



**EMV®**

# **Secure Remote Commerce**

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## **Specification – JavaScript SDK**

Version 1.4

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## Revision Log – Version 1.4

The following changes have been made to the document since the publication of version 1.3:

- Minor editorial changes throughout the document, with sections and tables renumbered where necessary
- Is Recognized (Section 2.3)
  - Optional `idTokens` of type `List<JWT>` added to request parameters
  - Description of `recognized` in response parameters updated
- Checkout (Section 2.9)
  - Optional `encryptedBillingAddress` of type `JWE<Address>` added to request parameters
- Authentication Methods Lookup (Section 2.13)
  - `authenticationContext` deprecated in request parameters
  - Required `authenticationReasons` of type `List<AuthenticationReason>` added to request parameters
  - Conditional `srcDpaId` of type `String` added to request parameters
  - Conditional `dpaData` of type `DpaData` added to request parameters
  - Conditional `dpaTransactionOptions` of type `DpaTransactionOptions` added to request parameters
  - Optional `authenticationSessionId` of type `String` added to response parameters
- Authenticate (Section 2.14)
  - `authenticationContext` deprecated in request parameters
  - Required `authenticationReasons` of type `List<AuthenticationReason>` added to request parameters
  - Conditional `srcDpaId` of type `String` added to request parameters
  - Conditional `dpaData` of type `DpaData` added to request parameters
  - Conditional `dpaTransactionOptions` of type `DpaTransactionOptions` added to request parameters
  - Optional `authenticationSessionId` of type `String` added to request parameters
  - Optional `authenticationSessionId` of type `String` added to response parameters

- Is Recognized (Section 2.3)
  - Description updated to allow for recognition tokens that have been issued by the SRCi
- Get SRC Profile (Section 2.4)
  - Description updated to allow for recognition tokens that have been issued by the SRCi

# Contents

<b>Legal Notice .....</b>	<b>i</b>
<b>Revision Log – Version 1.4.....</b>	<b>ii</b>
<b>Contents .....</b>	<b>iv</b>
<b>Tables .....</b>	<b>vi</b>
<b>1 Introduction .....</b>	<b>1</b>
1.1 Scope .....	1
1.2 Constraints .....	1
1.3 Audience .....	1
1.4 References .....	2
1.4.1 Normative References .....	2
1.4.2 Published EMVCo Documents .....	2
1.5 Definitions.....	3
1.6 Notational Conventions.....	4
1.6.1 Abbreviations .....	4
1.6.2 Terminology and Conventions.....	4
<b>2 Web Client SDK .....</b>	<b>5</b>
2.1 Data Elements.....	5
2.2 Initialize SRC SDK.....	5
2.2.1 Request Parameters .....	6
2.2.2 Response Attributes.....	7
2.2.3 Application Errors.....	7
2.3 Is Recognized.....	7
2.3.1 Request Parameters .....	8
2.3.2 Response Attributes.....	8
2.3.3 Application Errors.....	9
2.4 Get SRC Profile .....	9
2.4.1 Request Parameters .....	10
2.4.2 Response Attributes.....	10
2.4.3 Application Errors.....	10
2.5 Identity Lookup .....	11
2.5.1 Request Parameters .....	11
2.5.2 Response Attributes.....	11
2.5.3 Application Errors.....	12
2.6 Initiate Identity Validation.....	12

2.6.1	Request Parameters .....	13
2.6.2	Response Attributes.....	13
2.6.3	Application Errors.....	14
2.7	Complete Identity Validation .....	14
2.7.1	Request Parameters .....	15
2.7.2	Response Attributes.....	15
2.7.3	Application Errors.....	16
2.8	Enrol Card .....	16
2.8.1	Request Parameters .....	17
2.8.2	Response Attributes.....	18
2.8.3	Application Errors.....	19
2.9	Checkout .....	19
2.9.1	Request Parameters .....	21
2.9.2	Response Attributes.....	24
2.9.3	Application Errors.....	26
2.10	Delete Card .....	27
2.10.1	Request Parameters .....	27
2.10.2	Response Attributes.....	28
2.10.3	Application Errors.....	28
2.11	Unbind AppInstance .....	28
2.11.1	Request Parameters .....	29
2.11.2	Response Attributes.....	29
2.11.3	Application Errors.....	29
2.12	Add Billing Address .....	30
2.12.1	Request Parameters .....	30
2.12.2	Response Attributes.....	31
2.12.3	Application Errors.....	31
2.13	Authentication Methods Lookup.....	31
2.13.1	Request Parameters .....	32
2.13.2	Response Attributes.....	33
2.13.3	Application Errors.....	34
2.14	Authenticate .....	34
2.14.1	Request Parameters .....	35
2.14.2	Response Attributes.....	37
2.14.3	Application Errors.....	38
2.15	Standard Errors .....	38

## Tables

Table 1.1: Normative References.....	2
Table 1.2: EMVCo References.....	3
Table 2.2.1: Initialize SRC SDK Method.....	5
Table 2.2.2: Request Parameters.....	6
Table 2.2.3: Application Errors .....	7
Table 2.3.1: Is Recognized Method.....	8
Table 2.3.2: Request Attributes .....	8
Table 2.3.3: Response Attributes .....	9
Table 2.4.1: Get SRC Profile Method .....	9
Table 2.4.2: Request Parameters.....	10
Table 2.4.3: Response Attributes .....	10
Table 2.5.1: Identity Lookup Method .....	11
Table 2.5.2: Request Parameters.....	11
Table 2.5.3: Response Attributes .....	12
Table 2.5.4: Application Errors .....	12
Table 2.6.1: Initiate Identity Validation Method .....	12
Table 2.6.2: Request Parameters.....	13
Table 2.6.3: Response Attributes .....	13
Table 2.6.4: Application Errors .....	14
Table 2.7.1: Complete Identity Validation Method .....	14
Table 2.7.2: Request Parameters.....	15
Table 2.7.3: Response Attributes .....	16
Table 2.7.4: Application Errors .....	16
Table 2.8.1: Enrol Method.....	16
Table 2.8.2: Request Parameters.....	17
Table 2.8.3: Response Attributes .....	18
Table 2.8.4: Application Errors .....	19
Table 2.9.1: Checkout Method .....	19
Table 2.9.2: Request Parameters.....	21
Table 2.9.3: Response Attributes .....	24
Table 2.9.4: Application Errors .....	26
Table 2.10.1: Delete Card Method .....	27
Table 2.10.2: Request Parameters.....	27
Table 2.10.3: Response Attributes .....	28
Table 2.10.4: Application Errors .....	28
Table 2.11.1: Unbind AppInstance Method .....	28
Table 2.11.2: Request Parameters.....	29
Table 2.11.3: Response Attributes .....	29
Table 2.11.4: Application Errors .....	29
Table 2.12.1: Add Billing Address Method.....	30

Table 2.12.2: Request Parameters.....	30
Table 2.12.3: Response Attributes .....	31
Table 2.12.4: Application Errors .....	31
Table 2.13.1: Authentication Methods Lookup Method.....	32
Table 2.13.2: Request Parameters.....	32
Table 2.13.3: Response Attributes .....	33
Table 2.13.4: Application Errors .....	34
Table 2.14.1: Authenticate Method.....	34
Table 2.14.2: Request Parameters.....	35
Table 2.14.3: Response Attributes .....	37
Table 2.14.4: Application Errors .....	38
Table 2.15.1: Standard Errors .....	39



# 1 Introduction

Secure Remote Commerce (SRC) is an evolution of remote commerce that provides for secure and interoperable card acceptance established through a standard specification.

This document, the EMV® Secure Remote Commerce Specification – JavaScript SDK, (hereafter the “SRC JavaScript SDK Specification”), contains the definition of the SRC JavaScript SDK for the SRC Initiator. The SDK will be provided by each supported SRC System to be incorporated into the SRC Initiator integration software provided for Digital Payment Applications (e.g. SRC Initiator web application).

It is intended to be used in conjunction with the SRC Specifications (see Section 1.4.2 Published EMVCo Documents).

## 1.1 Scope

The SRC JavaScript SDK Specification defines a set of JavaScript methods that can be used by a web client to perform SRC operations. The specification defines the method names, request parameters, response attributes and possible errors. It does not define how an implementation of the SDK interacts with the SRC System. This is SRC System proprietary and out of scope.

## 1.2 Constraints

The SRC JavaScript SDK Specification is designed to work within the constraints described in the SRC Core Specification. In particular, the SRC JavaScript SDK Specification or any implementation of the SRC JavaScript SDK Specification is not intended to replace or interfere with any international, regional, national or local laws and regulations; those governing requirements supersede any industry standards.

## 1.3 Audience

This document is intended for use by SRC Systems and SRC System Participants.

## 1.4 References

The latest version of any reference, including all published amendments, shall apply unless a publication date is explicitly stated.

### 1.4.1 Normative References

The standards in Table 1.1 may be associated with SRC JavaScript SDK Specification.

**Table 1.1: Normative References**

Reference	Publication Name
ISO 3166	Country Codes — ISO 3166
ISO 4217	Currency Codes — ISO 4217
ISO/IEC 7812	Identification cards — Identification of issuers
RFC 7515	JSON Web Signature
RFC 7516	JSON Web Encryption
RFC 7519	JSON Web Token

### 1.4.2 Published EMVCo Documents

The documents in Table 1.2 are related to or are associated with SRC and are located at [www.emvco.com](http://www.emvco.com).

**Table 1.2: EMVCo References**

Reference	Publication Name
SRC Core Specification	EMV® Secure Remote Commerce Specification
SRC Reproduction Requirements	EMV® Secure Remote Commerce (SRC): Click to Pay Icon Reproduction Requirements
SRC UI Guidelines and Requirements	EMV® Secure Remote Commerce Specification – User Interface Guidelines and Requirements
SRC API	EMV® Secure Remote Commerce Specification – API
SRC Version Management	EMV® Secure Remote Commerce Version Management for SRC API and SRC JavaScript SDK Specifications
SRC Use Cases	EMV® Secure Remote Commerce Use Cases

Collectively, the term SRC Specifications refers to:

- SRC Core Specification
- SRC Reproduction Requirements
- SRC UI Guidelines and Requirements
- SRC API
- SRC JavaScript SDK (this document)
- SRC Version Management

## 1.5 Definitions

For the definition of the terms used in the SRC JavaScript SDK Specification, refer to Table 1.3: Definitions in the SRC Core Specification. For definitions of data elements refer to the SRC API.

## 1.6 Notational Conventions

### 1.6.1 Abbreviations

For the definition of the abbreviations used in the SRC JavaScript SDK Specification, refer to section 1.9.1 Abbreviations in the SRC Core Specification.

### 1.6.2 Terminology and Conventions

For the definition of the terminology and conventions used in the SRC JavaScript SDK Specification, refer to section 1.9.2 Terminology and Conventions in the SRC Core Specification.

## 2 Web Client SDK

### 2.1 Data Elements

All primitive and composite data elements are as defined in the SRC API. The request parameters and response attributes (returned if processing is successful) are provided in a single JSON object.

In the request parameters and response attributes tables for each SDK method, the column headed R/C/O in each table refers to whether the parameter/attribute is required, conditional or optional. The following notation is used:

- R = Required – always present
- C = Conditional – present under certain conditions (as specified in the description)
- O = Optional – can be present

### 2.2 Initialize SRC SDK

This method initialises each SRC System's SDK in a common state. It must be called for each JavaScript SDK incorporated into the SRC Initiator integration software and before any other methods.

**Table 2.2.1: Initialize SRC SDK Method**

```
init({  
    required String srcInitiatorId;  
    conditional String srcDpaId;  
    optional String srciTransactionId;  
    optional DpaTransactionOptions dpaTransactionOptions;  
    conditional DpaData dpaData;  
    optional String version;  
    optional AcceptanceChannelRelatedData  
        acceptanceChannelRelatedData;  
})  
  
// Response - empty
```

## 2.2.1 Request Parameters

The request parameters are given in Table 2.2.2.

**Table 2.2.2: Request Parameters**

Name	R/C/O	Description
<b>srcInitiatorId</b> Type: String	R	The reference identifier generated by the SRC System during Onboarding of the SRC Initiator to the SRC System
<b>srcDpaId</b> Type: String	C	<p>The reference identifier that may have been generated either by the SRC Initiator or by the SRC System. During DPA Registration with the SRC System (if it occurs) one, or both of these, value(s) will identify the DPA for subsequent initialisations</p> <p><b>Conditionality:</b> Required when <code>dpaData</code> is not supplied. When both the <code>srcDpaId</code> and <code>dpaData</code> are supplied, then an SRC System can (as an implementation choice) choose how each should be used</p>
<b>srciTransactionId</b> Type: String	O	Transaction-unique identifier assigned by the SRC Initiator
<b>dpaTransactionOptions</b> Type: DpaTransactionOptions	O	These options can be used to override transaction options for the DPA that were configured during the DPA Registration
<b>dpaData</b> Type: DpaData	C	<p>Present when a DPA has not been registered with the SRC System or can be present in order to dynamically update previously registered DPA Data in the SRC System (e.g. presentation name)</p> <p><b>Conditionality:</b> Required when <code>srcDpaId</code> is not supplied. When both <code>srcDpaId</code> and <code>dpaData</code> are supplied, then an SRC System can (as an implementation choice) choose how each should be used</p>

Name	R/C/O	Description
<b>version</b> Type: String	O	SDK versioning
<b>acceptanceChannelRelatedData</b> Type: AcceptanceChannelRelatedData	O	Passes specific acceptance channel data. Refer to the SRC API Specification for details

### 2.2.2 Response Attributes

This method does not have any response attributes.

### 2.2.3 Application Errors

The application errors are given in Table 2.2.3.

**Table 2.2.3: Application Errors**

Reason Code	Description
DPA_ID_OR_DATA_MISSING	The <code>srcDpaId</code> and <code>dpaData</code> parameters are missing: at least one must be supplied
SRCI_ID_MISSING	The <code>srcInitiatorId</code> parameter is missing

## 2.3 Is Recognized

This method uses a Device Identity (derived from a First Party Token) to determine whether it is bound to an SRC Profile and, if so, returns a Federated ID Token. or client application. In such a case, the SRC Initiator integration software shall then provide this Federated ID Token in the `getSrcProfile()` method of the SDKs of the other SRC Systems.

Additionally, this method supports the usage of a Federated ID Token (generated by the SRC Initiator) in the request in order to determine whether there are any SRC Profiles that match the Consumer Identity. If so, a new Federated ID Token generated by the SRC System will be returned in the response. However, in this case, the SRC Initiator integration software shall continue to use its own Federated ID Token in the `getSrcProfile()` method of the SDKs of the other SRC Systems.

**Table 2.3.1: Is Recognized Method**

```
isRecognized({  
    optional List<JWT> recognitionTokens;  
    optional List<JWT> idTokens;  
})  
  
// Response  
{  
    required Boolean recognized;  
    optional String recognitionDomainName;  
    conditional List<JWT> idTokens;  
}
```

### 2.3.1 Request Parameters

The request attributes are given in Table 2.3.2.

**Table 2.3.2: Request Attributes**

Name	R/C/O	Description
<b>recognitionTokens</b> Type: List<JWT>	O	List of explicit recognition tokens issued by this SRC System
<b>idTokens</b> Type: List<JWT>	O	List of Federated ID Tokens issued by the SRCi based on successful recognition

### 2.3.2 Response Attributes

The response attributes are given in Table 2.3.3.



**Table 2.3.3: Response Attributes**

Name	R/C/O	Description
<b>recognized</b> Type: Boolean	R	Flag indicating whether the Consumer is recognised (i.e. through a browser cookie, a recognition token issued by the SRC System, or a Federated ID Token issued by the SRCi) by the SRC System
<b>recognitionDomainName</b> Type: String	O	A redirection to a domain that may facilitate recognition of the Consumer Device (e.g. browser or client application) by the SRC System
<b>idTokens</b> Type: List<JWT>	C	List of Federated ID Tokens identifying the primary Consumer Identity bound to the recognised SRC Profiles  <b>Conditionality:</b> Required when the value of <code>recognized</code> is set to <code>true</code> (i.e. one or more SRC Profiles are recognised)

### 2.3.3 Application Errors

There are no additional application errors other than those given in the standard errors (see Table 2.15.1, Section 2.15 Standard Errors).

## 2.4 Get SRC Profile

This method takes a list of Federated ID Tokens and returns SRC Profile data to enable card selection. The SRC Initiator aggregates Federated ID Tokens received from multiple SRC Systems and provides these to individual SRC Systems in order to fetch a complete card list, except when the SRC Initiator performs identity validation and generates its own Federated ID Token, in which case, the SRC Initiator shall use its own Federated ID Token instead.

**Note:** The `authorization` data element will not be present in the `profiles` returned to the SRC Initiator.

**Table 2.4.1: Get SRC Profile Method**

```
getSrcProfile({
```

```
        optional List<JWT> idTokens;
    })

// Response
{
    required List<SrcProfile> profiles;
    optional String srcCorrelationId;
}
```

### 2.4.1 Request Parameters

The request parameters are given in Table 2.4.2.

**Table 2.4.2: Request Parameters**

Name	R/C/O	Description
<b>idTokens</b> Type: List<JWT>	O	List of the Federated ID Tokens received from one or more SRC Systems

### 2.4.2 Response Attributes

The response attributes are given in Table 2.4.3.

**Table 2.4.3: Response Attributes**

Name	R/C/O	Description
<b>profiles</b> Type: List<SrcProfile>	R	List of SRC Profile(s) associated with each recognised Consumer Identity.  If no SRC Profiles are recognised, then an empty list is returned
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System.

### 2.4.3 Application Errors

There are no additional application errors other than those given in the standard errors (see Table 2.15.1, Section 2.15 Standard Errors).

## 2.5 Identity Lookup

This method checks whether a specified Consumer Identity (email address or mobile phone number) is known to the SRC System.

**Table 2.5.1: Identity Lookup Method**

<pre>identityLookup({      required ConsumerIdentity consumerIdentity;  })</pre>
<pre>// Response {      required Boolean consumerPresent;     optional List&lt;IdentityValidationChannel&gt;         supportedValidationChannels;     optional String lastUsedCardTimestamp;  }</pre>

### 2.5.1 Request Parameters

The request parameters are given in Table 2.5.2.

**Table 2.5.2: Request Parameters**

Name	R/C/O	Description
<b>consumerIdentity</b> Type: ConsumerIdentity	R	An email or phone number that will be used to determine whether an SRC Profile with this primary Consumer Identity is present

### 2.5.2 Response Attributes

The response attributes are given in Table 2.5.3.

**Table 2.5.3: Response Attributes**

Name	R/C/O	Description
<b>consumerPresent</b> Type: Boolean	R	Flag indicating whether an SRC Profile with the provided Consumer Identity is present
<b>lastUsedCardTimestamp</b> Type: String (Numeric)	O	Timestamp of the last used card in the SRC Profile associated with the provided Consumer Identity (UTC time in Unix epoch format)
<b>supportedValidationChannels</b> Type: List<IdentityValidationChannel>	O	List of channels that can be used to perform identity validation. If returned by the SRC System, these choices could be presented to the Consumer

### 2.5.3 Application Errors

The application errors are given in Table 2.5.4.

**Table 2.5.4: Application Errors**

Reason Code	Description
CONSUMER_ID_MISSING	The <code>consumerIdentity</code> parameter is missing
ID_FORMAT_UNSUPPORTED	Unsupported Consumer Identity type

## 2.6 Initiate Identity Validation

This method initiates a process to validate that the Consumer is in possession of, or has access to, the Consumer Identity claimed.

**Table 2.6.1: Initiate Identity Validation Method**

```
initiateIdentityValidation({  
    optional String requestedValidationChannelId;  
    optional Window windowRef;  
})
```

```
// Response
{
    conditional String maskedValidationChannel;
    optional String validationMessage;
    optional List<IdentityValidationChannel>
        supportedValidationChannels;
    optional UriData uriData;
}
```

### 2.6.1 Request Parameters

The request parameters are given in Table 2.6.2.

**Table 2.6.2: Request Parameters**

Name	R/C/O	Description
<b>requestedValidationChannelId</b> Type: String	O	Identifier of the channel over which the identity validation should be initiated
<b>windowRef</b> Type: Window	O	A handle to a browser window which is used to open the SRC System facilitated authentication in embedded iframe

### 2.6.2 Response Attributes

The response attributes are given in Table 2.6.3.

**Table 2.6.3: Response Attributes**

Name	R/C/O	Description
<b>maskedValidationChannel</b> Type: String	C	Masked value of the channel (e.g. email/phone) that the SRC System used to deliver the validation data (e.g. OTP)  Conditionality: Required when <code>windowRef</code> is not provided in the input

Name	R/C/O	Description
<b>validationMessage</b> Type: String	O	Message returned by the SRC System to provide a locale-specific advisory to the Consumer about the identity validation process
<b>supportedValidationChannels</b> Type: List<IdentityValidationChannel>	O	List of additional channels that are supported and can be used to perform identity validation.  If returned by the SRC System, these choices may be presented to the Consumer
uriData Type: UriData	O	URI of the authentication mobile application used to facilitate out of band identity validation

### 2.6.3 Application Errors

The application errors are given in Table 2.6.4.

**Table 2.6.4: Application Errors**

Reason Code	Description
OTP_SEND_FAILED	The OTP could not be sent to the recipient
RETRIES_EXCEEDED	The limit for the number of retries exceeded

## 2.7 Complete Identity Validation

This method determines whether data, provided by the Consumer as part of a second step of an identity validation process, is valid. It can also be used to check whether an out-of-band service was successful.

**Table 2.7.1: Complete Identity Validation Method**

```
completeIdentityValidation({  
    conditional String validationData;  
    optional ComplianceSettings complianceSettings;  
})
```

```
        optional AppInstance appInstance;  
    })
```

```
// Response  
{  
    required JWT idToken;  
    optional MaskedCard maskedCard;  
    optional JWT recognitionToken;  
}
```

### 2.7.1 Request Parameters

The request parameters are given in Table 2.7.2.

**Table 2.7.2: Request Parameters**

Name	R/C/O	Description
<b>validationData</b> Type: String	C	The validation data (e.g. the OTP value) entered by the user  <b>Conditionality:</b> Required when the content of the requested <code>identityValidationChannelType</code> is set to a value other than <code>OUT_OF_BAND</code>
<b>complianceSettings</b> Type: ComplianceSettings	O	The compliance settings specifying the consents provided by the Consumer for binding in the Remember Me scenario
<b>appInstance</b> Type: AppInstance;	O	Information for binding in the Remember Me use case

### 2.7.2 Response Attributes

The response attributes are given in Table 2.7.3.

**Table 2.7.3: Response Attributes**

Name	R/C/O	Description
<b>idToken</b> Type: JWT	R	The Federated ID Token returned following successful validation of the <code>validationData</code>
<b>maskedCard</b> Type: MaskedCard	O	The masked card representing the last used card
<b>recognitionToken</b> Type: JWT	O	The explicit recognition token issued by the SRC System

### 2.7.3 Application Errors

The application errors are given in Table 2.7.4.

**Table 2.7.4: Application Errors**

Reason Code	Description
CODE_EXPIRED	The <code>validationData</code> is expired
CODE_INVALID	The supplied <code>validationData</code> is invalid
RETRIES_EXCEEDED	The limit for the number of retries exceeded
VALDATA_MISSING	The <code>validationData</code> parameter is missing
VALIDATION_IN_PROGRESS	The requested <code>identityValidationChannelType</code> is set to OUT_OF_BAND and no result is available

## 2.8 Enrol Card

This method enrolls a new PAN to the SRC System during checkout. The PAN may be enrolled to an existing / identified SRC Profile, or to a newly-created SRC Profile, or (in the case of guest checkout) may not be added to an SRC Profile at all.

**Table 2.8.1: Enrol Method**

```
enrollCard({
```



```
    optional String srciTransactionId;
    required JWE encryptedCard;
    optional JSONObject threeDsInputData;
    conditional JWT idToken;
    optional JWE<Consumer> encryptedConsumer;
    optional JWE<CardholderData> encryptedCardholderData;
    optional JSONObject srcTokenRequestData;
    optional AssuranceData assuranceData;
    optional ComplianceSettings complianceSettings;
  })

// Response
{
    required MaskedCard maskedCard;
    optional String srcCorrelationId;
    optional JWT recognitionToken;
}
```

## 2.8.1 Request Parameters

The request parameters are given in Table 2.8.2.

**Table 2.8.2: Request Parameters**

Name	R/C/O	Description
<b>srciTransactionId</b> Type: String	O	Transaction-unique identifier assigned by the SRC Initiator
<b>encryptedCard</b> Type: JWE<Card>	R	The card being enrolled with the SRC System. Encrypted using a public key of the SRC System to which the card is being enrolled
<b>threeDsInputData</b> Type: JSONObject	O	Merchant provided 3DS data

Name	R/C/O	Description
<b>idToken</b> Type: JWT	C	Federated ID Token used to check whether an SRC Profile exists and, if not, used by the DCF to provide the Consumer with hints to use a Consumer Identity that is consistent across SRC Systems  <b>Conditionality:</b> Required when it is determined that the Consumer has previously enrolled with, and been recognised by, another SRC System
<b>encryptedConsumer</b> Type: JWE<Consumer>	O	Consumer information related to the card being enrolled. Encrypted using the public key of the SRC System to which the card is being enrolled
<b>encryptedCardholderData</b> Type: JWE<CardholderData>	O	Cardholder information related to the card being enrolled. Encrypted using the public key of the SRC System to which the card is being enrolled
<b>srcTokenRequestData</b> Type: JSONObject	O	SRC System-specific data (provided by the merchant) to support a Token Request
<b>complianceSettings</b> Type: ComplianceSettings	O	Indication that compliance consent has been collected from the Consumer when the enrolled card is added to an SRC Profile
<b>assuranceData</b> Type: AssuranceData	O	Assurance data related to the enrolment

## 2.8.2 Response Attributes

The response attributes are given in Table 2.8.3.

**Table 2.8.3: Response Attributes**

Name	R/C/O	Description
<b>maskedCard</b> Type: MaskedCard	R	Masked data related to the enrolled Digital Card

Name	R/C/O	Description
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System
<b>recognitionToken</b> Type: JWT	O	The explicit recognition token issued by the SRC System

### 2.8.3 Application Errors

The application errors are given in Table 2.8.4.

**Table 2.8.4: Application Errors**

Reason Code	Description
AUTH_INVALID	Invalid <code>idToken</code>
CARD_ADD_FAILED	Unable to add the provided card
CARD_EXP_INVALID	Invalid card expiry date
CARD_INVALID	Invalid <code>primaryAccountNumber</code>
CARD_MISSING	The <code>encryptedCard</code> parameter is missing
CARD_SECURITY_CODE_MIS SING	Card security code must be supplied in the <code>encryptedCard</code> parameter

## 2.9 Checkout

This method performs checkout using the specified Digital Card or PAN. If successful, the response contains summary checkout information and, conditionally, an encrypted payload signed by the SRC System containing PCI and/or PII data.

**Table 2.9.1: Checkout Method**

```
checkout ({  
    optional String srciTransactionId;  
    conditional String srcCorrelationId;
```

```
conditional String srcDigitalCardId;
conditional JWE<Card> encryptedCard;
optional JWE<Consumer> encryptedConsumer;
conditional JWT idToken;
conditional DpaTransactionOptions dpaTransactionOptions;
optional PayloadTypeIndicator payloadTypeIndicatorCheckout;
optional String recipientIdCheckout;
optional PayloadTypeIndicator payloadTypeIndicatorPayload;
optional String recipientIdPayload;
optional AssuranceData assuranceData;
optional SrciActionCode srciActionCode;
optionalconditional Window windowRef; Changed from Optional
to Conditional
optional AcceptanceChannelRelatedData
    acceptanceChannelRelatedData;
optional Boolean profileOptOut;
optional AuthenticationMethod authenticationMethod;
conditional ComplianceSettings complianceSettings;
optional JWE<Address> encryptedBillingAddress;
optional AppInstance appInstance;
})
```

```
// Response
{
    required DcfActionCode dcfActionCode;
    conditional JWT idToken;
    conditional JWT recognitionToken;
    conditional JWS<CheckoutPayloadResponse> checkoutResponse;
optional Boolean unbindAppInstance; DEPRECATED
    Replaced by
    optional BindingStatus bindingStatus;
}
```

## 2.9.1 Request Parameters

The request parameters are given in Table 2.9.2.

**Table 2.9.2: Request Parameters**

Name	R/C/O	Description
<b>srciTransactionId</b> Type: String	O	A transaction-unique identifier assigned by the SRC Initiator
<b>srcCorrelationId</b> Type: String	C	Reference identifier returned by the SRC System  <b>Conditionality:</b> Required when the SRC System returned it in prior calls within the same transaction
<b>srcDigitalCardId</b> Type: String	C	A reference identifier of the card to be used for checkout  <b>Conditionality:</b> Required for checkout when a Digital Card is selected from a Candidate List
<b>encryptedCard</b> Type: JWE<Card>	C	The card being enrolled with the SRC System. Encrypted using a public key of SRC System to which the card is being enrolled

Name	R/C/O	Description
		<b>Conditionality:</b> Required for a combined flow where this card is being enrolled during checkout
<b>encryptedConsumer</b> Type: JWE<Consumer>	O	Consumer information related to the card being enrolled. Encrypted using the public key of the SRC System to which the card is being enrolled
<b>idToken</b> Type: JWT	C	Federated ID Token used to check whether an SRC Profile exists and, if not, used by the DCF to provide the Consumer with hints to use a Consumer Identity that is consistent across SRC Systems  <b>Conditionality:</b> Required when it is determined that the Consumer has previously enrolled with, and been recognised by, another SRC System
<b>dpaTransactionOptions</b> Type: DpaTransactionOptions	C	These options can be used to override transaction options for the DPA that were configured during the DPA Registration  <b>Conditionality:</b> Required when not provided earlier in the init() method call and the DPA has not been Registered with the SRC System
<b>payloadTypeIndicatorCheckout</b> Type: PayloadTypeIndicator	O	Indicates the scope of the encrypted payload, if any, to be provided in the <code>checkoutResponse</code> attribute in the response to this method
<b>recipientIdCheckout</b> Type: String	O	Identifier of the ultimate recipient of the encrypted payload returned in the <code>checkoutResponse</code> attribute in the response to this method. Used by the SRC System to determine which key is used for encryption of the payload

Name	R/C/O	Description
<b>payloadTypeIndicatorPayload</b> Type: PayloadTypeIndicator	O	Indicates the type of payload to be provided when the payload is returned in a subsequent interaction (e.g. when the Get Payload operation is called)
<b>recipientIdPayload</b> Type: String	O	Identifier of the recipient that will subsequently request the encrypted payload. Used by the SRC System to identify which key to use for encryption of the payload
<b>assuranceData</b> Type: AssuranceData	O	Assurance data supplied to support risk management
<b>srciActionCode</b> Type: SrciActionCode	C	A code indicating a non-typical behaviour on the SRC Initiator that should be addressed by the DCF  <b>Conditionality:</b> Required when non-typical behaviour has occurred
<b>windowRef</b> Type: Window	OC	A reference to a browsing context, e.g. iframe or new pop-up window  <b>Changed from Optional to Conditional</b>  <b>Conditionality:</b> Required when the DCF needs to open a custom URI or the SRC System facilitates authentication
<b>acceptanceChannelRelatedData</b> Type: AcceptanceChannelRelatedData	O	This field is used to pass along specific acceptance channel related data  Refer to the SRC API Specification for details
<b>profileOptOut</b> Type: Boolean	O	If set to TRUE, the SRC Profile should not be created. Default value is FALSE
<b>authenticationMethod</b> Type: AuthenticationMethod	O	The preferred authentication method as selected by the SRC Initiator
<b>complianceSettings</b> Type: ComplianceSettings	C	The compliance settings specifying the consents provided by the Consumer

Name	R/C/O	Description
		<b>Conditionality:</b> Required when <code>encryptedConsumer</code> is supplied and <code>profileOptOut</code> is FALSE
<b>encryptedBillingAddress</b> Type: JWE<Address>	O	
<b>appInstance</b> Type: AppInstance;	O	Information for binding in the Remember Me use case

## 2.9.2 Response Attributes

The response attributes are given in Table 2.9.3.

**Table 2.9.3: Response Attributes**

Name	R/C/O	Description
<b>dcfActionCode</b> Type: DcfActionCode	R	A code indicating the behaviour to be handled by the SRC Initiator
<b>idToken</b> Type: JWT	C	<p>A Federated ID Token related to the current SRC Profile</p> <p><b>Conditionality:</b> Required when:</p> <ul style="list-style-type: none"><li><del>Requested by the DCF during its processing of the checkout session (e.g. DCF requesting identity validation be performed by the SRC System); or</del></li><li><del>The <code>unbindAppInstance</code> attribute returned in this response is set to <code>true</code>; or</del></li><li><del>A new / updated <code>idToken</code> is generated</del></li></ul> <p><b>Conditionality changed to:</b></p> <p><b>Conditionality:</b> Required when:</p>



Name	R/C/O	Description
		<ul style="list-style-type: none"> <li>Requested by the DCF during its processing of the checkout session (e.g. DCF requesting identity validation be performed by the SRC System); or</li> <li><code>bindingStatus</code> is set to BIND or UNBIND; or</li> <li>A new / updated <code>idToken</code> is generated</li> </ul>
<b>recognitionToken</b> Type: JWT	C	Long-lived First Party Token representing a device or app bound to the SRC Profile  <b>Conditionality:</b> Required when the Consumer consented to be remembered ( <code>complianceResource</code> object of <code>ComplianceType REMEMBERME</code> present in <code>complianceSettings</code> )
<b>checkoutResponse</b> Type: JWS <CheckoutPayloadResponse>	C	Signed structure  <b>Conditionality:</b> Required when the <code>dcfActionCode</code> is set to COMPLETE or PENDING_AUTHENTICATION  <code>encryptedPayload</code> or <code>encryptedSignedPayload</code> will be not present within the <code>checkoutResponse</code> (see SRC API) when: <ul style="list-style-type: none"> <li><code>payloadTypeIndicatorCheckout</code> is set to SUMMARY or</li> <li><code>dcfActionCode</code> is set to PENDING_AUTHENTICATION</li> </ul>
<b>unbindAppInstance</b> Type: Boolean DEPRECATED	⊖	<del>Flag indicating whether the Consumer has chosen to be 'un-remembered' from the Consumer Device. The default value is assumed to be false if this field is not provided.</del>  <del>If this attribute is set to true, then the SRC Initiator shall proceed to call the <code>unbindAppInstance()</code> method for all available SDKs with the <code>idToken</code> attribute returned in this response</del>

Name	R/C/O	Description
<b><i>Replaced by</i></b> <b>bindingStatus</b> Type: BindingStatus	O	Status of the binding/unbinding request.  The value BIND indicates that the Consumer has chosen to be “remembered” on the Consumer Device

### 2.9.3 Application Errors

The application errors are given in Table 2.9.4.

**Table 2.9.4: Application Errors**

Reason Code	Description
AUTH_INVALID	Invalid <code>idToken</code>
BILLING_ADDRESS_REQUIRED	The billing address must be provided
CARD_ADD_FAILED	Unable to add the card when combined flow (enrol and checkout) is occurring
CARD_EXP_INVALID	Invalid card expiry date
CARD_INVALID	Invalid <code>primaryAccountNumber</code> when combined flow (enrol and checkout) is occurring
CARD_MISSING	The <code>srcDigitalCardId</code> or <code>encryptedCard</code> parameter is required but is missing
CARD_NOT_RECOGNIZED	The provided <code>srcDigitalCardId</code> is not recognised
CARD_SECURITY_CODE_MISSING	Card Security Code (CSC) must be supplied in the <code>encryptedCard</code> parameter when a combined flow (enrol and checkout) is occurring
MERCHANT_CATEGORY_CODE_MISSING	The merchant category code must be provided for 3DS_ON_BEHALF
MERCHANT_COUNTRY_CODE_MISSING	The merchant country code must be provided for 3DS_ON_BEHALF
MERCHANT_DATA_INVALID	Merchant data is invalid

Reason Code	Description
TERMS_AND_CONDITIONS_NOT_ACCEPTED	Terms and Conditions not accepted
UNABLE_TO_CONNECT	Unable to connect to / Launch DCF

## 2.10 Delete Card

This method deletes a Digital Card from an SRC Profile.

**Table 2.10.1: Delete Card Method**

<pre>deleteCard({     required String srcDigitalCardId;     optional JWT idToken; })</pre>
<pre>// Response {     optional String srcCorrelationId; }</pre>

### 2.10.1 Request Parameters

The request parameters are given in Table 2.10.2.

**Table 2.10.2: Request Parameters**

Name	R/C/O	Description
<b>srcDigitalCardId</b> Type: String	R	A reference identifier of the card to be deleted
<b>idToken</b> Type: JWT	O	May be provided for additional security when the Consumer has previously enrolled with, and been recognised by, another SRC System

## 2.10.2 Response Attributes

The response parameters are given in Table 2.10.3.

**Table 2.10.3: Response Attributes**

Name	R/C/O	Description
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System

## 2.10.3 Application Errors

The application errors are given in Table 2.10.4.

**Table 2.10.4: Application Errors**

Reason Code	Description
AUTH_INVALID	The client does not have authorisation to perform the operation
CARDID_MISSING	The <code>srcDigitalCardId</code> parameter is missing
CARD_NOT_RECOGNIZED	The provided <code>srcDigitalCardId</code> is not recognised

## 2.11 Unbind ApplInstance

This method unbinds a Device Identity (an application instance) from an SRC Profile.

**Table 2.11.1: Unbind ApplInstance Method**

```
unbindAppInstance({  
    required List<JWT> idTokens;  
    optional List<JWT> recognitionToken;  
})
```

```
// Response
{
    optional String srcCorrelationId;
}
```

### 2.11.1 Request Parameters

The request parameters are given in Table 2.11.2.

**Table 2.11.2: Request Parameters**

Name	R/C/O	Description
<b>idTokens</b> Type: List<JWT>	R	Each Federated ID Token indicates an SRC Profile(s) from which the Device Identity should be unbound
<b>recognitionToken</b> Type: List<JWT>	O	The explicit recognition token issued by the SRC System

### 2.11.2 Response Attributes

The response parameters are given in Table 2.11.3.

**Table 2.11.3: Response Attributes**

Name	R/C/O	Description
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System

### 2.11.3 Application Errors

The application errors are given in Table 2.11.4.

**Table 2.11.4: Application Errors**

Reason Code	Description
AUTH_INVALID	Invalid idToken

Reason Code	Description
AUTH_MISSING	Missing <code>idTokens</code> list, or empty <code>idTokens</code> list provided

## 2.12 Add Billing Address

This method adds a billing address for the given Digital Card or updates an existing billing address.

**Table 2.12.1: Add Billing Address Method**

<pre>addBillingAddress({     required String srcDigitalCardId;     required Address billingAddress;     optional JWT idToken; })</pre>
<pre>// Response {     required MaskedCard maskedCard; }</pre>

### 2.12.1 Request Parameters

The request parameters are given in Table 2.12.2.

**Table 2.12.2: Request Parameters**

Name	R/C/O	Description
<b>srcDigitalCardId</b> Type: String	R	An identifier of the card that the billing address should be set for.
<b>billingAddress</b> Type: Address	R	A component containing the billing address details to be added to the card.

Name	R/C/O	Description
<b>idToken</b> Type: JWT	O	May be provided when it is determined that the Consumer has previously enrolled with, and been recognised by, another SRC System

### 2.12.2 Response Attributes

The response parameters are given in Table 2.12.3.

**Table 2.12.3: Response Attributes**

Name	R/C/O	Description
<b>maskedCard</b> Type: MaskedCard	R	Masked card containing the new billing address.

### 2.12.3 Application Errors

The application errors are given in Table 2.12.4.

**Table 2.12.4: Application Errors**

Reason Code	Description
AUTH_INVALID	Invalid <code>idToken</code>
AUTH_MISSING	Missing <code>idTokens</code> list, or empty <code>idTokens</code> list provided
BILLING_ADDRESS_MISSING	The <code>billingAddress</code> is missing
CARD_NOT_RECOGNIZED	The provided <code>srcDigitalCardId</code> is not recognised
CARDID_MISSING	The <code>srcDigitalCardId</code> parameter is missing

## 2.13 Authentication Methods Lookup

This method obtains a proposed list of authentication methods relevant to the criteria specified by the client.

**Table 2.13.1: Authentication Methods Lookup Method**

```
authenticationMethodsLookup({  
  
    required AccountReference accountReference;  
    required AuthenticationContext authenticationContext;  
    DEPRECATED  
    required List<AuthenticationReason> authenticationReasons;  
    conditional String srcDpaId;  
    conditional DpaData dpaData;  
    conditional DpaTransactionOptions dpaTransactionOptions;  
    optional String srcCorrelationId;  
    optional String srciTransactionId;  
  
})  
  
// Response  
{  
  
    required List<AuthenticationMethod> authenticationMethods;  
    optional AssuranceData assuranceData;  
    optional String srcCorrelationId;  
    optional String srciTransactionId;  
    optional String authenticationSessionId;  
  
}
```

### 2.13.1 Request Parameters

The request parameters are given in Table 2.13.2.

**Table 2.13.2: Request Parameters**

Name	R/C/O	Description
<b>accountReference</b> Type: AccountReference	R	Must be one of either: <ul style="list-style-type: none"><li>srcDigitalCardId; <i>or</i></li><li>consumerIdentity (e.g. an email address or a mobile phone number)</li></ul>



Name	R/C/O	Description
<b>authenticationContext</b> Type: AuthenticationContext DEPRECATED	R	Data provided as per context of the authentication (e.g. transactionAmount, dpaData, srcDpaId)
<b>authenticationReasons</b> Type: List<AuthenticationReason>	R	List of authenticationReasons
<b>srcDpaId</b> Type: String	C	<b>Conditionality:</b> When authenticationReasons contains TRANSACTION_AUTHENTICATION exactly one of srcDpaId or dpaData must be provided
<b>dpaData</b> Type: DpaData	C	
<b>dpaTransactionOptions</b> Type: DpaTransactionOptions	C	Conditionality: Required when authenticationReasons contains TRANSACTION_AUTHENTICATION. In this case, dpaTransactionOptions must contain the same data that is supplied in Checkout
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System
<b>srciTransactionId</b> Type: String	O	Transaction-unique identifier assigned by the SRC Initiator

### 2.13.2 Response Attributes

The response parameters are given in Table 2.13.3.

**Table 2.13.3: Response Attributes**

Name	R/C/O	Description
<b>authenticationMethods</b> Type: List<AuthenticationMethod>	R	List of supported authentication methods

Name	R/C/O	Description
<b>assuranceData</b> Type: AssuranceData	O	Assurance data supplied to support risk management
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System
<b>srciTransactionId</b> Type: String	O	Transaction-unique identifier assigned by the SRC Initiator
<b>authenticationSessionId</b> Type: String	O	Reference identifier for the authentication session returned by the SRC System

### 2.13.3 Application Errors

The application errors are given in Table 2.13.4.

**Table 2.13.4: Application Errors**

Reason Code	Description
ACCT_REF_FORMAT_UNSUPPORTED	Unsupported <code>accountReference</code>
ACCT_REF_MISSING	The <code>accountReference</code> parameter is missing

## 2.14 Authenticate

This method can be used to:

- Initiate an authentication based on specified input criteria
- Complete an in-band validation, passing validation data for assessment, e.g. OTP value
- Check progress / status on an on-going out-of-band validation, where validation occurs on another channel

**Table 2.14.1: Authenticate Method**

```
authenticate({  
  
    conditional AccountReference accountReference;  
})
```

```
conditional AuthenticationContext authenticationContext;  
    DEPRECATED  
    conditional AuthenticationReasons authenticationReasons;  
    conditional String srcDpaId;  
    conditional DpaData dpaData;  
    conditional DpaTransactionOptions dpaTransactionOptions;  
    optional String authenticationSessionId;  
    required AuthenticationMethod authenticationMethod;  
    optional Window windowRef;  
    optional String srcCorrelationId;  
    optional String srciTransactionId;  
  })
```

```
// Response  
{  
    conditional AuthenticationResult authenticationResult;  
    required AuthenticationStatus authenticationStatus;  
    conditional AssuranceData assuranceData;  
    conditional JSONObject methodAttributes;  
    optional String srcCorrelationId;  
    optional String srciTransactionId;  
    optional String authenticationSessionId;  
}
```

### 2.14.1 Request Parameters

The request parameters are given in Table 2.14.2.

**Table 2.14.2: Request Parameters**

Name	R/C/O	Description
<b>accountReference</b> Type: AccountReference	C	Must be one of either:

Name	R/C/O	Description
		<ul style="list-style-type: none"> <li>srcDigitalCardId; <i>or</i></li> <li>consumerIdentity (e.g. an email address or a mobile phone number)</li> </ul> <b>Conditionality:</b> Required when not available from a previous API call
<b>authenticationContext</b> Type: AuthenticationContext DEPRECATED	Ⓞ	<del>Reasons for authentication such as for an enrolment or a transaction</del> <b>Conditionality:</b> <del>Required when not available from a previous API call</del>
<b>authenticationReasons</b> Type: List <AuthenticationReason>	C	Must be provided if authenticationSessionId is not available
<b>srcDpaId</b> Type: String	C	Conditionality: Must be provided if authenticationSessionId is not available and when authenticationReasons contains TRANSACTION_AUTHENTICATION exactly one of srcDpaId or dpaData must be provided
<b>dpaData</b> Type: DpaData	C	
<b>dpaTransactionOptions</b> Type: DpaTransactionOptions	C	Conditionality: Must be provided if authenticationSessionId is not available and when authenticationReasons contains TRANSACTION_AUTHENTICATION. In this case, dpaTransactionOptions must contain the same data that is supplied in Checkout
<b>authenticationSessionId</b> Type: String	O	Reference identifier for the authentication session returned by the SRC System from previous session
<b>authenticationMethod</b> Type: AuthenticationMethod	R	Contains authenticationMethodType selected and relevant methodAttributes (refer to the SRC API Specification for details)

Name	R/C/O	Description
<b>windowRef</b> Type: Window	O	A reference to a browsing context, e.g. iframe or new pop-up window used to facilitate the DCF opening a custom URI or SRC System facilitating the Cardholder authentication
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System
<b>srciTransactionId</b> Type: String	O	Transaction-unique identifier assigned by the SRC Initiator

## 2.14.2 Response Attributes

The response parameters are given in Table 2.14.3.

**Table 2.14.3: Response Attributes**

Name	R/C/O	Description
<b>authenticationResult</b> Type: AuthenticationResult	C	<b>Conditionality:</b> Required when <code>authenticationStatus</code> is COMPLETE
<b>authenticationStatus</b> Type: AuthenticationStatus	R	Current status of the initiated authentication event
<b>assuranceData</b> Type: AssuranceData	C	<b>Conditionality:</b> Required when <code>authenticationStatus</code> is COMPLETE
<b>methodAttributes</b> Type: JSONObject	C	Any relevant attributes supplied by the SRC System  <b>Conditionality:</b> Required as specified in the SRC API
<b>srcCorrelationId</b> Type: String	O	Reference identifier returned by the SRC System
<b>srciTransactionId</b> Type: String	O	Transaction-unique identifier assigned by the SRC Initiator
<b>authenticationSessionId</b> Type: String	O	Reference identifier for the authentication session returned by the SRC System

### 2.14.3 Application Errors

The application errors are given in Table 2.14.4.

**Table 2.14.4: Application Errors**

Reason Code	Description
3DS_INPUT_DATA_MISSING	The <code>threeDsInputData</code> is missing or insufficient
ACCT_REF_FORMAT_UNSUPPORTED	Unsupported <code>accountReference</code>
ACCT_REF_MISSING	The <code>accountReference</code> parameter is missing
AUTHENTICATION_METHOD_NOT_SUPPORTED	The supplied authentication method doesn't match the authentication context
CVC_DATA_MISSING	The CSC data is missing
OTP_SEND_FAILED	The OTP could not be sent to the recipient
RETRIES_EXCEEDED	The limit for the number of retries exceeded
VAL_DATA_MISSING	The <code>validationData</code> parameter is missing
VAL_DATA_EXPIRED	The <code>validationData</code> is expired
VAL_DATA_INVALID	The supplied <code>validationData</code> is invalid

## 2.15 Standard Errors

SDK method errors can be application errors or standard errors.

- Standard errors can be returned by any SDK method and should be handled in a common way. They are described in Table 2.15.1
- Application errors that are only returned for specific SDK methods are described in the application errors section for the specific SDK method

**Table 2.15.1: Standard Errors**

Reason Code	Description
ACCT_INACCESSIBLE	The SRC Profile exists but is not currently accessible (e.g. is locked)
AUTH_ERROR	The server cannot perform the authentication necessary to process the request
BLOCKED	The method is blocked due to security reasons. Invocation of additional SDK methods may be blocked for the session and card
INVALID_PARAMETER	<p>The value provided for one or more request parameters is considered invalid. This error is also generated in case of a missing, required, request parameter.</p> <p>Notes:</p> <ul style="list-style-type: none"><li>• Whenever possible client-side validation of request parameters should be performed to avoid a round trip to the server. Simple validation constraints are documented as part of the SRC API</li><li>• If the content of the request parameter is dependent on Consumer input, prompt the user to enter a value or enter an appropriately formatted value</li></ul>
INVALID_REQUEST	<p>The server is not able to adequately parse the request. Usually occurs when some request parameter is expected to be in a particular format but is not.</p> <p>Examples:</p> <ul style="list-style-type: none"><li>• base64 decoding failed</li><li>• The field is not in a particular format.</li></ul> <p>The message field may provide additional clarification of what part/parameter of the request is considered incorrect</p>
NOT_FOUND	The requested resource/business entity does not exist. The resource might also be hidden for security reasons
REQUEST_TIMEOUT	Request timeout

Reason Code	Description
SERVICE_ERROR	Unexpected behaviour on the server caused the error. Either show a generic message or retry the same request again (it might succeed)
UNKNOWN_ERROR	Unknown error



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