



**EMV<sup>®</sup>**

**3-D Secure**

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## **Bridging Message Extension**

Version 2.0

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# Introduction

This document describes the Bridging Message Extension and how existing EMV® 3-D Secure (3DS) v2.1.0 and v2.2.0 components can provide or consume additional data related to the *EMV® 3-D Secure Protocol and Core Functions Specification* (hereinafter referred to as the *Core Specification*) v2.3.1.1.

The Bridging Message Extension enhances the existing v2.1.0 and v2.2.0 specifications by enabling the implementation of features that are incorporated in the v2.3.1.1 specification. In addition, during the migration to v2.3.1.1, support of the Bridging Message Extension will increase consistency of the key 3DS features provided in v2.1.0, v2.2.0 and v2.3.1.1.

The first version of the Bridging Message Extension (v1.0) defined the Recurring Data, Additional Data, Challenge Data, and File URL Data, which is used to enable automation of the switching between the 3DS SDK and an out-of-band (OOB) authentication application, better support the processing of recurring transactions, and incorporate selected elements, values and requirements that were introduced in v2.3.1.0. The second version of the Bridging Message Extension (v2.0) continues support for the v1.0 capabilities and provides additional elements/values that were defined in the *Core Specification* v2.3.1.1.

In the future, as new capabilities are added to the new 3DS specification versions, EMVCo will consider incorporating them, as appropriate, into a new version of the Bridging Message Extension.

The Bridging Message Extension defines four sets of data:

- Recurring Data;
- Additional Data;
- Challenge Data; and
- File URL Data.

Recurring Data, Additional Data and File URL Data contain new data or new values for existing data in the AReq/ARes, PReq/Pres or RReq messages for v2.1.0 and v2.2.0.

Challenge Data is only provided in CReq/CRes messages for the App-based flow when the Message Version Number is 2.2.0 (not 2.1.0).

The *EMV® 3-D Secure Bridging Message Extension* should be used in conjunction with the *Core Specification* v2.3.1.1 and the *EMV® 3-D Secure Specifications—Frequently Asked Questions*, available on the EMVCo website.

For differences between v1.0 and v2.0 of the *EMV® 3-D Secure Bridging Message Extension*, please refer to *EMV® Specification Bulletin No. 295*, available on the EMVCo website.

## Bridging Message Extension Support and Implementation

The 3DS sending component builds the 3DS v2.1.0 or v2.2.0 message with the assumption that the 3DS receiving component does not support the Bridging Message Extension, so the 3DS transaction can complete without the Bridging Message Extension. Then the 3DS sending component provides the additional information in the Bridging Message Extension.

The 3DS v2.3.1.1 data elements present in the message extension may duplicate existing data elements from the 3DS v2.1.0 and v2.2.0 messages but contain new or different values. The data element values are set in the message extension according to the *Core Specification v2.3.1.1*, while the core part of the 3DS messages is set according to the *Core Specification v2.1.0* and *v2.2.0*. In such cases, the data element value in the message extension overrides the data element value in the core part of the 3DS message.

If the Bridging Message Extension is supported, then the 3DS component shall fully support at least one of the data objects (Recurring Data, Challenge Data, Additional Data or File URL Data) of the message extension and implement the related requirements of the *Core Specification v2.3.1.1*, as shown below in Table 1.

**Table 1: Bridging Message Extension Data Objects Supported or Processed Per 3DS Component**

Data	3DS SDK	3DS Server	DS	ACS
Recurring Data		x	x	x
Challenge Data	x			x
Additional Data		x	x	x
File URL Data		x	x	

These four data objects are Optional in the Bridging Message Extension messages, but at least one data object should be present to use the Bridging Message Extension.

The data elements inside these data objects may have presence conditions (Required/Optional/Conditional) related to:

- the other data elements in the same data object; or
- the data element in the 3DS message (AReq, ARes,...),

but not related to the other data objects in the Bridging Message Extension.

For example, in the Recurring Data object, the Recurring Date presence depends on the value of the Recurring Indicator. Another example is the Authentication Method presence that depends on the Transaction Status in the ARes or RReq message.

## Bridging Message Extension Version

The Extension Version Number should be kept the same across all message exchanges in a 3DS transaction.

When responding, the recipient of the Bridging Message Extension shall use the same Extension Version Number for the message pair (AReq/ARes, CReq/CRes, PReq/PRes) as the one received. If the recipient does not support that Extension Version Number, it shall not include the Bridging Message Extension in its response.

## Recurring Data

With the Recurring Data object, the 3DS Requestor and the 3DS Server can provide additional information to the ACS regarding recurring transactions, such as frequency, end date, etc.

If the Recurring Data object (see Table 4 for data elements) is present in the Bridging Message Extension, the ACS shall ignore the recurring transaction-related data (Recurring Expiry, Recurring Frequency) that may be present in the AReq message.

## Challenge Data

With the Challenge Data object, the ACS and the 3DS SDK may automate the switching between the 3DS SDK and an OOB Authentication App during an OOB challenge. The 3DS SDK indicates that it supports automatic switching in the OOB App URL Indicator. If supported, the ACS provides to the 3DS SDK the OOB App URL and OOB App Label in the Challenge Data object. The 3DS SDK displays a button that invokes the switching to the OOB Authentication App.

The ACS may also use the Challenge Data object to request that the 3DS SDK mask the data entered by the Cardholder during a challenge.

The Challenge Data object shall only be provided if the Message Version Number of the CReq/CRes message is 2.2.0.

## Challenge Flow with OOB Authentication Requirements

These requirements refer to Section 3.2 of the *Core Specification v2.3.1.1*.

The message extension support of OOB challenge-related data is limited to ACS UI Type = 04 (OOB). ACS UI Type = 06 (HTML OOB) is NOT supported in the 3DS Bridging Message Extension.

For the ACS and 3DS SDK that support the OOB App URL:

- the ACS shall implement Req 401, limited to ACS UI Type = 04,
- the 3DS SDK shall implement Req 399, Req 400, Req 403, Req 404, Req 406, Req 407, Req 408 and Req 409, limited to ACS UI Type = 04.

### **Challenge Flow with Data Entry Masking Requirements**

The ACS requests the Challenge Data Entry to be masked by setting Challenge Data Entry Masking to Y (limited to ACS UI Type = 01).

The 3DS SDK shall implement Challenge Data Entry Masking (Figures 44 and 45, Table A.26).

## **Additional Data**

With the Additional Data object, the 3DS Server, the ACS and the DS can share additional information from 3DS v2.3.1.1 during the 3DS Authentication, for example:

- whether the OOB Authentication App used by the ACS supports the 3DS Requestor App URL;
- the Acquirer Country Code;
- the Authentication Method used by the ACS;
- the Card Security Code;
- the Device Information Version supported by the ACS;
- the Transaction Challenge Exemption applied by the ACS;
- the Challenge Error Reporting: detailed information in case of error in the CReq/CRes messages; or
- the reason for cancelling the Challenge.

### **Challenge Cancellation Indicator Requirements**

In order to provide the Challenge Cancellation Indicator, the ACS shall implement the updates to Section 5.9.5 (ACS CReq Message Error Handling—01-APP) in the *Core Specification*.



## File URL Data

By using the File URL Data object, the 3DS Server may retrieve the Card Range Data in a file downloaded from the DS rather than from the PRes messages.

To use the file download, both the 3DS Server and the DS shall implement all the requirements from Section 5.6 (PReq/Pres Message Handling Requirements) in the *Core Specification v2.3.1.1*.

The Card Range Data in the file is provided in the format defined in the 3DS specification and corresponding to the protocol version of the PReq message.

## Bridging Message Extension Data Elements

Table 2: Bridging Message Extension Data Elements

Data Element/Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Assigned Extension Group Identifier Field Name: <code>id</code>	A unique identifier for the extension.	3DS SDK 3DS Server ACS DS	Length: 14 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"><li>A000000802-004</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R CReq = R CRes = R PReq = R PRes = R
Criticality Indicator Field Name: <code>criticalityIndicator</code>	A Boolean value indicating whether the recipient must understand the contents of the extension to interpret the entire message.	3DS SDK 3DS Server ACS DS	JSON Data Type: Boolean Value accepted: <ul style="list-style-type: none"><li>false</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R CReq = R CRes = R PReq = R PRes = R

Data Element/Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Data Field Name: <i>data</i>	The data carried in the extension.	3DS SDK 3DS Server ACS DS	Length: Variable, maximum 8059 characters JSON Data Type: Object Values accepted: <ul style="list-style-type: none"> <li>Refer to Table 3 for data elements</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R CReq = R CRes = R PReq = R PRes = R
Extension Name Field Name: <i>name</i>	The name of the extension data set as defined by the extension owner.	3DS SDK 3DS Server ACS DS	Length: 8 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"> <li>Bridging</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R CReq = R CRes = R PReq = R PRes = R

## Data

**Table 3: Data**

Data Element/Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Additional Data Field Name: <code>addData</code>	Specific data from the <i>Core Specification v2.3.1.1</i> .	3DS Server ACS	Length: Variable JSON Data Type: Object Values accepted: <ul style="list-style-type: none"> <li>Refer to Table 6 for data elements</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = O ARes = O RReq = O
Challenge Data Field Name: <code>challengeData</code>	The data specific to the Challenge.  Present if Message Version Number = 2.2.0; Absent if Message Version Number = 2.1.0.	3DS SDK ACS	Length: Variable JSON Data Type: Object Values accepted: <ul style="list-style-type: none"> <li>Refer to Table 5 for data elements</li> </ul>	01-APP	01-PA 02-NPA	CReq = O CRes = O AND Message Version Number = 2.2.0
Extension Version Number Field Name: <code>version</code>	Version number of the message extension.	3DS SDK 3DS Server ACS DS	Length: 3 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"> <li>2.0</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R CReq = R CRes = R PReq = R PRes = R

Data Element/Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
File URL Data Field Name: fileURLData	Card range data provided in a file.	3DS Server DS	Length: Variable JSON Data Type: Object Values accepted: <ul style="list-style-type: none"><li>Refer to Table 7 for data elements</li></ul>	N/A	N/A	PReq = O PRes = O
Recurring Data Field Name: recurringData	The data specific to a recurring transaction.	3DS Server	Length: Variable JSON Data Type: Object Values accepted: <ul style="list-style-type: none"><li>Refer to Table 4 for data elements</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = O

## Recurring Data

**Table 4: Recurring Data**

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Recurring Amount Field Name: <code>recurringAmount</code>	Recurring amount in minor units of currency with all punctuation removed.	3DS Server	Length: Variable, maximum 48 characters JSON Data Type: String Example: Purchase amount is USD 123.45 Example values accepted: <ul style="list-style-type: none"><li>• 12345</li><li>• 012345</li><li>• 0012345</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C Required if Recurring Indicator/Amount Indicator = 01 in the Recurring Data object
Recurring Currency Field Name: <code>recurringCurrency</code>	Currency in which the Recurring Amount is expressed.	3DS Server	Length: 3 characters; numeric JSON Data Type: String Values accepted: <ul style="list-style-type: none"><li>• ISO 4217 three-digit currency codes, other than those listed in Table A.5 in the <i>Core Specification</i>.</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C Required if the Recurring Amount is present in the Recurring Data object

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Recurring Currency Exponent Field Name: <code>recurringExponent</code>	Minor units of currency as specified in the ISO 4217 currency exponent. Examples: <ul style="list-style-type: none"> <li>• USD = 2</li> <li>• JPY = 0</li> </ul>	3DS Server	Length: 1 character; numeric JSON Data Type: String	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C  Required if the Recurring Amount is present in the Recurring Data object
Recurring Date Field Name: <code>recurringDate</code>	Effective date of the new authorised amount following the first/promotional payment in a recurring or instalment transaction.	3DS Server	Length: 8 characters JSON Data Type: String Date format accepted: <ul style="list-style-type: none"> <li>• YYYYMMDD</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C  Required if Recurring Indicator/ Frequency Indicator = 01 in the Recurring Data object
Recurring Expiry Field Name: <code>recurringExpiry</code>	Date after which no further authorisations are performed.	3DS Server	Length: 8 characters JSON Data Type: String Date format accepted: <ul style="list-style-type: none"> <li>• YYYYMMDD</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	Required if there is an end date
Recurring Frequency Field Name: <code>recurringFrequency</code>	Indicates the minimum number of days between authorisations for a recurring or instalment transaction.	3DS Server	Length: Variable, maximum 4 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>• Numeric values between 1 and 9999</li> </ul> Example values accepted: <ul style="list-style-type: none"> <li>• 31</li> <li>• 031</li> <li>• 0031</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C  Required if Recurring Indicator/ Frequency Indicator = 01 in the Recurring Data object

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Recurring Indicator Field Name: recurringInd	<p>Indicates whether the recurring or instalment payment has a fixed or variable amount and frequency.</p> <p>The Recurring Indicator object contains:</p> <ul style="list-style-type: none"> <li>the Amount Indicator</li> <li>the Frequency Indicator</li> </ul> <p>Example:</p> <pre>{ "recurringInd": {   "amountInd": "01",   "frequencyInd": "02" } }</pre>	3DS Server	<p>JSON Data Type: Object</p> <p><b>Amount Indicator</b></p> <p>Field Name: amountInd</p> <p>Values accepted:</p> <ul style="list-style-type: none"> <li>01 = Fixed Purchase Amount</li> <li>02 = Variable Purchase Amount</li> <li>03–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for DS use</li> </ul> <p><b>Frequency Indicator</b></p> <p>Field Name: frequencyInd</p> <p>Values accepted:</p> <ul style="list-style-type: none"> <li>01 = Fixed Frequency</li> <li>02 = Variable or Unknown Frequency</li> <li>03–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for DS use</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R if the Recurring Data object is present



## Challenge Data

**Table 5: Challenge Data**

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Challenge Data Entry Masking  Field Name: challengeDataEntryMa sking	Indicates that the 3DS SDK shall mask the data entered by the Cardholder.	ACS	Length: 1 character JSON Data Type: String Values accepted: <ul style="list-style-type: none"><li>Y = Mask the data entered by the Cardholder</li><li>N = Do not mask the data entered by the Cardholder</li></ul>	01-APP	01-PA 02-NPA	CRes = C  Required if ACS UI Type = 01
OOB App Label  Field Name: oobAppLabel	Label to be displayed for the link to the OOB App URL.  Example: "oobAppLabel": "Open Your Bank App"	ACS	Length: Variable, maximum 45 characters JSON Data Type: String	01-APP	01-PA 02-NPA	CRes = C  Required for ACS UI Type = 04 if: <ul style="list-style-type: none"><li>OOB App URL Indicator = 01 in the Challenge Data object</li></ul> AND

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
						<ul style="list-style-type: none"> <li>the ACS uses the OOB Authentication App automatic switching feature for this transaction</li> </ul>
OOB App Status Field Name: oobAppStatus	Status code indicating the type of problem encountered when using the OOB App URL.	3DS SDK	Length: Variable, maximum 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Open OOB App URL failed</li> <li>02–99 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> </ul>	01-APP	01-PA 02-NPA	CReq = C Required if the Cardholder encountered an error when selecting the OOB App URL for ACS UI Type = 04

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
OOB App URL Field Name: oobAppURL	<p>Universal App Link to an authentication app used in the OOB authentication. The OOB App URL will open the appropriate location within the OOB Authentication App.</p> <p>Refer to Table 1.3 in the <i>Core Specification v2.3.1.1</i> for the Universal App Link definition.</p>	ACS	<p>Length: Variable, maximum 2048 characters</p> <p>JSON Data Type: String</p> <p>Value accepted:</p> <ul style="list-style-type: none"> <li>Universal App Link</li> </ul>	01-APP	01-PA 02-NPA	<p>CRes = C</p> <p>Required for</p> <p>ACS UI Type = 04 if the OOB App Label is present</p> <p>AND if:</p> <ul style="list-style-type: none"> <li>OOB App URL Indicator = 01 in the Challenge Data object;</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>the ACS uses the OOB Authentication App automatic switching feature for this transaction</li> </ul>

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
<b>OOB App URL Indicator</b> Field Name: oobAppURLInd	Indicates if the 3DS SDK supports the OOB App URL.	3DS SDK	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Supported</li> <li>02 = Not supported by the device</li> <li>03 = Not supported by the 3DS Requestor</li> <li>04–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for DS use</li> </ul>	01-APP	01-PA 02-NPA	CReq = R if the Challenge Data object is present
<b>OOB Continuation Indicator</b> Field Name: oobContinue	Indicator notifying the ACS that the Cardholder has selected the OOB Continuation button in an OOB authentication method, or that the 3DS SDK automatically completes without any Cardholder interaction.	3DS SDK	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Cardholder clicks the button</li> <li>02 = Automatic complete</li> <li>03–99 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> </ul>	01-APP	01-PA 02-NPA	CReq = C Required if ACS UI Type = 04 in the CRes message

## Additional Data

**Table 6: Additional Data**

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
3DS Requestor App URL Indicator  Field Name: <code>threeDSRequestorAppURLInd</code>	Indicates whether the OOB Authentication App used by the ACS during a challenge supports the 3DS Requestor App URL.	ACS	Length: 1 character JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>Y = 3DS Requestor App URL is supported by the OOB Authentication App</li> <li>N = 3DS Requestor App URL is NOT supported by the OOB Authentication App</li> </ul>	01-APP	01-PA 02-NPA	ARes = C  Required if Message Version Number = 2.2.0
3DS Requestor Authentication Indicator  Field Name: <code>threeDSRequestorAuthenticationInd</code>	Indicates the type of Authentication Request.  This data element provides additional information to the ACS to determine the best approach for handling an Authentication Request.	3DS Server	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Payment transaction</li> <li>02 = Recurring transaction</li> <li>03 = Instalment transaction</li> <li>04 = Add card</li> <li>05 = Maintain card</li> </ul>	01-APP 02-BRW	01-PA 02-NPA	AReq = C  Required if 3DS Requestor Authentication Indicator = 08 or 09 or 10  Otherwise, Optional

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"> <li>• 06 = Cardholder verification as part of EMV token ID&amp;V</li> <li>• 07 = Billing Agreement</li> <li>• 08 = Split shipment</li> <li>• 09 = Delayed shipment</li> <li>• 10 = Split payment</li> <li>• 11–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>• 80–99 = Reserved for DS use</li> </ul>			
3RI Indicator Field Name: <code>threeRIInd</code>	<p>Indicates the type of 3RI request.</p> <p>This data element provides additional information to the ACS to determine the best approach for handling a 3RI request.</p>	3DS Server	<p>Length: 2 characters</p> <p>JSON Data Type: String</p> <p>Values accepted:</p> <ul style="list-style-type: none"> <li>• 01 = Recurring transaction</li> <li>• 02 = Instalment transaction</li> <li>• 03 = Add card</li> <li>• 04 = Maintain card information</li> <li>• 05 = Account verification</li> <li>• 06 = Split shipment</li> <li>• 07 = Top-up</li> <li>• 08 = Mail Order</li> <li>• 09 = Telephone Order</li> </ul>	03-3RI	01-PA 02-NPA	<p>AReq = C</p> <p>Required if:</p> <ul style="list-style-type: none"> <li>• Message Version Number = 2.2.0</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>• 3RI Indicator = 14, 15, 16, 17 or 18</li> </ul> <p>Otherwise, Optional</p>

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"> <li>• 10 = Trust List status check</li> <li>• 11 = Other payment</li> <li>• 12 = Billing Agreement</li> <li>• 13 = Device Binding Status check</li> <li>• 14 = Card Security Code Status check</li> <li>• 15 = Delayed shipment</li> <li>• 16 = Split payment</li> <li>• 17 = FIDO credential deletion</li> <li>• 18 = FIDO credential registration</li> <li>• 19 = Decoupled Authentication Fallback</li> <li>• 20–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>• 80–99 = Reserved for DS use</li> </ul>			
Acquirer Country Code Field Name: <code>acquirerCountryCode</code>	<p>The code of the country where the acquiring institution is located (in accordance with ISO 3166-1).</p> <p>The DS may edit the value provided by the 3DS Server.</p>	3DS Server DS	<p>Length: 3 characters</p> <p>JSON Data Type: String</p> <p>Values accepted:</p> <ul style="list-style-type: none"> <li>• ISO 3166-1 numeric three-digit country codes, other than exceptions listed in</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R if the Additional Data object is present

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			Table A.5. of the <i>Core Specification v2.3.1.1</i> .			
Acquirer Country Code Source Field Name: <code>acquirerCountryCodeSource</code>	This data element is populated by the system setting the Acquirer Country Code.  The DS may edit the value provided by the 3DS Server.	3DS Server DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = 3DS Server</li> <li>02 = DS</li> <li>03–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for DS use</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R if the Additional Data object is present
Authentication Method Field Name: <code>authenticationMethod</code>	Indicates the list of authentication types the Issuer will use to challenge the Cardholder, when in the ARes message, or what was used by the ACS, when in the RReq message.  Note: For 03-3RI, only present for Decoupled Authentication.	ACS	Size: Variable, 1–99 elements JSON Data Type: Array of string String: 2 characters Values accepted: <ul style="list-style-type: none"> <li>01 = Static Passcode</li> <li>02 = SMS OTP</li> <li>03 = Key fob or EMV card reader OTP</li> <li>04 = App OTP</li> <li>05 = OTP Other</li> <li>06 = KBA</li> <li>07 = OOB Biometrics</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = C RReq = C <ul style="list-style-type: none"> <li>Required in the ARes message if Transaction Status = C or D</li> <li>Required in the RReq message if Transaction Status = Y or N</li> </ul>



Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"> <li>• 08 = OOB Login</li> <li>• 09 = OOB Other</li> <li>• 10 = Other</li> <li>• 11 = Push Confirmation</li> <li>• 12 = Decoupled</li> <li>• 13 = WebAuthn</li> <li>• 14 = SPC</li> <li>• 15 = Behavioural biometrics</li> <li>• 16 = Electronic ID</li> <li>• 17–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>• 80–99 = Reserved for DS use</li> </ul>			
Browser Screen Color Depth Field Name: browserColorDepth	Value representing the bit depth of the colour palette for displaying images, in bits per pixel.  Obtained from the Cardholder browser using the screen.colorDepth property.  Refer to Section A.6 in the <i>Core Specification v2.3.1.1</i> for more details.	3DS Server	Length: 1–2 characters; numeric JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>• 1–99</li> </ul> Note: If an ACS does not support the value provided, then the ACS can use the closest supported value. For example, if the value provided = 30 and the ACS does not support that	02-BRW	01-PA 02-NPA	AReq = C  Required if Browser JavaScript Enabled = true  Otherwise, Optional

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			value, then the ACS could use the value = 24.			
Card Security Code Field Name: <code>cardSecurityCode</code>	Three- or four-digit security code printed on the card.	3DS Server	Length: Variable, 3-4 characters, numeric  Action defined by Payment System rules.  JSON Data Type: String	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C  Conditional based on DS rules
Card Security Code Status Field Name: <code>cardSecurityCodeStatus</code>	Enables the communication of Card Security Code Status between the ACS, the DS and the 3DS Requestor.	ACS DS	Length: 1 character JSON Data Type: String  Values accepted: <ul style="list-style-type: none"> <li>Y = Validated</li> <li>N = Failed validation</li> <li>U = Status unknown, unavailable, or does not apply</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C  ARes = C  Conditional based on DS rules
Card Security Code Status Source Field Name: <code>cardSecurityCodeStatusSource</code>	This data element will be populated by the system setting the Card Security Code Status.	ACS DS	Length: 2 characters JSON Data Type: String  Values accepted: <ul style="list-style-type: none"> <li>01 = DS</li> <li>02 = ACS</li> <li>03–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for DS use</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = C  ARes = C  Required if the Card Security Code Status is present in the Additional Data object

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Challenge Cancelation Indicator  Field Name: challengeCancel	Indicator informing the ACS and the DS that the authentication has been cancelled.  Note: The Additional Data object is not valid for the CReq/CRes messages. Therefore, the Challenge Cancelation Indicator may only be present in the RReq message.	ACS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>• 01 = Cardholder selected “Cancel”</li> <li>• 02 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>• 03 = Transaction Timed Out—Decoupled Authentication</li> <li>• 04 = Transaction Timed Out at ACS—other timeouts</li> <li>• 05 = Transaction Timed Out at ACS—First CReq not received by ACS</li> <li>• 06 = Transaction Error</li> <li>• 07 = Unknown</li> <li>• 08 = Transaction Timed Out at 3DS SDK</li> <li>• 09 = Error message in response to the CRes message sent by the ACS</li> <li>• 10 = Error message in response to the CReq message received by the ACS</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	RReq = C  Required if the ACS identifies that the authentication transaction was cancelled for reasons as indicated  Value of 04 or 05 is required if Transaction Status Reason = 14

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"> <li>11–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for future DS use</li> </ul>			
<b>Challenge Error Reporting</b>  Field Name: challengeErrorReporting	Copy of the Erro Message sent or received by the ACS in case of error in the CReq/CRes messages.	ACS	Length: Variable JSON Data Type: Object Values accepted: <ul style="list-style-type: none"> <li>Refer to Table B.12 in the <i>Core Specification v2.3.1.1</i> for data elements.</li> </ul>	01-APP 02-BRW	01-PA 02-NPA	RReq = C  Required if Challenge Cancellation Indicator = 09 or 10
<b>Device Information Recognised Version</b>  Field Name: deviceInfoRecognisedVersion	Indicates the highest Data Version of the Device Information supported by the ACS.	ACS	Length: Variable, minimum 3 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>Active Device Information Data Version</li> </ul> Refer to <i>EMV® Specification Bulletin 255</i> for values	01-APP	01-PA 02-NPA	ARes = R if the Additional Data object is present
<b>Transaction Challenge Exemption</b>  Field Name: transChallengeExemption	Exemption applied by the ACS to authenticate the transaction without requesting a challenge.	ACS	Length: 2 characters JSON Data Type: String Values accepted:	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = O

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
	Note: The accepted values match the values of the 3DS Requestor Challenge Indicator.		<ul style="list-style-type: none"> <li>• 05 = Transaction Risk Analysis exemption</li> <li>• 08 = Trust List exemption</li> <li>• 10 = Low Value exemption</li> <li>• 11 = Secure Corporate Payments exemption</li> <li>• 79 = No exemption applied</li> <li>• 01–04, 06, 07, 09 and 12–78 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>• 80–99 = Reserved for DS use</li> </ul>			
Transaction Characteristics Field Name: <code>transChar</code>	Indicates to the ACS specific transactions identified by the Merchant.  Refer to Merchant Risk Indicator in the <i>Core Specification v2.3.1.1</i>	3DS Server	Size: Variable, 1–2 elements  JSON Data Type: Array of string  String: 2 characters  Value accepted: <ul style="list-style-type: none"> <li>• 01 = Cryptocurrency transaction</li> <li>• 02 = NFT transaction</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = O

## File URL Data

Table 7: File URL Data

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Card Range Data Download Indicator  Field Name: cardRangeDataDownloadInd	Indicates if the 3DS Server supports Card Range Data from a file.  Note: If present, this field contains the value Y.	3DS Server	Length: 1 character JSON Data Type: String Value accepted: <ul style="list-style-type: none"><li>Y = Download supported</li></ul>	N/A	01-PA 02-NPA	PReq = C  Present only if the 3DS Server supports the Card Range Data File download
Card Range Data File URL  Field Name: cardRangeDataFileURL	Fully Qualified URL of the DS File containing the Card Range Data for download.  Note: When the Card Range Data File URL is present, the file contains the entire Card Range Data, and the 3DS Server ignores any Card Range Data and Serial Number present in the PRes message.	DS	Length: Variable, maximum 2048 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"><li>Fully Qualified URL</li></ul> Example: <ul style="list-style-type: none"><li><a href="https://server.dsdomain.name.com/cardfile.json">https://server.dsdomain.name.com/cardfile.json</a></li></ul>	N/A	01-PA 02-NPA	PRes = C  Present if Card Range Data Download Indicator = Y in the File URL Data object and the DS supports the Card Range Data File download

# Message Format

**Table 8: Message Extension Data Elements**

Data Element	Field Name
Assigned Extension Group Identifier	id
Criticality Indicator	criticalityIndicator
Extension Name	name
Data	data
Extension Version Number	version
Recurring Data	recurringData
Recurring Amount	recurringAmount
Recurring Currency	recurringCurrency
Recurring Currency Exponent	recurringExponent
Recurring Date	recurringDate
Recurring Expiry	recurringExpiry
Recurring Frequency	recurringFrequency
Recurring Indicator	recurringInd
Challenge Data	challengeData
Challenge Data Entry Masking	challengeDataEntryMasking
OOB App Label	oobAppLabel
OOB App Status	oobAppStatus
OOB App URL	oobAppURL
OOB App URL Indicator	oobAppURLInd
OOB Continuation Indicator	oobContinue
Additional Data	addData

Data Element	Field Name
3DS Requestor App URL Indicator	threeDSRequestorAppURLInd
3DS Requestor Authentication Indicator	threeDSRequestorAuthenticationInd
3RI Indicator	threeRIInd
Acquirer Country Code	acquirerCountryCode
Acquirer Country Code Source	acquirerCountryCodeSource
Authentication Method	authenticationMethod
Browser Screen Color Depth	browserColorDepth
Card Security Code	cardSecurityCode
Card Security Code Status	cardSecurityCodeStatus
Card Security Code Status Source	cardSecurityCodeStatusSource
Challenge Cancellation Indicator	challengeCancel
Challenge Error Reporting	challengeErrorReporting
Device Information Recognised Version	deviceInfoRecognisedVersion
Transaction Challenge Exemption	transChallengeExemption
Transaction Characteristics	transChar
File URL Data	fileURLData
Card Range Data Download Indicator	cardRangeDataDownloadInd
Card Range Data File URL	cardRangeDataFileURL



## Bridging Message Extension Samples

The following are samples of the Bridging Message Extension that may be included in the AReq, ARes, RReq, CReq, CRes, PReq or PRes messages by the 3DS Server, 3DS SDK or ACS.

### Sample AReq Bridging Message Extension

```
"messageExtension": [{
  "name": "Bridging",
  "id": "A000000802-004",
  "criticalityIndicator": false,
  "data": {
    "version": "2.0",
    "recurringData": {
      "recurringAmount": "1234",
      "recurringCurrency": "826",
      "recurringExponent": "2",
      "recurringExpiry": "20240405",
      "recurringFrequency": "30",
      "recurringDate": "20220405",
      "recurringInd": {"amountInd": "01", "frequencyInd": "01"}
    },
    "addData": {
      "acquirerCountryCode": "250",
      "acquirerCountryCodeSource": "01",
      "browserColorDepth": "24",
      "cardSecurityCode": "123",
      "cardSecurityCodeStatus": "Y",
      "cardSecurityCodeStatusSource": "01",
      "threeDSRequestorAuthenticationInd": "08",
      "transChar": ["01"]
    }
  }
}]
```

## Sample ARes Bridging Message Extension

```
"messageExtension": [{
  "name": "Bridging",
  "id": "A000000802-004",
  "criticalityIndicator": false,
  "data": {
    "version": "2.0",
    "addData": {
      "authenticationMethod": ["07", "08"],
      "cardSecurityCodeStatus": "Y",
      "cardSecurityCodeStatusSource": "02",
      "deviceInfoRecognisedVersion": "1.5",
      "transChallengeExemption": "08",
      "threeDSRequestorAppURLInd": "Y"
    }
  }
}]
```

## Sample RReq Bridging Message Extension

```
"messageExtension": [{
  "name": "Bridging",
  "id": "A000000802-004",
  "criticalityIndicator": false,
  "data": {
    "version": "2.0",
    "addData": {
      "authenticationMethod": ["07", "08"],
      "challengeCancel": "09",
      "challengeErrorReporting": {
        "threeDSServerTransID":
          "8a880dc0-d2d2-4067-bcb1-b08d1690b26e",
        "errorCode": "203", ...
      }
    }
  }
}]
```

## Sample CReq Bridging Message Extension

```
"messageExtension": [{
  "name": "Bridging",
  "id": "A000000802-004",
  "criticalityIndicator": false,
  "data": {
    "version": "2.0",
    "challengeData": {
      "oobAppStatus": "01",
      "oobAppURLInd": "01",
      "oobContinue": "02"
    }
  }
}]
```

## Sample CRes Bridging Message Extension

```
"messageExtension": [{
  "name": "Bridging",
  "id": "A000000802-004",
  "criticalityIndicator": false,
  "data": {
    "version": "2.0",
    "challengeData": {
      "oobAppLabel": "OOB APP",
      "oobAppURL": "https://oobapp.com/here",
      "challengeDataEntryMasking": "N"
    }
  }
}]
```

## Sample PReq Bridging Message Extension

```
"messageExtension": [{  
  "name": "Bridging",  
  "id": "A000000802-004",  
  "criticalityIndicator": false,  
  "data": {  
    "version": "2.0",  
    "fileURLData": {  
      "cardRangeDataDownloadInd": "Y"  
    }  
  }  
}]
```

## Sample PRes Bridging Message Extension

```
"messageExtension": [{  
  "name": "Bridging",  
  "id": "A000000802-004",  
  "criticalityIndicator": false,  
  "data": {  
    "version": "2.0",  
    "fileURLData": {  
      "cardRangeDataFileURL":  
        "https://server.dsdomainname.com/cardfile.json"  
    }  
  }  
}]
```