



**EMV®**

**3-D Secure**

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# **Attribute Verification Message Extension**

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# Introduction

This document describes the Attribute Verification Message Extension and explains how existing EMV® 3-D Secure (3DS) v2.2.0 and v2.3.1 components can provide additional data related to Cardholder attributes such as age, name, citizenship or address for verification.

This first version of the Attribute Verification Message Extension defines the Verification Request Data and Verification Response Data, which can be used by Merchants offering services such as restricted goods purchases, online gambling, or adult content, who are required by regulations to block access to those services by minors.

The Verification Request Data is sent within the AReq message, and the Verification Response Data is sent in either the ARes or RReq message, depending on whether a challenge is required for the request.

For additional information about extensions, please refer to the *EMV 3-D Secure Protocol and Core Functions Specification*.

## Attribute Verification Message Extension Data Elements

Table 1: Attribute Verification 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 Server DS ACS	Length: 18 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"><li>A000000802-005-001</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = 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 Server DS ACS	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
Data Field Name: <code>data</code>	The data carried in the extension.	3DS Server DS ACS	Length: Variable, maximum 5000 characters JSON Data Type: Object Values accepted: <ul style="list-style-type: none"><li>Refer to Table 2 for data elements</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Extension Name Field Name: name	The name of the extension data set as defined by the extension owner.	3DS Server DS ACS	Length: 22 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"><li>Attribute Verification</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R

## Data

**Table 2: Data**

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Verification Request Data Field Name: <code>verificationReqData</code>	The data specific to the verification request.	3DS Server DS	Length: Variable, 1–99 elements JSON Data Type: Array of objects 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
Verification Response Data Field Name: <code>verificationResData</code>	The data specific to the verification response.	ACS DS	Length: Variable, 1–99 elements JSON Data Type: Array of objects 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	ARes = C Required if Verification Response Indicator = N, otherwise absent RReq = C Required if Verification Response Indicator = Y in the ARes message, otherwise absent

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Verification Response Indicator Field Name: <code>verificationResInd</code>	Indicates whether the verification response will be provided after challenge processing.  Note: For Merchant-initiated SPC, and if Verification Response Indicator = Y in the initial ARes message, the 3DS Server repeats the verification request in the second AReq message.	ACS DS	Length: 1 character JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>Y = All verification responses are only provided after challenge processing</li> <li>N = All verification responses are only provided before challenge processing</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = R  If the source is the DS, then the value will always be N
Extension Version Number Field Name: <code>version</code>	Version number of the message extension.	3DS Server ACS DS	Length: 3 characters JSON Data Type: String Value accepted: <ul style="list-style-type: none"> <li>1.0</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R ARes = R RReq = R

## Verification Request Data

**Table 3: Verification Request Data**

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Attribute Name Field Name: <code>attrName</code>	Indicates the type of attribute verification requested.	3DS Server DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"><li>• 01 = Age</li><li>• 02 = Date of birth</li><li>• 03 = Citizenship</li><li>• 04 = ID number</li><li>• 05 = Core attribute</li><li>• 06–79 = 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
Match Type Field Name: <code>matchType</code>	Indicates the verification method needed.  Note: Values 01, 02, 03, 04, 05, 06 are applicable when Attribute Name = 01, 02.	3DS Server DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"><li>• 01 = Less than</li><li>• 02 = Greater than</li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AReq = R

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"><li>• 03 = Less than or equal</li><li>• 04 = Greater than or equal</li><li>• 05 = Equal</li><li>• 06 = Not equal</li><li>• 07 = Compare</li><li>• 08–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li><li>• 80–99 = Reserved for DS use</li></ul>			

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Match Value  Field Name: <code>matchValue</code>	Indicates the value against which the verification will be performed	3DS Server DS	Length: 1–45 characters JSON Data Type: String Example: 18 (for verifying if the Cardholder is 18 years or older).  If Attribute Name = 02 (Date of birth), then the 3DS Requestor should map the date of birth in YYYYMMDD format.  If Attribute Name = 03 (Citizenship), then the 3DS Requestor should map the country code (in accordance with ISO 3166-1).	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AREq = C  Required if Attribute Name = 01, 02, 03, 04 in Verification Request Data
Core Attribute Field  Field Name: <code>coreAttrField</code>	Indicates the field name present in the core message against which the verification will be performed.  Note: Value should be provided in the core message for the field name mentioned in this attribute.	3DS Server DS	Length: 1–45 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"><li><code>billAddrCity</code></li><li><code>billAddrCountry</code></li><li><code>billAddrLine1</code></li><li><code>billAddrLine2</code></li><li><code>billAddrLine3</code></li><li><code>billAddrPostCode</code></li><li><code>billAddrState</code></li></ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	AREq = C  Required if Attribute Name = 05

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"><li>• cardholderName</li><li>• email</li><li>• homePhone</li><li>• shipAddrCity</li><li>• shipAddrCountry</li><li>• shipAddrLine1</li><li>• shipAddrLine2</li><li>• shipAddrLine3</li><li>• shipAddrPostCode</li><li>• shipAddrState</li><li>• taxId (only for v2.3.1 or higher)</li><li>• workPhone</li></ul>			

## Verification Response Data

**Table 4: Verification Response Data**

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Attribute Name Field Name: <code>attrName</code>	Indicates the type of attribute verification requested.	ACS DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Age</li> <li>02 = Date of birth</li> <li>03 = Citizenship</li> <li>04 = ID number</li> <li>05 = Core attribute</li> <li>06–79 = 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	ARes = R RReq = R
Core Attribute Field Field Name: <code>coreAttrField</code>	Indicates the field name present in the core message against which the verification was performed.	3DS Server DS	Length: 1–45 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li><code>billAddrCity</code></li> <li><code>billAddrCountry</code></li> <li><code>billAddrLine1</code></li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = C RReq = C Required if Attribute Name = 05

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
	Note: Value should be provided in the core message for the field name mentioned in this attribute.		<ul style="list-style-type: none"> <li>billAddrLine2</li> <li>billAddrLine3</li> <li>billAddrPostCode</li> <li>billAddrState</li> <li>cardholderName</li> <li>email</li> <li>homePhone</li> <li>shipAddrCity</li> <li>shipAddrCountry</li> <li>shipAddrLine1</li> <li>shipAddrLine2</li> <li>shipAddrLine3</li> <li>shipAddrPostCode</li> <li>shipAddrState</li> <li>taxId (only for v2.3.1 or higher)</li> <li>workPhone</li> </ul>			
Verification Response Source  Field Name: verificationResSource	This data element will be populated by the system setting the verification response.	ACS DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = ACS</li> <li>02 = DS</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = R RReq = R

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
			<ul style="list-style-type: none"> <li>03–79 = Reserved for EMVCo future use (values invalid until defined by EMVCo)</li> <li>80–99 = Reserved for DS use</li> </ul>			
<b>Result Code</b>  Field Name: resultCode	Status of the verification request.	ACS DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Matched successfully (or true)</li> <li>02 = Not matched (or false)</li> <li>03 = Matched partially</li> <li>04 = Attribute requested is supported for verification but could not complete the request</li> <li>05 = Attribute requested is not supported for verification</li> <li>06–79 = 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	ARes = R RReq = R

Data Element/ Field Name	Description	Source	Length/Format/Values	Device Channel	Message Category	Message Inclusion
Reason Code Field Name: <code>reasonCode</code>	Provides information on why the Result Code field has the specified value.	ACS DS	Length: 2 characters JSON Data Type: String Values accepted: <ul style="list-style-type: none"> <li>01 = Data available and verified successfully</li> <li>02 = Data limited but verified successfully</li> <li>03 = Data unavailable</li> <li>04 = Invalid data submitted</li> <li>05–79 = 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	ARes = C RReq = C  Optional if Result Code = 01 in Verification Response Data
Verification Method Field Name: <code>verificationMethod</code>	Provides information on what method was used by the source for the attribute verification.	ACS DS	Length: 1–500 characters JSON Data Type: String Examples: <ul style="list-style-type: none"> <li>Government source</li> <li>DMV</li> <li>IRS</li> </ul>	01-APP 02-BRW 03-3RI	01-PA 02-NPA	ARes = O RReq = O

# Message Format

**Table 5: Message Extension Data Elements**

Data Element	Field Name
Assigned Extension Group Identifier	id
Criticality Indicator	criticalityIndicator
Extension Name	name
Data	data
Verification Request Data	verificationReqData
Attribute Name	attrName
Match Type	matchType
Match Value	matchValue
Core Attribute Field	coreAttrField
Verification Response Data	verificationResData
Attribute Name	attrName
Core Attribute Field	coreAttrField
Verification Response Source	verificationResSource
Result Code	resultCode
Reason Code	reasonCode
Verification Method	verificationMethod
Verification Response Indicator	verificationResInd
Extension Version Number	version

# Attribute Verification Message Extension Samples

The following are samples of the Attribute Verification Message Extension that may be included in the AReq, ARes or RReq messages by the 3DS Server, DS or ACS.

## Sample AReq Attribute Verification Message Extension

### Use Case 1 – Age Verification Request

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationReqData": [  
        {  
          "attrName": "01",  
          "matchType": "02",  
          "matchValue": "18"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 2 – Name Verification Request

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationReqData": [  
        {  
          "attrName": "05",  
          "matchType": "07",  
          "coreAttrField": "cardholderName"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 3 – Date of Birth Verification Request

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationReqData": [  
        {  
          "attrName": "02",  
          "matchType": "04",  
          "matchValue": "20021016"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 4 – Age and Name Verification Request

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationReqData": [  
        {  
          "attrName": "01",  
          "matchType": "02",  
          "matchValue": "18"  
        },  
        {  
          "attrName": "05",  
          "matchType": "07",  
          "coreAttrField": "cardholderName"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

## Sample ARes/RReq Attribute Verification Message Extension

### Use Case 1 – Age Verification Response in ARes

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationResInd": "N",  
      "verificationResData": [  
        {  
          "attrName": "01",  
          "resultCode": "01",  
          "verificationResSource": "01",  
          "verificationMethod": "DMV"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 2 – Name Verification Response in RReq

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationResData": [  
        {  
          "attrName": "05",  
          "coreAttrField": "cardholderName",  
          "resultCode": "01",  
          "reasonCode": "01",  
          "verificationResSource": "01",  
          "verificationMethod": "IRS"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 3 – Date of Birth Verification Response in RReq

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationResData": [  
        {  
          "attrName": "02",  
          "resultCode": "01",  
          "verificationResSource": "01"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 4 – Age and Name Verification Response in RReq

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationResData": [  
        {  
          "attrName": "01",  
          "resultCode": "01",  
          "verificationResSource": "01",  
          "verificationMethod": "DMV"  
        },  
        {  
          "attrName": "05",  
          "coreAttrField": "cardholderName",  
          "resultCode": "02",  
          "reasonCode": "03",  
          "verificationResSource": "01"  
        }  
      ],  
      "version": "1.0"  
    }  
  }  
]
```

### Use Case 5 – Response When a Challenge Is Necessary for Attribute Verification

```
"messageExtension": [  
  {  
    "name": "Attribute Verification",  
    "id": "A0000000802-005-001",  
    "criticalityIndicator": false,  
    "data": {  
      "verificationResInd": "Y",  
      "version": "1.0"  
    }  
  }  
]
```