



AN 2626—Setting Currency Conversion Rates at the Time of Authorization

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AN 2626—Setting Currency Conversion Rates at the Time of Authorization

Mastercard is announcing enhancements to the Dual Message System that will set the currency conversion rates used at the time of authorization for use in clearing, for transactions requiring currency conversion.

Version History

The version history of this announcement is as follows.

Date	Description of Change	Where to Look
7 May 2019	Initial publication date	

At-A-Glance

The At-a-Glance table provides key information about the systems and groups affected by this announcement, action indicators that specify the appropriate action, and the required implementation date or dates.

Type:	Switching Release Announcement
Audience:	Acquirer, Issuer, Processor
	Each customer must determine the impact on its operations.
Brands:	Mastercard®, Debit Mastercard®, Maestro®, Cirrus®
Release:	20.Q2
Region:	All
System:	Authorization, Clearing
Action Indicator:	Network Mandate—Acquirer, Issuer
	Testing recommended—Acquirer, Issuer
Effective Date:	Dual Message System (Authorization): 9 June 2020 Dual Message System (Clearing): 9 June 2020

Overview

This Overview provides information about the current environment and any applicable background information as it relates to this enhancement. This section also provides a brief explanation of what Mastercard is going to do to address this opportunity and the business drivers behind the enhancement.

Background

Mastercard-issued rates are used for transactions that require currency conversion. These rates can be found in the Currency Conversion Rate File T057 and the Test—Currency Conversion Rate File T058 which contain Mastercard-issued cross rates (Rate Class F) and Mastercard-issued USD rates (Rate Class M).

Mastercard-issued rates are used for all transactions requiring currency conversion cleared in the Dual Message System (Clearing). Currently, the effective day and time for currency conversion rates in clearing are from 08:00 St. Louis, Missouri, USA time on the date the Currency Conversion Rate File T057 is published until 08:00 St. Louis time the following business day.

Mastercard-issued rates are also used by the Dual Message System (Authorization). Currently, the effective date and time of the currency conversion rates in authorization are different, starting at 09:00 St. Louis time the day after the rate file is published (that is, T+1 [where T = Current Day]) until 09:00 St. Louis time the next day (that is, T+2).

The timing of clearing cycles and effectiveness of Mastercard-issued rates in clearing and authorization may lead to differences in currency conversion rates applied between authorization and clearing.

Mastercard provides PDS 0158 (Business Activity), subfield 5 (Central Site Business Date) to identify the official business processing date at the clearing system's processing center. For every Mastercard processing date, there is an associated Currency Conversion Rate File T057.

What Mastercard Is Currently Doing

As a result of the differences in effective dates for the various rate files used by the Dual Message System (Authorization and Clearing), different currency conversion rates are generally applied at the time of authorization and clearing, in which case the cardholder billing amounts calculated in authorization may differ from the cardholder billing amounts calculated in clearing.

What Mastercard Is Going to Do

Mastercard is making enhancements to help ensure that, with limited exceptions, the currency conversion rates effective at the time of authorization will be the rates that are used at the time of clearing.

The following table provides a high level summary of the enhancements.

Topic	Prior to Release 19.Q4	Post Release 19.Q4
Effective Mastercard-issued rates applied in clearing	The effective rate at time of clearing (that is, based on the Currency Conversion Rate File T057 for that clearing day)	The effective rate at time of authorization (that is, based on the Currency Conversion Rate File T057 that was applied in authorization)
Effective Mastercard-issued rates applied in authorization	Based on the rate file published for that processing day (at T+0) and effective 09:00 St. Louis time the following day (T+1) to 09:00 St. Louis time the day after (T+2)	Based on the Currency Conversion Rate File T057 published for that processing day (at T+0) and effective 14:05 St. Louis time that same day (T+0) to 14:05 St. Louis time the following day (T+1).
Publication of Mastercard-issued rates through the Currency Conversion Rate File T057	Approximately 12:00 PM St. Louis time	Approximately 12:00 St. Louis time (no change)
Special cases for currency conversion based on certain Card Acceptor Business Codes (MCCs) (list to be defined and published in a future publication), authorization types, transaction types, and the time lapse between authorization and clearing	No exceptions	Some exceptions
Addition of a new clearing field that will identify the effective date of the rate file that was used for currency conversion	Not Applicable	Addition of new PDS 0015 (Clearing Currency Conversion Identifier) in the IPM Clearing messages T112

Topic	Prior to Release 19.Q4	Post Release 19.Q4
		and in the Clearing Detail File (IP755120-AA)

Why Mastercard Is Implementing These Enhancements

Regulators, consumers, and customers globally want to know the currency conversion rate that will be used to calculate the cardholder billing amount at authorization.

Mastercard is implementing these enhancements to improve the consumer experience by providing certainty and transparency of the currency conversion rate used at the time of transaction authorization. These enhancements will also address regulatory concerns and requirements in certain markets.

Related Documentation

Information relevant to this release announcement can be found in the following documents available on Mastercard Connect™.

Announcements

Refer to these previously published announcements for more information:

- Global Operations Bulletin No. 5, 1 May 2017, "Acquirer Currency Conversion Rate File—Update"

Reference Manuals

Refer to these reference manuals for information about the current state of Mastercard processing:

- Authorization Manual
- Customer Interface Specification Manual
- Global Clearing Management System Reference Manual

Note:

Manuals are updated with necessary changes after release implementation. Depending on timing, information provided in this release announcement may not be reflected in a manual until it is updated.

Customer Impact

This section provides high level information about customer impact. Refer to the Enhancements section for more details.

Is Customer Action Required?

Currency conversion calculations will continue to be performed as described in the Global Clearing Management System Reference Manual. Clearing will use the Currency Conversion Rate File T057 from the date each transaction was originally authorized to calculate currency conversions (with limited exceptions listed as follows).

To provide customers with visibility of the date of the Currency Conversion Rate File T057 used in clearing, Mastercard is introducing a new PDS 0015. The Platform Impact section of this announcement provides more details.

Testing recommended—Acquirer, Issuer

Network Mandate—Acquirer, Issuer

Dual Message System (Clearing)

Acquirers should not include PDS 0015 in any messages sent to Mastercard.

All acquirers must support new PDS 0015 in First Chargebacks/1442, Arbitration Chargebacks/1442, and Fee Collection/1740 messages.

All acquirers registered to receive the Clearing Detail File (IP755120-AA) must support the presence of new PDS 0015.

Issuers

Dual Message System (Clearing)

All issuers must support new PDS 0015 in First Presentment/1240, Second Presentment/1240 and Fee Collection/1740 messages. Issuers should not include PDS 0015 in any message sent to Mastercard.

Transaction Message Flow Impacts

The manner in which a customer is connected to Mastercard determines the group of message flows that apply and the transaction message types they send or receive within that group. Customers can interface to the Mastercard Dual Message System, Single Message System, or both, as applicable. The message flows that are affected by this announcement are marked in the following table.

Acquirer to Mastercard	Mastercard to Issuer	Impacted
Dual Message System	Dual Message System	√
Dual Message System	Single Message System	√
Single Message System	Single Message System	
Single Message System	Dual Message System	√

The following are examples of message types within the Dual Message System and Single Message System:

- Dual Message System—Authorization Request/0100 and First Presentment/1240 messages
- Single Message System—Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages

Enhancements

Mastercard will enhance the Dual Message System (Authorization and Clearing).

These enhancements ensure that, with limited exceptions, the currency conversion rates effective at the time of authorization processing are also used in clearing processing for transactions processed within the Dual Message System.

Dual Message System (Authorization)—Issuers and Acquirers

Currency Conversion

The currency conversion rates published in the Currency Conversion Rate File T057 will become effective in the Authorization Platform on the same day of publication, starting at 14:05 St. Louis time and ending at 14:05 St. Louis time the following day.

Note:

This change will also ensure that the effective time of the rates used in the Dual Message System (Authorization) align with that of the Single Message System.

Dual Message System (Clearing)—Acquirers

Currency conversion calculations will continue to be performed as described in the Global Clearing Management System Reference Manual. However, the Mastercard-issued rates used by the Clearing Platform to perform currency conversion will be the same rates effective at the time of the related authorization requests, with limited exceptions as listed as follows.

Additionally, the Clearing Platform will be updated to support PDS 0015 in the following IPM clearing messages:

- First and Second Presentment/1240
- First and Arbitration Chargeback/1442
- Fee Collection/1740

Acquirers using the the Clearing Detail File (IP755120-AA) (delivered to acquirers via bulk file type TN70) will continue to receive the applicable currency conversion rates and related data elements in this file, which can continue be used for reconciliation. This file will be updated to include PDS 0015 (Clearing Currency Conversion Identifier), subfield 1 (Currency Conversion Date), and subfield 2 (Currency Conversion Indicator).

Acquirers that do not use the Clearing Detail File (IP755120-AA) can refer to DE 16 (Date, Conversion) in related authorization messages to determine the date of the currency conversion rate file applicable for the transaction. This is explained in the following table.

When...	Then...
<p>Acquirers perform reconciliation using either: The formula method (Illustrative Method with Formulas) described in the Global Clearing Management System Reference Manual, which requires the Currency Conversion Rate File T057 or The method described in Global Operations Bulletin No. 5, 1 May 2017, in the article titled "Acquirer Currency Conversion Rate File—Update," which requires the following versions of the Acquirer Currency Conversion Rate File:</p> <ul style="list-style-type: none"> Regional First Presentments (production bulk file TQQ4, test bulk file TQQ6) Regional Second Presentments (production bulk file TQQ8, test bulk file TQR0) Intracurrency Presentments (production bulk file TQX2, test bulk file TQX4) 	<p>The following method for determining the applicable clearing currency conversion rates will apply:</p> <ul style="list-style-type: none"> Match an eligible transaction clearing record with its corresponding authorization message (Acquirers should determine the most effective method for matching; one approach would be to use the Banknet Reference Number found in CIS DE 63, subfield 2) Use the date from DE 16 of the corresponding authorization message to determine which day's rate file to use for clearing message reconciliation

Example

An acquirer submits two transactions to Mastercard Clearing for GCMS processing date 3 December 2019 which were authorized successfully on 1 December 2019.

- Based on the nature of the transaction, Transaction A is eligible for use of the rates in effect at the time of authorization, during clearing processing at Mastercard
- Based on the nature of the transaction (for example, ineligible transaction type), Transaction B is not eligible for use of the rates in effect at the time of authorization, during clearing processing at Mastercard

Acquirers can use the following methods to determine which effective date rates are applied for currency conversion by Mastercard during clearing processing.

Acquirers That Use the IP755120-AA Clearing Detail Report

For each transaction cleared, refer to new PDS 0015 in the report to determine the date of the rate file used by Mastercard during clearing processing, and the reason why that date was used. In this example, PDS 0015 will contain the following:

Transaction	PDS 0015, Subfield 1	PDS 0015, Subfield 2
Transaction A	191201	Value 1 Matched with authorization information and authorization date rates applied for currency conversion.
Transaction B	191203	Value 0 Not Applicable (for example, transaction not eligible/applicable for currency conversion rate effective at the time of authorization) and GCMS Central site processing date rates applied for currency conversion.

All Other Acquirers

For each transaction cleared, determine whether or not the transaction is eligible for use of the rates in effect at the time of authorization.

If so, use the date in DE 16 of the corresponding Authorization Request Response/0110 message to determine the date of the rate file used by Mastercard during clearing processing.

If not, the rate file in effect on the clearing business processing date applies. The date in DE 16 is not used in this case.

Transaction	Value to Use	Explanation
Transaction A	191201 from DE 16	The currency conversion rates in effect on 1 December 2019 will be applicable in clearing (even though the clearing business processing date is 3 December 2019).
Transaction B	Clearing business processing date 3 Dec 2019	Because the transaction is not eligible for use of the rates in effect at the time of authorization, the currency conversion rates effective on the clearing business processing date will be applied.

Dual Message System (Clearing)—Issuers

Currency Conversion

Currency conversion calculations will continue to be performed as described in the Global Clearing Management System Reference Manual. However, the timing of the applicable Mastercard-issued rates used in the clearing calculations will change to align with the Mastercard-issued rates applied during the authorization of the transaction based on transaction eligibility.

For issuers using the T112 Bulk File Type to reconcile, the applicable currency conversion rate and related data elements (for example, DE 9 [Conversion Rate, Reconciliation] and DE 10 [Conversion Rate, Cardholder Billing]) will continue to be included in this file.

The Clearing Platform will be updated to support the new PDS 0015 in First Presentment/1240, Second Presentment/1240, and Fee Collection/1740 messages.

Clearing Examples

Example

An acquirer submits two transactions to Mastercard Clearing for GCMS processing date 3 December 2019 which were authorized successfully on 1 December 2019.

- Based on the nature of the transaction, Transaction A is eligible for use of the rates in effect at the time of authorization, during clearing processing at Mastercard
- Based on the nature of the transaction (for example, ineligible transaction type), Transaction B is not eligible for use of the rates in effect at the time of authorization, during clearing processing at Mastercard

For each transaction cleared, refer to new PDS 0015 to determine the date of the rate file used by Mastercard during clearing processing, and the reason why that date was used. In this example, PDS 0015 will contain the following:

Transaction	PDS 0015, subfield 1 (Currency Conversion Date)	PDS 0015, subfield 2 (Currency Conversion Indicator)
Transaction A	191201	Value 1 (Matched with authorization information and authorization date rates applied for currency conversion.)
Transaction B	191203	Value 0 Not Applicable (for example, transaction not eligible/applicable for currency conversion rate effective at the time of authorization) and GCMS Central site processing date rates applied for currency conversion.

Dual Message System (Clearing)—Issuers and Acquirers

Special Cases

Under certain circumstances transactions will not be eligible for use of the rates in effect at the time of clearing. The following table provides an explanation of the special cases that can apply.

Special Case	Description	Impact
Special Case 1: Delayed clearing submissions	Transactions submitted for clearing more than eight calendar days (U.S. Central date) after authorization.	These transactions will not benefit from the enhancements described in this announcement. The Mastercard-issued rates as published in the Currency Conversion Rate File T057 for the current clearing processing day will apply.
Special Case 2: Multiple authorizations, one clearing message	Transaction contains multiple authorizations, for example, an initial authorization and subsequent incremental authorizations.	If the clearing record was submitted within eight calendar days of the initial authorization, the Mastercard-issued rates as published in the Currency Conversion Rate File T057 used for the initial authorization will apply.
Special Case 3: One authorization, multiple clearing messages	There are multiple clearing messages associated with a single authorization message. For example, a transaction for GBP 100 is authorized, but two messages are presented for clearing: one for GBP 80 and one for GBP 20.	If any of the clearing messages were presented within eight calendar days of the authorization, the clearing system will use the currency conversion rates from the Currency Conversion Rate File T057 in effect at the time of the authorization. If a clearing record is submitted after the eight calendar day (U.S. Central date) period from authorization, the Mastercard-issued rates as published in Currency Conversion Rate File T057 on the day of clearing, will apply for this clearing record.

Special Case	Description	Impact
Special Case 4: Cleared, not authorized	Transaction was presented for clearing without authorization (that is, transaction was cleared but not authorized).	The Mastercard-Issued rates as published in the Currency Conversion Rate File T057 on the day of clearing will apply.
Special Case 5: Partial authorizations	The transaction was partially authorized.	If any of the clearing messages were presented within eight calendar days of the authorization, the clearing system will use the currency conversion rates from the Currency Conversion Rate File T057 in effect at the time of the authorization.
Special Case 6: Specific MCCs, transaction types, and authorization types	Transactions classified under certain MCCs, authorization types or transaction types.	Transactions classified under certain MCCs, authorization types, and transaction types will have the currency conversion rates in the Currency Conversion Rate File T057 at the date of clearing applied to calculate currency conversion.

Additional Information for Special Case 6: Specific MCCs and Authorization Types

Transactions involving certain conditions will not benefit from the enhancements described in this announcement:

- MCCs (DE 26 [Card Acceptor Business Codes])
- Transaction types (DE 3, subfield 1 [Transaction Type])
- Authorization conditions such as:
 - Preauthorizations (DE 61, subfield 7 [POS Transaction Status])
 - Final Authorization status (DE 48, subelement 61, subfield 5 [Final Authorization Indicator])

For such transactions, the currency conversion rates as published in the Currency Conversion Rate File T057 at time of clearing will apply.

A complete list of ineligible MCCs, transaction types, and authorization types will be provided in another publication. Any future changes to ineligible MCC codes and transaction types will be communicated via Bulletin Announcements.

Platform Impact

The following table lists the impact of this announcement. For items that are marked √ (Yes), details are provided below.

Topic	Dual Message System (Authorization)	Dual Message System (Clearing)	Single Message System
Message Flows			
Message Layouts			
Data Element Definitions		√	
IPM MPE		√	

Topic	Dual Message System (Authorization)	Dual Message System (Clearing)	Single Message System
Interchange			
CAB Programs, Descriptions, and Associated MCCs			
Edits			
Error Numbers			
Alternate Processing			
Interchange Compliance			
Pricing/Fees			
Reports		√	
Bulk Files			
Forms			
Quarterly Mastercard Reporting			
Transaction Investigator		√	
SAFE			
Single Message Transaction Manager			
250-byte Batch Data File			
80-byte Financial Institution Table File			

Clearing

Mastercard will update the Clearing Platform as follows.

IPM Data Element and Private Data Subelement Definitions

Mastercard will update the following data elements or private data subelement definitions to support this announcement.

PDS 0015—Clearing Currency Conversion Identifier

PDS 0015 (Clearing Currency Conversion Identifier) provides the information of the effective date of the Currency Conversion Rate File T057 used for currency conversion by Mastercard Clearing System .

Attributes

Data Representation:	an-7; TAGLLL
Tag Field:	0015
Length Field:	3 positions, value = 007
Data Field:	Fixed length, 7 positions
Subfields:	2

Justification: See "Subfields"

Usage

The following table shows the usage of this PDS (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message Type Identifier	Org	Sys	Dst
Presentment, Addendum, and Chargeback Messages			
First Presentment/1240	•	X	M
s1 Currency Conversion Date	•	X	M
s2 Currency Conversion Indicator	•	X	M
First Chargeback/1442	•	X	M
Arbitration Chargeback/1442	•	X	M
s1 Currency Conversion Date	•	X	M
s2 Currency Conversion Indicator	•	X	M
Second Presentment/1240	•	X	M
s1 Currency Conversion Date	•	X	M
s2 Currency Conversion Indicator	•	X	M
Retrieval and Fee Collection Messages			
Fee Collection (Retrieval Fee Billing)/1740	•	X	M
s1 Currency Conversion Date	•	X	M
s2 Currency Conversion Indicator	•	X	M
Fee Collection (Handling Fees)/1740	•	X	M
s1 Currency Conversion Date	•	X	M
s2 Currency Conversion Indicator	•	X	M
Fee Collection (Other than Retrieval Fee Billing/Handling Fees)1740	•	X	M
s1 Currency Conversion Date	•	X	M
s2 Currency Conversion Indicator	•	X	M

PDS 0015 Subfields

Subfield 1—Currency Conversion Date

PDS 0015 (Clearing Currency Conversion Indicator), subfield 1 (Currency Conversion Date) contains the effective date of the Currency Conversion Rate File T057 applied for processing. The value in this subfield is in YYMMDD format.

	Attribute	Value
Subfield ID	n-2	01
Subfield Length	n-2	06

	Attribute	Value
Data Representation	n-6; YYMMDD	
Justification	Right	

Subfield 2—Currency Conversion Indicator

PDS 0015 (Clearing Currency Conversion Identifier), subfield 2 (Currency Conversion Indicator) indicates whether the Currency Conversion Rate File T057 applicable to the clearing record was effective at the time of authorization or at the time of business processing.

	Attribute	Value
Subfield ID	n-2	02
Subfield Length	n-2	01
Data Representation	an-1	
Justification	N/A	

Value	Description
0	Not Applicable (for example, transaction not eligible/applicable for currency conversion rate effective at the time of authorization) and GCMS Central site processing date rates applied for currency conversion.
1	Matched with authorization information and authorization date rates applied for currency conversion.
2	No matching authorization information and GCMS Central site processing date rates applied for currency conversion.

Clearing Detail File (IP755120-AA)

The Clearing Detail File (IP755120-AA) is offered to acquirers to facilitate acquirer reconciliation. Please refer to the addition of new PDS 0015 in detail record at the end after current layout of DE 72 (Date Record).

Name	DE	Subfield	PDS	Length
Transaction Originator Institution ID Code	94			11
Date Record	72			100
Currency Conversion Date		1	0015	6
Currency Conversion Indicator		2	0015	1

IPM MPE

Mastercard will update these IPM MPE tables with new PDS 0015.

- IP0008T1—PDS Attributes
- IP0009T1—PDS Subfield Attributes

Clearing Transaction Investigator

The Clearing Transaction Investigator will be updated to support PDS 0015 (Clearing Currency Conversion Identifier).