AN 7113 Adding Optional Subelements to Expand Tag Value Support for Chip Transactions

Type:
Switching release announcement

Audience:
Acquirer
Issuer
Processor
Network enablement partner

Region:
Global

Brand:
Mastercard®
Debit Mastercard®
Maestro®
Cirrus®

Product or service:
Chip and contactless

Release:
23.Q4

Action indicator:
Attention warranted (network-related): acquirer, issuer
Testing recommended: acquirer, issuer

System:
Authorization
Clearing
Single Message System

Published:
6 June 2023

Effective:
13 October 2023
7 November 2023

Executive overview

Mastercard is adding optional subelements to expand tag value support for chip transactions.

Effective date details

Date	Details
13 October 2023	Dual Message System (Clearing) Single Message System
7 November 2023	Dual Message System (Authorization)

Customer benefit

Adding optional subelements to expand tag value support for chip transactions helps enhance transaction security and supports the deployment of ongoing contactless technology improvements.

What Mastercard is doing

Mastercard is adding these optional subelements, with tag values, to Data Element (DE) 55 (Integrated Circuit Card [ICC] System Related Data):

- Authenticated Application Data (9F60)
- Kernel Identifier-Terminal (96)

Version history

Each customer must determine the impact on its operations.

Date	Description of change
6 June 2023	Added Other media to Related documentation
18 April 2023	Initial publication date

Customer impact

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

Attention warranted (network-related): acquirer, issuer

Acquirers should be aware of their ability to send the new optional subelements identified with the corresponding new tag values in DE 55, when the applicable transaction data is available.

Issuers should be aware that they need to update their host systems to be able to process the new optional subelements identified with the corresponding new tag values in DE 55, when the applicable transaction data is available.

Testing recommended: acquirer, issuer

Mastercard recommends testing for acquirers and issuers to support this release announcement.

Transaction message flow impact

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. This announcement affects the message flows marked in the Transaction message flow impact table.

Transaction message flow impact

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	√

Examples of message types within the Dual Message System and Single Message System are:

- Authorization Request/0100 and First Presentment/1240 messages
- Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages

Enhancements

Mastercard will introduce changes to support this announcement.

Dual Message System (Authorization and Clearing) and Single Message System

Mastercard will add these optional subelements, with tag values, to DE 55 (Integrated Circuit Card [ICC] System Related Data):

- Authenticated Application Data (9F60), allows issuer proprietary data provided by the card to the terminal to be communicated securely to the issuer host.
- Kernel Identifier-Terminal (96), identifies the particular contactless kernel used by the terminal to process the transaction.

Related documentation

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

Reference manuals

For information about the current state of Mastercard processing refer to the:

- *Customer Interface Specification*
- *IPM Clearing Formats*
- *Single Message System Specifications*
- *M/Chip Requirements for Contact and Contactless*

Other media

Statements made in videos presented at the Customer Technical Conference are current when the video was recorded. Videos are currently available only for those announcements presented at the Customer Technical Conference. Mastercard may update announcements without updating the corresponding video. Refer to the most recent version of the announcement for the most up-to-date information.

AN 7113 Adding Optional Subelements to Expand Tag Value Support for Chip Transactions, Customer Technical Conference, May 2023

Platform impact

The Platform impact table lists the impact of this announcement. For items that are marked √ (Yes), details are available in the corresponding topics.

Platform impact

Topic	Dual Message System (Authorization)	Dual Message System (Clearing)	Single Message System
Message flows			
Message layouts			
Data element definitions	√	√	√
IPM MPE			
Interchange			
CAB programs, descriptions, and associated MCCs			
Edits			
Error numbers			
Alternate processing			
Interchange compliance			
Pricing and fees			
Reports			

Topic	Dual Message System (Authorization)	Dual Message System (Clearing)	Single Message System
Bulk files			
Forms			
Quarterly Mastercard reporting			
Transaction Investigator			
SAFE			
Single Message Transaction Manager			
250-byte Batch Data File			
80-byte Financial Institution Table File			

Authorization

Mastercard will introduce changes to the Authorization Platform to support this announcement.

CIS data element definitions

Mastercard will update this data element to support this announcement.

DE 55 (Integrated Circuit Card [ICC] System-Related Data)

DE 55 (Integrated Circuit Card [ICC] System-Related Data) contains binary data that only the issuer, the issuer agent, or MDES processes; it is used locally by the payment application on the chip at a chip-capable terminal. This data element is present in chip full-grade transactions and can be present in DSRP transactions.

DE 55 Subelements

The following table lists the optional subelements in Authorization Request/0100 messages that contain chip data.

Optional Subelements in Authorization Request/0100

When DE 55 is present in the Authorization Request/0100 message, the following subelements are optional in DE 55.

Mastercard will add the following new optional subelements to support this announcement.

Subelement description	Tag value	Component[1]	Each component length[2]	Total subelement length[3]
Authenticated Application Data	9F60	ID	2	var-131
		Length	1	
		Data	var-128	
Kernel Identifier-Terminal	96	ID	1	10
		Length	1	
		Data	8	

Clearing

Mastercard will introduce changes to the Clearing Platform to support this announcement.

IPM clearing formats

Mastercard will update this data element to support this announcement.

DE 55 (Integrated Circuit Card [ICC] System-Related Data)

DE 55 (Integrated Circuit Card [ICC] System-Related Data) contains data related to ICC systems.

Optional subelements

Customers may send the optional subelements listed in this table.

Mastercard will add the following new optional subelements to support this announcement.

Subelement description	Tag value	Format	Component	Each component length	Total subelement length
Authenticated Application Data	9F60	b	tag	2	var-131
		length	1		
		data	var-128		
Kernel Identifier-Terminal	96	b	tag	1	10
		length	1		
		data	8		

[1] **The hexadecimal representation is given here. Every two positions of hexadecimal data is one byte of binary data.**

[2] **Lengths are in binary format.**

[3] **The Total Subelement Length is the sum of the subelement's ID, length, and data subfields.**

Single Message System

Mastercard will introduce changes to the Single Message System to support this announcement.

DE 55 (Integrated Circuit Card [ICC] System-Related Data)

DE 55 (Integrated Circuit Card [ICC] System-Related Data) contains chip data formatted in accordance with the Europay Mastercard Visa (EMV) specifications. EMV uses Basic Encoding Rules (BER). (Reference the EMV specifications for further details regarding the coding of BER-TLV [ID, Length, Value] data objects.)

Optional subelements for DE 55 in a Financial Transaction Request/0200

The following table conveys the chip specification requirements for subelements in DE 55 for a Financial Transaction Request/0200. These subelements are optional.

Subelement name	ID value	Length
Authenticated Application Data	9F60	var-128
Kernel Identifier: Terminal	96	8