentially result in the card not having sufficient funds available to cover the presentment, and therefore going into a negative balance. Other examples include late presentments or where merchants send in a presentment for a declined transaction.

When GPS receive a presentment from the merchant, we will always take the money from the card (EHI mode 3). If you receive a presentment, you must update the balance (EHI modes 1,2,4 and 5). You cannot decline a presentment. If the original transaction was declined and you subsequently receive a presentment, you may have the right to a chargeback. If a late presentment is received after the original authorisation block has expired, this could result in the card going into a negative balance. In this case you *may* have the right to a chargeback.

You cannot fully prevent a card going into a negative balance. To mitigate the risks, GPS recommends you consider the following options:

- Prevent offline transactions. This option is recommended for prepaid cards. However, note that this will also reduce the available merchant locations where the card can be used.
- Reduce the need for stand-in authorisation processing by ensuring your external host system is able to respond to authorisation requests in a timely manner.
- Consider implementing an automated reminder notification to cardholders to top up when their card balance is running low. The terms and conditions of your service may allow you to implement a service charge or a standing order instruction that debits the cardholder's linked account to cover any negative card balances.

# Known Issues

For a list of known issues, please contact your Implementation Manager.

# Document History

This section contains details of all changes to this guide.

**Note:** In version 4.1.07 we changed the section numbering. We've added links in the comments section below which take you to the relevant section or topic.

| Version | Date | Author | Comments |
|---|---|---|---|
| 4.1.07 | 25/02/2021 | WS | Major revamp to guide. New Getting Started section and FAQs. Topics and appendices have been reorganised. |
| 4.1.06 | 19/02/2021 | Mark | Corrected 'CutoffDate' field in Cut-Off message as follows:<br>• Section 10.1 (Cut-off message request fields) - both Description and Data Type corrected.<br>• Section A.8.2.1 (Example cut-off request message) - corrected the CutoffDate field in the example<br>GPS_POS_Data field changes (Appendix A.24)<br>• 'ExemptFromSCA' position (Appendix A.24.13)<br>• Corrected 'Low Value' character from 'L' to 'V'<br>• Corrected 'SCA Delegation character from 'S' to 'D'<br>• Added new value 'O' (15th letter of alphabet in capitals) for 'Authentication Outage Exemption'<br>• New positions added after 'ExemptFromSCA'<br>• Updated position list in A.24.1, and added comments after the table<br>• Extra example (with 22 positions) in Appendix A.24.18 added<br>Correct field name typo from "Txn_Stat_Cde" to "Txn_Stat_Code" (see GetTransaction Message)<br>New EHI response codes: 46, 78, 6P, 59, 93 (Appendix A.4)<br>New Response_Source_Why and Message_Why values 83 to 97 (Appendix A.26)<br>Appendix A.37 - Noted that for sending Visa Base1 raw values, 'xx' will be used for 'all datasets', and 'xxxx' will be used for 'all tags'. |
| 4.1.05 | 10/02/2021 | Mark | Corrected section 7.1.1 (WSDL response requirements). Updated contact details on first page. |
| 4.1.04 | 27/01/2021 | Mark | Added new Appendix A.41 to describe Additional_Data_DE48 format for Mastercard Authorisations & Clearing messages. |
| 4.1.03 | 06/01/2021 | Mark | Added new Cardholder Authentication Method values 7,9,A,B,C,D,E in GPS_POS_Data (Appendix A.24.5)<br>Added new Cardholder Authentication Entity value 7 in GPS_POS_Data (Appendix A.24.6)<br>Added info in A.24.10 (GPS_POS_Data 3d-secure method) to clarify that for Mastercard SPA v2, this information is not received by GPS.<br>Added explanation of DES in PIN fields (previously A.14 ) |
| 4.1.02 | 20/10/2020 | Mark | Added in A.37 the plans for Misc_TLV_Data tags |
| 4.1.01 | 15/07/2020 | Mark | Appendix A.37 (Misc_TLV_Data):<br>• added 'Value Format' column<br>• added tags: 'CGBRDEBT01', 'CGBRDEBT02', 'CGBRDEBT03', 'CGBRDEBT04' for UK debt repayment transaction information.<br>Appendix A.7 (GetTransaction WSDL and Examples)<br>• Standardised the headings<br>• Renumbered Appendix A.7.8 (Examples of Amount Signs) from A.7.8 to A.7.9.<br>• Inserted number Appendix A.7.8 with a Card Expiry example request and response |
| 4.1.00 | 03/06/2020 | Mark | Noted that Bill_Amt_Approved response field in section 9.1.2 GetTransaction Message Fields can be positive or negative (GPS takes absolute value.)<br>Section 9.1.1 fields 'interchange_amount_fee' and 'interchange_amount_fee_settlement' - corrected the case of their names..<br>Added new field formats into section 8:<br>• DatetimeRaw(Y_to_D)<br>• Traceid<br>• TraceidRaw<br>• Rate<br>Added 14 new fields, to provide additional diagnostic information for transactions:<br>• Traceid_Message<br>• Traceid_Original<br>• Network_Transaction_ID<br>• POS_Date_DE13<br>• Network_Currency_Conversion_Date<br>• Network_TxnAmt_To_BillAmt_Rate<br>• Network_TxnAmt_To_BaseAmt_Rate<br>• Network_BaseAmt_To_BillAmt_Rate<br>• Network_Original_Data_Elements_DE90 |

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|---|---|---|---|
| | | | • Network_Replacement_Amounts_DE95<br>• Network_Issuer_Settle_ID<br>• Visa_ResponseInfo_DE44<br>• Visa_POS_Data_DE60<br>• Visa_STIP_Reason_Code<br>• Mastercard_AdviceReasonCode_DE60<br>• Misc_TLV_Data<br>Existing fields can take new values:<br>• Reason_ID - Visa Base 1 reason code loaded here now<br>• ProcCode - new Transaction code “10” Account Funding<br>Existing field size extended: Additional_data_de48 now up to 5000 long<br>Split Appendix A.7.2 (GetTransaction WSDL and Examples) into A.7.2M (for Mastercard examples) and A.7.2V (for Visa Examples)<br>Added new appendices:<br>A.32.4 for new Reason_ID values from Visa<br>A.36 for Mastercard_AdviceReasonCode_DE60<br>A.37 for Misc_TLV_Data<br>A.38 for Visa_STIP_Reason_Code<br>A.39 for Visa_ResponseInfo_DE44<br>A.40 for Visa_POS_Data_DE60<br>Altered some Appendices:<br>A.10 Currency Code: table now takes less space<br>A.13 Merchant Category Codes: corrected table headings, table now takes less space<br>A.17 POS_Data_DE22: corrected to take into account different format for Visa Authorisation messages.<br>A.19 Country Codes: table now takes less space<br>Corrected order of fields in WSDL from this:<br>• DCC_Indicator<br>• multi_part_txn<br>• multi_part_txn_final<br>• multi_part_number<br>• multi_part_count<br>• SettlementIndicator<br>• Clearing_Process_Date<br>• Settlement_Date<br>• Currency_Code_Fee<br>• Currency_Code_Fee_Settlement<br>• Interchange_Amount_Fee<br>• Interchange_Amount_Fee_Settlement<br>To this:<br>• Currency_Code_Fee<br>• Currency_Code_Fee_Settlement<br>• Interchange_Amount_Fee<br>• Interchange_Amount_Fee_Settlement<br>• Clearing_Process_Date<br>• Settlement_Date<br>• DCC_Indicator<br>• multi_part_txn<br>• multi_part_txn_final<br>• multi_part_number<br>• multi_part_count<br>• SettlementIndicator<br>Corrected order of fields in all examples to match the WSDL order.<br>Clarified section 9.1.1 descriptions of both “POS_Data_DE22” and “POS_Data_DE61” to make clearer differences between Visa/Mastercard and authorisation/clearing. (see GetTransaction Message Fields) |

| Version | Date | Author | Comments |
|---|---|---|---|
| | | | Appendix A.24.10 - 3D secure auth method: Added new value 'C'<br>Section 7.4 -> added entry for MTID=0120 TxnType='A' (see GetTransaction WSDL and Examples)<br>Section 7.4 -> corrected entry for MTID=0120 TxnType='J' |
| 4.0.03 | 14/02/2020 | Mark | Corrected links in A.24 GPS_POS_DATA to these:<br>• InstantFunding_GPS<br>• InstantFunding_Network<br>• ExemptFromSCA<br>Added Txn_Type value 'K' (Chargeback Reversal) to sections: A.2, 9.4, 5, 7.4, 7.3, 9.2<br>In A.17POS_Data_DE22 in Authorisation message - '10' is valid for Mastercard (same meaning as Visa '10')<br>In 7.3, noted that matching is not 100% accurate, and expanded rule on matching presentment (1240/05/06/07,P) to Auth (0100/0120,A/J)<br>In 7.4, note on 0400/D and 0420/D reversals to state that if the Txn_Amt matches, it is a full reversal.<br>In A.1 (processing codes), added '11' (Quasi cash).<br>Corrected subsection 7.6.1 and 7.6.2 that were labelled 7.1.1 & 7.1.2<br>In A.24.13 (GPS_POS_DATA ExemptFromSCA position) added new value '1'<br>In 9.1.1 SettlementIndicator added values '3' and '4' (see GetTransaction Message Fields)<br>Renumbered Appendix A.7.7 (GetTransaction WSDL and Examples) to A.7.8 (to allow below insert)<br>Added Fee transaction (MTID=empty, Txn_Type='P') to sections 5, 7.3 and 7.4, 9.2, 9.5, and an example in inserted Appendix A.7.7 |
| 4.0.02 | 05/11/2019 | Sarah + Mark | Added new positions to GPS_POS_Data: ExemptFromSCA<br>Throughout:<br>• Added in details for MTID 0101 Authorisation Duplicate (Visa only)<br>• Added in clarification for Visa second presentment MTIDs (05/06/07 N)<br>• Corrected the CVV2 field description and examples<br>• Added appendix A.24.11 for ExemptFromSCA field<br>• Added appendix A.34 for CVV2 field char 1 (if 6 chars)<br>• Added appendix A.35 for CVV2 field char 2 (if 6 chars) |
| 4.0.00 | 14/06/2019 | Sarah | Changed order of the following fields to match WSDL:<br>• Matching_Txn_ID (was underneath TLogIDOrg, now under auth_expdate_utc)<br>• Auth_Type (was underneath GPS_POS_Data now under Merch_Contact)<br>• Auth_Expdate_UTC (still underneath Auth_Type but auth_type moved)<br>• Reason_ID (was underneath Message_Why but now under Matching_Txn_ID)<br>• Dispute_Condition (still underneath Reason_ID but Reason_ID has moved)<br>Added new fields:<br>• Settlement_Service<br>• Central_Process_Date<br>• Settlement_Date<br>• Acquirer_Forwarding_ID<br>• multi_part_txn<br>• multi_part_txn_final<br>• multi_part_number<br>• multi_part_count<br>• currency_code_fee<br>• currency_code_fee_settlement<br>• interchange_amount_fee<br>• interchange_amount_fee_settlement<br>• DCC_Indicator<br>• Network_Chargeback_Reference_Id<br>Added new positions to GPS_POS_Data<br>• InstantFunding_GPS<br>• InstantFunding_Network<br>9.1 Field formats - clarified CVV2 formatting with position details (see GetTransaction Message Fields)<br>A.4. Response Codes - Added new response codes C0 and C1 for PSD2 compliance and response code 86<br>A.6 AVS results - added code Z<br>A.29 PaymentToken_Wallet |

| Version | Date | Author | Comments |
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| | | | Added a number of new wallet providers supported by Visa |
| 3.1.0 | 12/03/2019 | Mark | New request fields<br>• Matching_Txn_ID to indicate the TXn_ID of the matching Authorisation for Financial transactions.<br>• Auth_Type (to indicate if preauth, final-auth, or unknown)<br>• Auth_Expdate_UTC (when GPS/acquirer think authorisation will expire)<br>• Reason_ID (eg reason code for a chargeback)<br>• Dispute_Condition (Visa chargeback Dispute Condition)<br>• Updated section 9 and examples in appendex A.7 GetTransaction WSDL and Examples for this.<br>Removed spurious 'dd' from end of section A.7.2.1 (Auth example) and A.7.2.3 (Financial example). See GetTransaction WSDL and Examples<br>Added new section "3.3 EHI Interface Design considerations for Customers"<br>Added notes to A.4 "Response Code Values" to state that for EHI modes 1,2, for Mastercards, response codes 91,92,96 will invoke STIP.<br>Section 9.2 removed spurious sentence about "Authorisation Message Types" above the table. (see GetTransaction Message Fields)<br>Removed these fields that are not provided (GPS internal refs: DEV_MT_CORE-1429 and DEV_MT_CORE-1606)<br>• Account_Type_From<br>• Account_Type_To<br>• Txn_Code<br>Sections 9.1.1, 9.3.1, 9.4.1, 9.5.1 - re-ordered fields to match WSDL order of arrival. Now all field tables are in exactly the same order. (see GetTransaction Message Fields) |
| 3.0.9 | 26/04/2018 | Chip | Added value 26 (Original Credits) to Appendix 1.1, Transaction Code Values.<br>Added additional response fields, AvlBalance_GPS_STIP and CurBalance_GPS_STIP in EHI response message components for Mode 4 and 5 enhanced functionality, in the following sections:<br>9.1.2 Response Field Formats (see GetTransaction Message Fields)<br>9.3.2 Response Message Fields<br>A.7.1 GetTransaction WSDL<br>A.7.2.2 Example Authorisation Response Message |
| 3.0.8 | 24/04/2018 | Mark (92)<br>Harry C (32) | Appendix A.4 Response Code Values changes:<br>• Removed spurious "Note - not all codes are" sentence<br>• Added code 92 (Mark)<br>• Added code 32 (Harry C) |
| 3.0.7 | 05/04/2018 | Harry C | Added the value 12 to Transaction Code values in Appendix A.1.1 (part of ProcCode field). (see Processing Codes) |
| 3.0.6 | 07/03/2018 | Mark | Section 9.1.1 correct format of "PaymentToken_activationExpiry" from Datetime(Y_to_ss) to Datetime(Y_to_nnn) to reflect what is actually sent. (DEV_MT_CORE-2613)<br>Corrected date of 3.0.5 spec from 29/01/2018 to 06/03/2018 (in change logs at top and bottom.)<br>Added Payment Token Activation Request (appendix A.7.2.5) |
| 3.0.5 | 06/03/2018 | Mark | Appendix A.29 PaymentToken_wallet values - 'ANDROID' wallet name changed from 'Android Pay' to 'Google Pay'. No field changes.<br>Removed (MTID=0120, Txn_Type=A) and (MTID=0100, Txn_Type=D) from sections 9.2 and 9.3, as these combinations do not exist.<br>Added MTIDs 25,26,27 (Visa Financial Reversals) into sections: 7.3, 7.4.<br>Added MTIDs 05,06,07,25,26,27 into MTID field in section 9.1.1 (request message fields.) (see GetTransaction Message Fields) |
| 3.0.4 | 09/01/2018 | Mark | Added additional description in Appendix A.1.1 (Transaction Code values) for '36' Transaction code.<br>Added extra values 51 to 55 for 'Message_Why' field in Appendix A.26 (Response_Source_Why + Message_Why)<br>Added new PaymentToken_creatorStatus value 'D' in Appendix A.28<br>Corrected email address on first page. |
| 3.0.3 | 22/12/2017 | Mark | Added values 47 to 50 for Response_source_why + message_why in section A.26<br>Added new wallet values FITBIT + PAYNETPHYR in section A.29 PaymentToken_wallet.<br>Added table borders in appendices A.25 to A.31.<br>Removed MTID=0120 Txn_Type=A from section '7' as this combination does not exist.<br>Removed MTID=0100 Txn_Type=D from section '7', as this combination does not exist (hanging auth removals are always created with MTID='' (blank).<br>Added enhanced description of reversals in section 7.4. |
| 3.0.2 | 15/11/2017 | Mark | Added 2 missing fields in GetTransaction to sections: A.7.1 (WSDL), Field info sections: 9.1.1, 9.3.1, 9.4.1, 9.5.1: (see GetTransaction Message Fields)<br>PaymentToken_deviceId<br>PaymentToken_deviceName<br>Added GPS_POS_Capability and GPS_POS_Data values and made POS/Merchant fields more consistent in examples in sections: |

| Version | Date | Author | Comments |
|---|---|---|---|
| | | | - A.7.2.1 (Auth request example)<br>- A.7.2.3 (Auth Advice example)<br>- A.7.3.1 (Financial request example)<br><br>Added fields after Message_Why to Auth Advice example in section A.7.3. |
| 3.0.19 | 19/02/2019 | Mark + Glenn | 7.1.1 WSDL GetTransaction response<br>- Txn_Stat_Cde and Resp_Code_DE39 could indicate approval for EHI modes 4+5<br>- SendingAttemptCount is value-1 for EHI modes 4+5<br><br>7.3 Transaction Matching<br>1240 dummy auth - added 05pp 06pp 07pp<br>corrected 05,06,07,25,26,27 -> add 2 spaces on the end<br><br>7.4 Transaction processing by receiver<br>0120 J -> add note in Description to say can arrive for network STIP and AFD<br>0420 D -> fix note as visa use both 0400 and 0420.<br>1240 A dummy -> add 05pp 06pp 07pp<br>05,06,07,25,26,27 -> add 2 spaces on end<br><br>7.5 Incremental auths<br>- Added expected final transaction amount<br>- added notes on if final tranasaction amount too high or too low<br>- clarified some language<br>7.6 Added section on Exception transactions<br>9.1.1 Request fields: (see GetTransaction Message Fields)<br>- Settle_Amt: description corrected<br>- LoadType: corrected link to valid values<br>- POS_Time_DE12: clarified description<br>- Status_Code: clarified description<br>payment-token fields corrected examples for visa/mc:<br>- PaymentToken_id<br>- PaymentToken_expdate<br>- PaymentToken_type<br>- PaymentToken_status<br>- PaymentToken_creatorStatus<br>- PaymentToken_wallet<br>- PaymentToken_deviceType<br>- PaymentToken_lang<br>- PaymentToken_deviceTelNum<br>- PaymentToken_deviceIp<br>- PaymentToken_activationCode<br>- PaymentToken_activationMethod<br>- PaymentToken_activationMethodData<br>9.1.2 Response fields:<br>- Update_Balance - added note that WS_BalanceUpdate can also be used to update the balance.<br>9.2 = added visa clearing mtids<br>05pp,06pp,07pp (fin)<br>25pp,26pp,27pp (fin rev)<br>9.3.1 - request fields:<br>- Resp_Code - notes for modes 4+5 added<br>9.3.2 - response fields<br>- CurBalance + AvlBalance conditional based on EHI mode, proccode and if approved<br>- AvlBalance_GPS_STIP + CurBalance_GPS_STIP - now made conditional with explanation.<br>9.4 - added the visa MTIDs<br>05pp,06pp,07pp (txntype A and P)<br>25pp,26pp,27pp (txntype='E' financial reversal)<br>9.4.2 - Response message fields:<br>AvlBalance_GPS_STIP + CurBalance_GPS_STIP - now made conditional with explanation.<br>A.1.1 added 70, 71, 72 proccodes<br>A.3 clarified Txn_Stat_Cde 'C' (Cleared)<br>A.7.7 - new section added to aid understanding of amount signs<br>A.13 MCC ranges:<br>- removed all non-descript ranges of 2+ MCCs<br>- removed entries which were duplicated (kept correct description)<br>- removed “DISALLOWED” if not appropriate (Various entries)<br>added 3733 "Boca Raton Resort"<br>added 3736 "Colorado Belle Edgewater Resort"<br>added 3739 "Woodside hotels and resorts"<br>A.19 Country codes<br>- Added Kosovo, to see UNMI Kosovo<br>A.22 Bank Account Format<br>- Added table borders<br>A.26 added why values 71 to 82 inclusive<br>A.27 paymenttoken_type<br>added BW - Browser Accessible Wallet<br>A.28 Paymenttoken_creatorStatus<br>added I - Inactive<br>A.29 PaymentToken_wallet<br>- Added STOCARD |
| 3.0.18 | 04/01/2019 | Mark | Field POS_Termnl_DE41 is only mandatory for electronically-card-read transactions, so changed:<br>Section 9.1.1 - POS_Termnl_DE41 description to add note (see GetTransaction Message Fields)<br>Section 9.3.1 - Authorisation request fields: POS_Termnl_DE41 changed from “Mandatory” to “Optional”<br>Section 9.4.1 - Financial request fields: POS_Termnl_DE41 changed from “Mandatory” to “Optional”<br>Repeated the headers in country code table in A.19 |
| 3.0.17 | 17/10/2018 | Ajeesh | Existing section A.10 (currency codes) enhanced to provide the names of all the currency codes.<br>Added a full table of country codes, providing the following details:<br>• Country name |

| Version | Date | Author | Comments |
|---|---|---|---|
| | | | • Country 3-alpha code<br>• Country 2-alpha code<br>• Country 3-numeric code |
| 3.0.16 | 16/10/2018 | Matt Clare | Addition of Garmin Pay and Mont Blanc pay<br>Noted in section 1.2 that real time data feed permits sending real-time alerts to cardholders<br>Numerous linguistic changes |
| 3.0.15 | 17/09/2018 | Harry C | Corrected MTID data type from N(1,4) to ANP(1,4) in section 9.1.1 (see GetTransaction Message Fields) |
| 3.0.14 | 14/08/2018 | Mark | Corrected the following WSDL types in section A.7.1 (GetTransaction WSDL) from “s:int” (-2^31 to 2^31-1) to “s:long” (-2^63 to 2^63-1), so that data types are appropriate as per https://www.w3.org/2001/XMLSchema.xsd for the data content as described in chapter 9 (see GetTransaction Message Fields).<br>These GetTransaction WSDL elements were corrected:<br>“SubBin” from “s:int” to “s:long”<br>“Balance_Sequence” from “s:int” to “s:long”<br>“Balance_Sequence_Exthost” from “s:int” to “s:long”<br>These GetTransactionResponse WSDL elements were corrected: “New_Balance_Sequence_Exthost” from “s:int” to “s:long”<br>Added note at top section A.7 (WSDL) that the datatype definitions are found as per https://www.w3.org/2001/XMLSchema.xsd |
| 3.0.13 | 07/08/2018 | Mark | Corrected the Datatype (min,max) for:<br>• Balance_Sequence (in section 9.1.1) (see GetTransaction Message Fields)<br>• Balance_Sequence_Exthost (in section 9.1.1)<br>• New_Balance_Sequence_Exthost (in section 9.1.2)<br>Included that for all, the maximum value is 2^63-1 which has 19 digits. |
| 3.0.12 | 31/07/2018 | Mark | Section A.7.1 GetTransaction WSDL, corrected request message:<br>• Balance_Sequence changed minOccurs from “1” to “0”<br>• Balance_Sequence_Exthost changed minOccurs from “1” to “0”<br>Because these fields only exist properly for transactions sent at the time they occur (not for transactions sent after the event on the queue mechanism.)<br>Expanded description in section 9.1.1 for fields “Balance_Sequence” and “Balance_Sequence_Exthost”. (see GetTransaction Message Fields) |
| 3.0.11 | 20/06/2018 | Mark | Removed spurious ‘7’ at start of section 9.1.2 (see GetTransaction Message Fields)<br>Reinserted 3.0.8 comment above<br>Added 3.0.9 + 3.0.10 comment above<br>Appendix A.26 (‘why’ codes) - added value 56 to 70, and enhanced description of codes 51 (token status change), and 52 (token replacement)<br>Ensured this table is not too wide for the page.<br>Fixed some spacing in the changelog at top and bottom.<br>Improved spacing and commas (grammar) in section 5 (Transaction Types.) |
| 3.0.10 | 07/06/2018 | Chip | Minor corrections for editing errors in previous version. |
| 3.0.1 | 15/11/2017 | Mark | Added new fields in WSDL section Appendix A.7<br>Added new fields to examples in section A.7.1 and A.7.2.3.<br>Removed fields Txn_Code, Account_Type_From, Account_Type_To (from WSDL GetTransaction in Appendix A.7) as these are not sent.<br>Added these fields to the GetTransaction request example in section A.7.2.1 and A.7.2.3<br>source_bank_ctry source_bank_account_format<br>source_bank_account dest_bank_ctry<br>dest_bank_account_format<br>dest_bank_account<br>GPS_POS_Capability<br>GPS_POS_Data<br>Aligned fields in the examples in sections A.7.2.1 and A.7.2.3 so fields are in WSDL order (and same order as we send)<br>Added MTID=0120 Txn_Type=J (Auth Advice) to section 9.2 - Transaction Type Decoding, and top of section 9.3 - “Transaction Type - Authorisation” to include it in the Authorisation message types. (see GetTransaction Message Fields)<br>Renamed Appendix A.18 from “POS_Data_DE22 in Financial Messages” to “POS_Data_DE22 in Mastercard Financial Messages” to stress that this does not apply for Visa messages at all.<br>Added notes to existing fields as follows:<br>• Merch_Name_DE43 - now depreciated in favour of new Merch_... fields (for card txns)<br>• POS_Data_DE61 - now depreciated in favour of new GPS_POS_Capability and GPS_POS_Data<br>• POS_Data_DE22 - now depreciated in favour of new GPS_POS_Capability and GPS_POS_Data<br>• Txn_Desc - see new Merch_... fields that may be more useful |

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| 3.0.0 | 15/11/2017 | Mark | Added new normalized POS and Merchant data fields as follows:<br>Added new fields to GetTransaction messages:<br><Merch_Name><br><Merch_Street><br><Merch_City><br><Merch_Region><br><Merch_Postcode><br><Merch_Country><br><Merch_Tel><br><Merch_URL><br><Merch_Name_Other><br><Merch_Net_id><br><Merch_Tax_id><br><Merch_Contact><br>(Updated sections 9.1.1, 9.3.1, 9.4.1, A.7.1 as a result)<br>GPS_POS_Capability (Appendix A.23) Added definitions of new positions 3-49 inclusive.<br>GPS_POS_Data (Appendiox A.24) Added definitions of new positions 1-22 inclusive. |
| 2.0.6 | 08/11/2017 | Mark | Added Txn_Type=J (Auth Advice) to:<br>• section 7.3 Transaction matching<br>• section 7.4 Transaction processing<br>• Appendix A.2 Txn_Type values<br><br>Improved matching rules in section 7.3 for the following (MTID, Txn_Type) combinations:<br>(0100, 'A'): added THIS.token=OTHER.token<br>(0120, 'A'): added traceid_lifecycle and Auth_Code_DE38<br>(0120, 'D'): added traceid_lifecycle and Auth_Code_DE38<br>(0120, 'J'): added new rule<br>(0400, all): added traceid_lifecycle, but noted it and auth_code_DE38 may be missing for timeout reversals<br>(0420, all): added traceid_lifecycle, but noted it and auth_code_DE38 may be missing for timeout reversals<br>(1240, 'P'): Changed to 2 rules, first with trans_link, then without trans_link.<br>Added notes to section 7.4 that for 0400, 0420 reversals, first check the reversal is not a duplicate before doing any unblocking if needed.<br>Added rules in 7.4 for Txn_Type='J' MTID=0120 |
| 2.0.5 | 18/10/2017 | Mark | Section 7.3 Matching criteria corrected the following:<br>• Removed Acquirer_Reference_Data_031 from all MTID=1240 TxnType='P' matching to Auths (as no DE31 in auth.)<br>• Added traceid_lifecycle as a matching criteria (if it exists in financial) for MTID=1240 TxnType='P' matching to auths<br>• Changed the MTID=05, 06, 07 (i.e. Visa presentments) matching to Auths to say do as MTID=1240 TxnType='P'<br><br>Updated company info on front page to this:<br>Global Processing Services Ltd<br>2nd Floor St Marys Court, 20 Hill Street, Douglas Isle of Man IM1 1EU<br><br>T: +44 (0) 330 088 8761<br>E: sales@globalprocessing.net<br>W: http://globalprocessing.net/ |
| 2.0.4 | 29/08/2017 | Sudheesh | Edited section 9.1 to specify MC/VISA fields. (see GetTransaction Message Fields)<br>Edited section 9.4.1 to make the Resp_Code_DE39, TXN_Time_DE07 optional for financial messages.<br>Included details for VISA in sections A.17, A.18, A.20 |
| 2.0.4 | 07/09/2017 | Sudheesh | Added section 7.5 for incremental authorisations |
| 2.0.3 | 29/06/2017 | Sudheesh | Changed Txn_Time_DE07 to TXN_Time_DE07 in WSDL |
| 2.0.2 | 26/06/2017 | Mark | Changed field ICC_System_Related_Data_DE55 internal format:<br>From:<br>(if Mastercard)<br>- display binary (ASCII '0' and '1' chars - 8 chars for 1 byte) where the encoded bytes represent:<br>- first 3 bytes: length of following data in binary bytes (1 binary byte is 8 ASCII '0'/'1' chars in the string), encoded as 3 ASCII digits '0' to '9'.<br>- following bytes: EMV TLV data as Tag, Length, Value bytes encoded as Basic Encoding Rules (BER) as described in EMV Book 4.3 Annex B "Rules for BER-TLV data objects"<br>- note that alls tags sent from the acquirer will be present (even if not defined by EMV)<br>(if Visa)<br>• Hexadecimal digits ('0'-'9' and 'A'-'F') where 2 hexadecimal digits represent 1 byte, where the encoded bytes represent:<br>• First byte is full length of data<br>• Next byte is value 1 (hex '01')<br>• Next 2 bytes (4 hex digits) is the length of the following TLV data in binary bytes (eg '000F' if 15 bytes (30 hex digits) follows<br>• Following bytes: EMV TLV data as Tag, Length, Value bytes encoded as Basic Encoding Rules (BER) as described in EMV Book 4.3 Annex B "Rules for BER-TLV data objects"<br>- note that alls tags sent from the acquirer will be present (even if not defined by EMV)<br><br>From examples (eg if sending tags 9F35 and 82)<br>Mastercard: 0011000000110000001110001001111100110101000000001 |

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| | | | 00100010100000100000001000011001100000000<br>Visa: 0B0100089F35012282021980<br><br>To:<br>• Hexadecimal digits (0-9 and A-F) where 2 hexadecimal digits represent 1 byte, where the encoded bytes mean:<br>• EMV TLV data as Tag, Length, Value bytes encoded as Basic Encoding Rules (BER) as described in EMV Book 4.3 Annex B “Rules for BER-TLV data objects”<br>• Note that alls tags sent from the acquirer will be present (even if not defined by EMV)<br><br>To example (eg if sending tags 9F35 and 82)<br>(for Visa and Mastercard): 9F35012282021980<br>Shrank text in section 9.1.2 (response fields) for field “New_Balance_Sequence_Exthost” to ensure it can all be read. (see GetTransaction Message Fields)<br>Added new note in section 7.3 (Transaction Matching) and section 7.4 (Transaction Processing) so that customer can match a 0100 incremental authorisation to a previous 0100 authorisation. |
| 2.0.1 | 20/06/2017 | Sudheesh | 1.Corrected casing for :<br>Acquirer_ID_DE32 -> Acquirer_id_DE32<br>Txn_ID -> TXn_ID<br>Txn_Time_DE07<br>Traceid_Lifecycle -> traceid_lifecycle<br><br>2.New response field CVV2_Result (sections 9.1.2, 9.3.2, 9.4.2, 9.5.2) |
| 2.0.0 | 02/06/2017 | Mark | DEV_MDES-19 changes:<br>Added the following new optional PaymentToken_... fields for MDES:<br>• PaymentToken_id<br>• PaymentToken_creator<br>• PaymentToken_expdate<br>• PaymentToken_type<br>• PaymentToken_status<br>• PaymentToken_creatorStatus<br>• PaymentToken_wallet<br>• PaymentToken_deviceType<br>• PaymentToken_lang<br>• PaymentToken_deviceTelNum<br>• PaymentToken_deviceIp<br>• PaymentToken_activationCode<br>• PaymentToken_activationExpiry<br>• PaymentToken_activationMethod<br>• PaymentToken_activationMethodData<br><br>So therefore updated the following places:<br>• Section 9.1.1 field definitions (see GetTransaction Message Fields)<br>• Section 9.3.1 Authorisation request fields<br>• Section 9.4.1 Financial request fields<br>• Section 9.5.1 Non-Card-Network-Transaction request fields<br>• Appendix A.7.1 WSDL for GetTransaction<br><br>Added extra SOURCE codes to section A.25 (Response_Source and Message_Source values) as MDES PaymentToken_ creator field uses some of the new values.<br><br>Added new formats “Datetime(Y_to_D)” and “Datetime(Y_to_ss)” in section 8.1 Data Types<br><br>Added the following new Appendices, for new values related to PaymentToken_... fields:<br>Appendix A.27: PaymentToken_type<br>Appendix A.28: PaymentToken_creatorStatus<br>Appendix A.29: PaymentToken_wallet<br>Appendix A.30: PaymentToken_deviceType<br>Appendix A.31: PaymentToken_activationMethod and PaymentToken_activationMethodData |
| 1.5.9 | 28/04/2017 | Arjun C V | Changed WSDL for FirstTxn_ID and<br>LastTxn_ID to Long from Int, A.8 Cut-Off Message WSDL and Examples. |
| 1.5.8 | 27/03/2017 | Jake | Made the following changes, in order to merge this version of the spec (hosted on confluence) with the changes I made to the incorrect version of the spec (hosted on JIRA DEV_EHI15-19) |

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| | | | Updated format of CutOffDate in CutOff message specification to YYYY/MM/DD hh:mm:ss - CS_PAGOBOX-16, 10.1 Request Message.<br>Replaced GetTransaction message WSDL with correct version - DEV_EHI15-26, A.7.1 GetTransaction WSDL. Changes from the original include:<br>• <s:all>, replaced by <s:sequence><br>• GPS_POS_Capability<br>• GPS_POS_Data<br>• Acquirer_Reference_Data_031<br>• Response_Source<br>• Response_Source_Why<br>• Message_Source<br>• Message_Why<br>• traceid_lifecycle<br>• Balance_Sequence<br>• Balance_Sequence_Exthost<br>• Txn_Code<br>• Account_Type_From<br>• Account_Type_To (these are in request)<br>• Bill_Amt_Approved<br>• Update_Balance" type="s:int<br>• New_Balance_Sequence_Exthost (these are in response)<br>Added note on processing code values - CS_OX2B-30, A.1 ProcCode (Processing Code) values.<br>Removed section on Keepalive Timeout, as this functionality is not currently scheduled for release - DEV_MT_EHI-81, 3.2 Protocol Layer connection.<br>Added to description of Txn_GPS_Date, clarifying when this is set - CS_HOLVI-95, 9.1.1 Request Field Formats |
| 1.5.7 | 27/03/2017 | Mark | Added 3 new fields as different parts of existing Proc_Code field:<br>• Account_Type_From<br>• Account_Type_To<br>• Txn_Code<br>For DEV_MT_CORE-1429.<br>Changed as a result:<br>• Fields in sections 9.x<br>• WSDL for GetTransaction<br>• Examples<br>Added these fields (introduced in 1.5.3 above) into sections 9.3, 9.4, 9.5 (where it was missing):<br>• Balance_Sequence (request field)<br>• Balance_Sequence_Exthost (request field)<br>Added these to Authorisation example in section A.7.2.<br>Corrected typo 'Responsestaus' in section 9.5.2 (Non-Card Network Transaction response message.) |
| 1.5.6 | 17/02/2017 | Mark | Added missing response fields:<br>• Bill_Amt_Approved<br>• Update_Balance<br>• New_Balance_Sequence_Exthost<br>to tables in sections:<br>9.3 (Transaction Type - Authorisation)<br>9.4 (Transaction Type - Financial)<br>9.5 (Transaction Type - Non-Card Network)<br>And added these to the authorisation example in section A.7 |
| 1.5.5 | 14/02/2017 | Mark | Section A.8 - Cut-Off Message WSDL<br>Corrected Cut-Off Response Message element name from 'th' to 'Cut_OffResult' for Response element. (Example is correct.) |
| 1.5.4 | 02/02/2017 | Mark | Added new EHI modes 4 and 5 for DEV_EHI15-2 (balance stand-in.)<br>Added new response fields:<br>• Balance_Update |

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| | | | • New_Balance_Sequence_Exthost<br><br>For DEV_EHI15-2 balance stand-in.<br>Clarified in MTID in section 9.1.1 that value '1240' is used for both Financial Notification and Chargeback Notification (user must check TransactionType to tell the difference.)<br>Section 9.1.1 value MTID '1442' removed as we currently do not use this for chargebacks.<br>(We may add 1442 in the future.) |
| 1.5.3 | 21/10/2016 | Mark, Jake | Added fields:<br>- GPS_POS_Capability (in card related requests)<br>- GPS_POS_Data (in card related requests)<br>- Bill_Amt_Approved (in responses)<br>Added new Appendices:<br>• A.23 GPS_POS_Capability<br>• A.24 GPS_POS_Data<br><br>Initially done to support partial approvals.<br>Added these new fields to example Auth request message and Financial request message.<br><br>Added field traceid_lifecycle for GetTransaction request messages (DEV_EHI15-5)<br><br>Added in changes from EHI spec version 1.4.6 (adding MTID="0120", Txn_Type="D" (Auth reversal due to AFD 0120 advice):-<br><br>Added the Automated Fuel Dispenser (AFD) Auth Reversal (due to AFD auth advice) which is:<br>• MTID="0120" (auth advice)<br>• Txn_Type="D" (auth reversal)<br><br>into the MTID + Transaction type tables in sections 7.3 (Transaction Matching), 7.4 (Transaction Processing) and 9.2 (Transaction Type Decoding.)<br><br>Added fields:<br>• Acquirer_Reference_Data_031<br><br>Added Acquirer_Reference_Data_031 into the Financial matching logic.<br><br>Corrected POS_Data_DE22 for authorisation messages (appendix A.17) – position 3 was slightly inaccurate regarding online vs offline PIN support (DEV_MT_EHI-88)<br><br>Added these fields for DEV_EHI15-2 for balance updating:<br>• Balance_Sequence (request field)<br>• Balance_Sequence_Exthost (request field)<br>• Update_Balance (response field)<br>• New_Balance_Sequence_Exthost (response field)<br><br>Added information on field usage.<br><br>Added these fields for DEV_EHI15-17<br>- Response_Source<br>- Response_Source_Why<br>- Message_Source<br>- Message_Why<br>The values are as described in DEV_TRXSCR-3 and fields map to columns of the same name on AUTHORISATION and 0120_STORE database tables.<br>Added Appendix A.25 to describe Response_Source and Message_Source values.<br>Added Appendix A.26 to describe Response_Source_Why and Message_Why values.<br><br>Added new Transaction type decoding combination of:<br>MTID=0120<br>Txn_Type='A'<br>to all the message decoding tables.<br><br>Added missing value "82" (PAN data on file) to POS_Data_DE22 in Authorisation message section (appendix A.17)<br><br>Added paragraph on keepalive timeout setting, configurable for every product, in 3.2 Protocol Layer connection. |
| 1.5.12 | 30/05/2017 | Mark | Corrected definition of POS_Time_DE12 field in section 9.1.1 Request Field Formats |
| 1.5.11 | 16/05/2017 | Mark | Removed spurious first sentence of section 7.1.1 |
| 1.5.10 | 02/05/2017 | Mark | Corrected capitalisation of Agency Banking fields in GetTransaction to lower case to match WSDL and code:<br>source_bank_ctry<br>source_bank_account_format<br>source_bank_account<br>dest_bank_account_format<br>dest_bank_account<br>dest_bank_ctry<br><br>Fixed typo in section A.22 'r' missing from 'Source_Bank_Account_Format'<br>Added 2 new responsestatus code values in section A.4:<br>30 - Format Error (to be used if customer thinks our request is invalid) |

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| | | | 96 - System Malfunction (to be used if customer system has fatal error)<br><br>Commented on these existing codes:<br>17 - customer cancellation<br>68 - Response received too late<br>82 - Timeout at IEM<br>91 - Issuer unavailable<br>To clarify usage in each case<br>Note: DEV_EHI16-7 will handle this on GPS side.<br><br>For DEV_MT_CORE-1804 - Section 9.1.1 Request Field Formats new future trans_link format for offline cleared transactions (implementation date TBC). Also clarified existing formats. |
| 1.4.5 | 18/07/2016 | Mark | Moved this full change log down to this appendix.<br><br>GetTransaction Request field 'POS_Data_DE61' no longer has leading subfield 0 (3 digit length) - presence of this leading subfield was fixed in DEV_MT_EHI-26.)<br><br>Fixed example Authorisation messages in section A.7 to remove leading '026' in field POS_Data_DE61 |
| 1.4.4 | 12/04/2016 | Mark | Corrected Fx_Pad in Authorisation and Financial to state that this amount is in the Billing Currency (Bill_Ccy.) Previously incorrectly stated as in the Transaction Currency (Txn_CCy.)<br>Clarified that the Bill_Amt in Authorisation message does not include Fx_Pad amount field or MCC_Pad amount field.<br>Inserted new section 8 - Data Types, which describes the common data types used for both GetTransaction and Cut_Off WSDL messages.<br>Therefore, most of original section 8 (message formats) is now section 9.<br>Created new table under new section 9.1 (Field Definitions for GetTransaction), which describes in a single place all of the field formats.<br>This has been done so it is clear for the reader the overall format of each field, instead of describing it per message (Authorisation/Financial/Non-Card-Network.)<br>Altered the Authorisation, Financial and Non-Card-Network tables to remove the field definitions, as these are now described in a single place in new section 9.1.<br>Now you only need to record for Authorisation/Financial/Non-Card-Network which fields are mandatory / optional / omitted.<br>Added section A.21 (Calculating the Total Transaction impact to the balance), and referenced it in section 6, so external hosts authorising the transaction are clear on the total transaction impact.<br>(Note that partial auth approving by External Host (as per calculation in DEV_MT_CORE-587) would require the original fee rate percentages to be sent to External Host. Therefore, External hosts should not partial approve unless they are clear on the total balance impact with the partial approved amount.)<br>Noted in section A.4 (Response Codes) that Refer-to-issuer codes (i.e. "01") is not permitted from 16 April 2016 for Visa Transactions.<br>Corrected POS_Data_DE61 field as GPS send it including the 3 Banknet length digits at the front (although length may no longer match this due to trailing space removal on EHI transmission.)<br>Renamed section 7 from "Request Response" to "Transaction Processing Requirements", and included new sections on:<br>• How receiver should duplicate check<br>• How receiver should match transactions<br><br>Added 6 new fields to bottom of all GetTransaction Request messages for Agency Banking (Source_Bank_Ctry, Source_Bank_Account_Format, Source_Bank_Account, Dest_Bank_Ctry, Dest_Bank_Account_Format, Dest_Bank_Account.)<br><br>Added new section A.22 for the values for Source_Bank_Account_Format and Dest_Bank_Account_Format.<br><br>Added new fields for Agency Banking to the GetTransaction WSDL message (only present for Non-Card-Network transactions, of type Payment with LoadSRC=64 (bank transfer)).<br><br>Adjusted the payment transaction examples for new Agency Banking fields.<br>Adjusted Appendix A.16 (Authorisation field Merch_Name_DE43) to state that if card acceptor is in Canada, then the 2-character Canadian province codes are present (instead of country code.)<br>Corrected Cut_Off response message (section 10.2 Response Message) as the response field was incorrectly named.<br>Removed initial text from section 7.1 Response requirements as other parts of the specification state the same thing clearer.<br>Corrected "Acknowledgment" to "Acknowledgement" as that is what the field (defined in section 9.1.2 Response Field Formats).<br>Renumbered section 8.1.1 to 8.1, and 8.1.2 to 8.2 (as there was no original section 8.1)<br>Removed extraneous text from A.5 POS_Data_DE61 Values<br>Added 'Payment' to section 5 (Transaction Types.)<br>Added 'Omitted' as a Data Usage Type in section 8.2. |
| 1.4.3 | 09/03/2016 | Mark | Adding message repeat counter field "SendingAttemptCount" for project DEV_EHI14-7.<br>This indicate will tell the receiver how many times we have repeated a message. (0=not repeated, 1=first repeat, 2=second repeat …)<br>This field is applied to all non-CutOff messages.<br><br>Clarified that currently, GPS defines "GPS Calculated Non-Domestic Fees" as Fees that apply when Txn_CCy ≠ Bill_Ccy.<br>Clarified that currently, GPS defines "GPS Calculated Domestic Fees" as Fees that apply when Txn_CCy = Bill_Ccy.<br>Updated all applicable fee descriptions as a result.<br><br>Clarified in section 7 (Request and response), that GPS will continue to re-send an EHI message until either <Acknowledgement> is set to "1" in response or GPS reach maximum permitted re-tries.<br><br>Added Txn_Type='N' (Second Presentment) into the Txn_Type values for MTID=1240. This is processed in the Financial Request message format.<br><br>Renamed section 10.2 (TxnType), to use actual field name of Txn_Type (instead of TxnType.) |

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| | | | Corrected setion 10.2 (Txn_Type) to specify that Txn_Type='A' (Authorisation) transactions can be either "Authorisation" or "Financial" formatted messages, as determined by the MTID field.<br><br>Added Txn_Type new value of 'G' (Payment Transaction) for DEV_EHI14-4 project. Added to section 8.2 (Txn_Type / MTID) Txn_Type 'G'.<br><br>In the section 8 the "Balance Adjustment / Expiry" transaction types and "Load Unload" transaction types have been merged into a single section "Non-Card-Network Transactions". This is clearer and simpler.<br><br>Renamed appendix "TxnStatCde" to "Txn_Stat_Cde" to precisely match the name of the field.<br>Renamed appendix "AVS Result values" to "AVS_Result values" to precisely match the name of the field.<br>Renamed appendix "POS Data DE61 ..." to "POS_Data_DE61 ..." to precisely match the name of the field.<br>Renamed appendix "POS Data DE 22 ..." to "POS_Data_DE22 ..." to precisely match the name of the field.<br>Added information from project DEV_MT_EHI-44. Added to section 7 and section 8 (Authorisation subsection) to indicate how customer detects a 0100 auth request being sent as an advice (due to original auth request was not correctly responded to in time.) |
| 1.4.2 | 07/03/2016 | Mark | Inserted new section at 8.2 "Transaction Type Table" to indicate which Transaction type section is applicable for every message.<br>Added Transaction type 'C' (Chargeback) to section 8 - Financial request message section, as chargeback comes under here.<br>Clarified what combinations of MTID + Txn_Type mean in new section 8.2, and start of other sections in section 8.<br>Added expanded descriptions of all the fee fields in section 8.<br>Clarified that Bill_Amt does not include GPS Calculated fees (Fee_Fixed and Fee_Rate).<br>Changed examples in section 10.7 to have non-zero fee amounts.<br>Clarified that Settle_Amt is what is received from the Network. |
| 1.4.1 | 03/03/2016 | Mark | Corrected field names in section 8 and WSDL section to ensure case correct to match actual fields sent in live.<br><br>Corrected:<br>• Txn_Ccy -> Txn_CCy<br>• TXN_Time_DE07 -> TXN_Time_DE07<br><br>Updated description for Additional_Data_DE48 to clarify customers should ignore this unless mutually agreed with GPS (in which case GPS would instruct you how to extract the required data from this field.)<br><br>Added Authorised_by_GPS field to Financial Request Message to align with existing functionality.<br>Changed Authorised_by_GPS field in Authorisation request message from Mandatory to Optional, as it might not be present (to align with existing functionality.)<br><br>Added AVS_Result field to Financial Request message (to align with existing functionality.)<br><br>Renamed new field PAN_sequence_number to PAN_Sequence_Number to align with standard field formatting for names and cases (first letter in each word in field is normally upper case.)<br><br>Indented section A.8 Cut-Off Message WSDL to make easier to read.<br><br>Corrected the Response field names to align with WSDL response in section 8.<br>Renamed section 8 from "Data Dictionary" to "EHI GetTransaction Message Fields" to better reflect the fact that it corresponds to the GetTransaction in WSDL.<br><br>In the WSDL Appendix, I've added an example request and response for each different message type. |
| 1.4.0.c | 26/02/2016 | Mark | Fixed typo in changelog for v.1.3.4 release (year 2014 -> 2015)<br>Added section 10.20 for financial type message Merch_Name_DE43 field.<br>Added response code 58 - Transaction not permitted to Terminal. (E.g. this might be used by client if card is not allowed in ATMs, but cardholder attempted to use at ATM.)<br>Added response code 43 - Stolen Card (Pickup).<br>Clarified in the Status Code section that not all codes are appropriate for card status values.<br>Corrected response code "85" to action Approve instead of Decline.<br>Section 6.3 - corrected wording of "Mode 3", to clarify that GPS will ignore any authorisation response messages received from customer in this mode.<br>Removed Hyperlinks in the section 8 name fields - as links are all clearly mentioned in the description field. So now max of 1 link per field. |
| 1.4.0.b | 25/02/2016 | Mark | Changed PIN encryption from using double length DES keys to Triple length DES keys.<br>Triple DES with a triple length key is NIST approved up to 2030, and HSMs are known to support this.<br>(See http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-57pt1r4.pdf section 4.2.2.2).<br>It provides a key space of 2^168 (about 3.7*10^50) possibilities.<br>Currently not supporting AES PIN encryption as HSM support for this is unknown. But Pin fields support a possible future seamless migration.<br>Inserted new section 8.1.2 Usage, to clarify that if a field is optional, it can be present with an empty value, even if Data Type does not permit an empty value.<br>Clarified that POS_Data_DE61 might have anywhere between first 9 and all 14 subfields. |
| 1.4.0.a | 25/02/2016 | Mark | Added:<br>- CVV2<br>- Expiry_Date<br>- PAN_sequence_number<br>- PIN<br>- PIN_Key_Index<br>- PIN_Format |

| Version | Date | Author | Comments |
|---|---|---|---|
| | | | - PIN_Enc_Algorithm<br><br>All these fields will only be present if both:<br>• Customer is configured to receive them<br>• And relevant data is received in the transaction<br><br>Corrected Appendix 10.1 Processing code to correctly describe the 6 digit field (previously only the first two digits - the Transaction Code, were described.)<br><br>Fixed Hyperlinks and Cross References.<br>Cross reference example:<br>A.1 ProcCode (Processing Code) values<br><br>Hyperlink example:<br>10.1 ProcCode (Processing Code) values<br><br>Re-wrote Appendix 10.5 (DE 61 POS Data) to add missing field values and clarify that not all fields may be present, and that subfields are concatenated.<br><br>Added the following Appendices:<br>Added PIN Block Formats appendix (10.14.1)<br>Added PIN Encryption example appendix (10.14.2)<br>Added Additional Amounts formatting appendix (10.15)<br>Added Merchant name/location formatting appendix (10.16)<br>Added POS Data DE22 Authorisation field formatting appendix (10.17)<br>Added POS Data DE22 Financial field formatting (10.18)<br>Added Country Codes (10.19)<br><br>Removed Response code “32 - Completed partially” as not applicable. (For partial approval, use code 10.)<br>Added Action column to Response code values appendix.<br>Made Merch_ID_DE42 Optional in Authorisation and Financial, as this is not guaranteed to arrive for ATM transactions.<br>New section 8.1 “Data Types” explains precisely what the formats mean in the rest of section 8 Data Dictionary.<br>Changed all the data-types in section 8 to better describe the field content, in line with the new Data-Types.<br>Corrected ActBal (actual balance amount in billing currency) from Numeric (5,2) to Amount (9,2)<br>Reformatted document to remove the super-tables that 99% of the entire document was sitting inside. This cause lots of formatting problems. Now the ‘Navigation’ of heading works (MS Word -> View -> Navigation Pane.)<br>Deleted all existing tables in the appendix, and re-created with the same data, as they had broken formatting. |
| 1.3.6 | 02/11/2015 | Ajeesh | Added Approval with Load functionality |
| 1.3.6 | 17/12/2015 | Ajeesh | Added details on fees Dom_Fee_Fixed, Non_Dom_Fee_Fixed, Fx_Fee_Fixed, Other_Fee_Amt, Fx_Fee_Rate, Dom_Fee_Rate and Non_Dom_Fee_Rate. Added DE124 |
| 1.3.6 | 14/01/2016 | Sudheesh | Added comment on Approval with Load |
| 1.3.6 | 17/11/2015 | Ajeesh | Removed ‘06’ from Response code values |
| 1.3.5 | 16/10/2015 | Ajeesh | Data type length amended from Char(2) to Char(3) for field LoadSRC. Added appendix for field LoadType |
| 1.3.4 | 23/09/2015 | Ajeesh | Added valid values for AVS result field |
| 1.3.3 | 22/09/2015 | Ajeesh | Modified the data type for field Authorised_by_GPS |
| 1.3 | 16/09/2015 | Ajeesh | Stand In for Mode 2, Cut off message, Added new fields to EHI - Additional_Data_DE48, Authorised_by_GPS, AVS_Result, CU_Group, InstCode, MTID, ProductID, Record_Data_DE120, SubBIN, TLogIDOrg, VL_Group |
| 1.2 | 25/08/2015 | Ajeesh | Applied consistencies in naming fields |
| 1.1 | 22/07/2015 | Ajeesh | Corrected Txn_Type and Txn_Stat_Code sample data values. |
| 1.1 | 13/08/2015 | Ajeesh | Correction in Web Services Security at Transport Level and Message Level |
| 1.1 | 23/06/2015 | Ajeesh | Added DE022 |
| 1.1 | 25/06/2015 | Ajeesh | Added EHI WSDL, DE28 and DE54 |
| 1.1 | 09/07/2015 | Ajeesh | Removed HTTP GET and POST from WSDL, Amount data type to double |
| 1.1 | 24/06/2015 | Ajeesh | Added mapping column in Transaction type table |
| 1.0 | 28/04/2015 | Ajeesh | Corrections |
| 1.0 | 06/05/2015 | Ajeesh | Corrections |
| 1.0 | 26/04/2015 | Vlad Yan-polsky | Comments |

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# Glossary

## 3

### 3D Secure

3D Secure (3-domain structure), also known as a payer authentication, is a security protocol that helps to prevent fraud in online credit and debit card transactions. This security feature is supported by Visa and Mastercard and is branded as ‘Verified by Visa’ and ‘Mastercard SecureCode’ respectively.

## A

### Acquirer

The merchant acquirer or bank that offers the merchant a trading account, to enable the merchant to take payments in store or online from cardholders.

### Authentication

This includes checks to confirm the cardholder identity, such as PIN, CVV2 and CAVV.

### Authorisation

Stage where a merchant requests approval for a card payment by sending a request to the card issuer to check that the card is valid, and that the requested authorisation amount is available on the card. At this stage the funds are not deducted from the card.

### Automated Fuel Dispenser (AFD)

Automatic fuel dispensers (AFDs) are used at petrol or gas stations for customer self-service fuel payments. Typically the customer inserts their card and enters a PIN number and the AFD authorises a fixed amount (e.g. £99). Once the final payment amount is known, the AFD may reverse the authorisation and/or request a second authorisation.

## C

### Card Scheme

Card network, such as MasterCard or Visa, responsible for managing transactions over the network and for arbitration of any disputes.

### Chargeback

Where a cardholder disputes a transaction on their account and is unable to resolve directly with the merchant, they can raise a chargeback with their card issuer. The chargeback must be for a legitimate reason, such as goods and services not received, faulty goods, or a fraudulent transaction.

### Clearing File/Clearing Transaction

GPS receive batch clearing files from the card networks, containing clearing transactions, such as presentments and network fees. The card issuer transfers the requested settlement amount to the acquirer and 'clears' the amount on the card, reducing the available card balance accordingly.

## E

### EMV

EMV originally stood for "Europay, Mastercard, and Visa", the three companies which created the standard. EMV cards are smart cards, also called chip cards, integrated circuit cards, or IC cards which store their data on integrated circuit chips, in addition to magnetic stripes for backward compatibility.

### External Host

The external system to which GPS sends real-time transaction-related data. The URL to this system is configured within GPS per programme or product. The Program Manager uses their external host system to hold details of the balance on the cards in their programme and perform transaction-related services, such as payment authorisation, transaction matching and reconciliation.

## F

### Fee Groups

Groups which control the card transaction authorisation fees, and other fees, such as recurring fees and GPS web service API fees.

## H

### Hanging Filter

The period of time during which GPS waits for an approved authorisation amount to be settled. This is defined at a GPS product level. A typical default is 7 days for an auth and 10 days for a pre-auth.

## I

### Incremental Authorisation

A request for an additional amount on a prior authorisation. An incremental authorisation is used when the final amount for a transaction is greater than the amount of the original authorisation. For example, a hotel guest might register for one night, but then decide to extend the reservation for additional night. In that case, an incremental authorisation might be performed in order to get approval for additional charges pertaining to the second night.

### Issuer

The card issuer, typically a financial organisation authorised to issue cards. The issuer has a direct relationship with the relevant card scheme.

# M

## Merchant

The shop or store providing a product or service that the cardholder is purchasing. A merchant must have a merchant account, provided by their acquirer, in order to trade. Physical stores use a terminal or card reader to request authorisation for transactions. Online sites provide an online shopping basket and use a payment service provider to process their payments.

## Merchant Category Code (MCC)

A unique identifier of the merchant, to identity the type of account provided to them by their acquirer.

## MIP

Mastercard Interface Processor (MIP) The processing hardware and software system that interfaces with Mastercard's Global Payment System communications network.

# O

## Offline Transaction

This is often used in scenarios where the merchant terminal is not required to request authorisation from the card issuer (for example for certain low risk, small value transactions used by airlines and transport networks). The card CHIP EMV determines if the offline transaction is permitted; if not supported, the terminal declines the transaction. Note: Since the balance on the card balance is not authorised in real-time, there is a risk that the card may not have the amount required to cover the transaction.

# P

## Program Manager

A GPS customer who manages a card program. The program manager can create branded cards, load funds and provide other card or banking services to their end customers.

# S

## sFTP

Secure File Transfer Protocol. File Transfer Protocol FTP) is a popular unencrypted method of transferring files between two remote systems. SFTP (SSH File Transfer Protocol, or Secure File Transfer Protocol) is a separate protocol packaged with SSH that works in a similar way but over a secure connection.

## Smart Client

Smart Client is GPS's user interface for managing your account on the GPS Apex system. It is also called Smart Processor GPS. Smart Client is installed as a desktop application and requires a VPN connection to GPS systems in order to be able to access your account.

## SSL Certification

An SSL certificate displays important information for verifying the owner of a website and encrypting web traffic with SSL/TLS, including the public key, the issuer of the certificate, and the associated subdomains.

## Stand In Processing (STIP)

The card network (Visa and Mastercard) may perform approve or decline a transaction authorisation request on behalf of the card issuer. Depending on your GPS mode, GPS may also provide STIP on your behalf, where your systems are unavailable.

## T

### TLS

Transport Layer Security (TLS) is a security protocol that provides privacy and data integrity for Internet communications. Implementing TLS is a standard practice for building secure web apps.

## V

### Validation

Checks to confirm the card is valid, such as CHIP cryptograms, mag-stripe data (if available) and expiry date

### VROL System

Visa Dispute Resolution Online system, provided by Visa for managing transaction disputes.