SDP Solution API Reference (MobileMoney, Security)

Change History

Changes between document issues are cumulative. The latest document issue contains all the changes made in earlier issues.

Issue 17 (2016-03-03)

This issue is the seventeenth official release, and includes the following changes:
Add a new API named getaccountholderidentification as per MTNSDP-DB-0300.

Issue 16 (2016-02-29)

This issue is the sixteenth official release, and includes the following changes:
Add new parameter named CurrCode in 1.2.3 Request for RequestPayment as per MTNSDP-CR-0317.
Add new parameter named CurrCode in 1.3.3 Request for ConfirmThirdPartyPayment as per MTNSDP-CR-0317.
Add new parameter named CurrCode in 1.4.3 Request for DepositMobileMoney as per MTNSDP-CR-0317.
Add new parameter named CurrCode in 1.5.4 Response for QueryThirdPartyAccount as per MTNSDP-CR-0317.

Issue 15 (2015-12-28)

This issue is the fifteenth official release, and includes the following changes:
Add new parameter named profilename in 2.6.3 validatePayee response as per MTNSDP-CR-0231A.

Issue 14 (2015-12-18)

This issue is the fourteenth official release, and includes the following changes:
Modify Cookie definition in the MT HTTP Header for HTTP APIs.

Issue 13 (2015-11-20)

This issue is the thirteenth official release, and includes the following changes:
Password encryption algorithm supports SHA256.

Issue 12 (2015-09-29)

This issue is the twelfth official release, and includes the following changes:
Add the validatePayee API to 2.6.3 validatePayee.

Issue 11 (2015-06-18)

This issue is the eleventh official release, and includes the following changes:
Optimize the process for RequestPayment.
Add the following APIs to 2 HTTP APIs:

- cancelpreapproval
- getTransactionhistory
- queryBalance

Issue 10 (2015-04-30)

This issue is the tenth official release, and includes the following changes:
Optimize the process for preapproval, getPreApprovalStatus and preapprovalcompleted.

Issue 09 (2015-01-12)

This issue is the ninth official release, and includes the following changes:

Change History

Change the examples for the following APIs:

- Response example for validateaccountholder
- Request and response examples for getfinancialresourceinformation
- Request and response examples for verifyfinancialresourceinformation
- Response example for preapproval
- Request and response examples for getPreApprovalStatus
- Request and response examples for preapprovalcompleted
- Request and response examples for Paymentcompleted
- Request and response examples for gettransactionstatus
- Request and response examples for reversetransaction
- Request and response examples for getreversetransactiondetails
- Request and response examples for withdraw
- Request and response examples for startbatchtransfer
- Request and response examples for approvebatchtransfer
- Request and response examples for cancelbatchtransfer
- Request and response examples for listbatchtransfer
- Request and response examples for getbatchtransfer

Issue 08 (2014-09-30)

This issue is used for eighth office app.
Add one error code **1000** in the RequestPayment for Phase3.3.
Add the description of destPartnerId.
Add the chapter of MO Message Header for A2A Scenario.
Change the **Level of Requirement** of the **SenderID** to **Optional**.
Delete the **CurrCode** field for requestPaymentRequest, ConfirmThirdPartyPaymentRequest and depositMobileMoneyRequest.

Issue 07 (2014-05-04)

This issue is the seventh official release, and includes the following changes:
Update the type of the **serviceId** field in the RequestPayment, DepositMobileMoney, ConfirmThirdpartyPayment, and QueryThirdPaytyAccount requests.
Change the description of **serviceId** and **bundleID**.

Issue 06 (2014-04-23)

This issue is the sixth official release, and includes the following changes:
Update the description and the example of serviceId field in the RequestPayment, DepositMobileMoney, ConfirmThirdpartyPayment, and QueryThirdPaytyAccount request.

Issue 05 (2014-04-09)

This issue is the fifth official release, and includes the following changes:
Update the description of StatusDesc field.

Issue 04 (2014-03-27)

This issue is the fourth official release, and includes the following changes:

Modify the "fee deduction" to "bill payment".

Modify the description of Narration field in DepositMoney interface.

Add a note in the description of Cookie field.

Issue 03 (2014-03-19)

This issue is the third official release, and includes the following changes for Phase3.1:

Add the MerchantName field in the ConfirmThirdPartyPayment request.

Issue 02 (2014-03-10)

This issue is the second official release, and includes the following changes for Phase2.3:

Update the process flow for Paymentcompleted API.

Issue 01 (2013-12-27)

This issue is the first official release.

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SOAP APIs

1.1 Overviews

1.1.1 API Functions

The SDP provides Mobile Money capability application programming interfaces (APIs) for third-party applications (App for short) to connect to it and use its Mobile Money capability for. Bill Payment, Depositing Money in Subscribers account & Querying Subscriber's account in a third party system. The App is generally developed by various partners of the SDP.

📖 **NOTE**

> Partners are the enterprises and individuals who sign a contract and cooperate with carriers in utilizing the SDP. Partners include service Partners, Developers, and API Partners. In this document, partners are mainly the service Partners, Developers, and API Partners who use APIs for secondary development.

Table 1-1 describes functions of Mobile Money capability APIs provided by the SDP.

Table 1-1 Functions of Mobile Money capability APIs

Function	Description	API
Bill Payment API	Bill payment initiated by Partner: The App initiates the requestPayment API to debit mobile money from subscribers mobile money account. Ex : Utility Payments , Recurrent Payments etc.	1.2.2 RequestPayment
	Bill payment initiated by Subscriber: The subscriber through ECW initiates the ConfirmThirdPartyPayment API to pay their Bill on third party system. Ex : School Payment, Bill Payment etc	1.3.2 ConfirmThirdParty Payment
Deposit	The App initiates the depositMobileMoney API to deposit mobile money in Subscriber s mobile money account. Ex : Cash Deposit	1.4.2 DepositMobileMon ey
QueryingSubscriberaccou nt balance	The SDP initiates the QueryThirdPartyAccount API to query subscriber account balance on third party system. Ex: check Outstandlng Amount etc	1.5.2 QueryThirdPartyA ccount

1.1.2 Level of Requirement for Parameters

The App must develop APIs based on the level of requirement for each parameter.

Table 1-2 Level of requirement for parameters

Type	Description
Mandatory	A parameter is always mandatory in a request.
	Parameters with the **Mandatory** requirement are used for access authentication or service processing. If a parameter with the **Mandatory** requirement is left empty in a request, access authentication or service processing fails and the request fails.
Conditional	A parameter is mandatory or optional in specified conditions.
	Parameters with the **Conditional** requirement are used for access authentication or service processing in specified conditions. If the specified conditions is met but a parameter with the **Conditional** requirement is left empty in a request, access authentication or service processing fails and the request fails.
Optional	A parameter is always optional.
	Parameters with the **Optional** requirement are not used for service processing.

1.1.3 Request Format

The SDP provides the SOAP request in the following format:

```
<soapenv:Envelope>
    <soapenv:Header>
        <parameter>…</parameter>
…
    </soapenv:Header>
    <soapenv:Body>
        <parameter>…</parameter>
…
    </soapenv:Body>
</soapenv:Envelope>
```

Table 1-3 Request format

Element	Description
<soapenv:Envelope>	Root element in a request, which specifies the namespace.
<soapenv:Header>	Request header. Parameters in this element are defined by the SDP and are mainly information to be processed by the SDP services, including access authentication parameters.
<soapenv:Body>	Request body. Parameters in this element comply with the SOAP protocol.

1.1.4 Response Format

Success Response Format

The SDP provides the SOAP API success responses in the following format:

```
<soapenv:Envelope>
    <soapenv:Body>
          <parameter>…</parameter>
…
        </soapenv:Body>
</soapenv:Envelope>
```

Table 1-4 Success response format

Element	Description
<soapenv:Envelope>	Root element in a success response, which specifies the namespace.
<soapenv:Body>	Success response body. Parameters in this element comply with the SOAP protocol.

Error Response Format

The SDP provides the SOAP API error responses in the following format:

```
<soapenv:Envelope>
    <soapenv:Body>
      <soapenv:Fault>
          <parameter>…</parameter>
…

          <detail>
            <parameter>…</parameter>
```

```
...
            </detail>
        </soapenv:Fault>
      </soapenv:Body>
    </soapenv:Envelope>
```

Table 1-5 Error response format

Element	Description
<soapenv:Envelope>	Root element in an error response, which specifies the namespace.
<soapenv:Body>	Error response body, contains the <soapenv:Fault> and <detail> elements. This element specifies the error code and error details.
<soapenv:Fault>	Error code and description. For details about error responses, see 1.7 API Error Responses.
<detail>	Error details, which are the same as the <soapenv:Fault> element information.

1.1.5 Namespaces

When coding API functions, partners must follow the namespaces of Mobile Money capability APIs and data types in the APIs.

- Table 1-6 describes namespaces of Mobile Money capability APIs.
- The namespace of data types in Mobile Money capability APIs is **http://www.w3.org/2001/XMLSchema**.

📖 NOTE

The Mobile Money capability APIs involve the following data types: Parameter[0..20], and Return[0..20]. For details about the structure of the data types, see the parameter description for the matching API requests or responses.

Table 1-6 Namespaces of Mobile Money capability APIs

Namespace	API
http://schemas.xmlsoap.org/soap/encoding/ http://schemas.xmlsoap.org/wsdl/ http://schemas.xmlsoap.org/wsdl/soap/ http://b2b.mobilemoney.mtn.zm_v1.0/	• 1.2.2 RequestPayment • 1.3.2 ConfirmThirdPartyPayment • 1.4.2 DepositMobileMoney • 1.5.2 QueryThirdPartyAccount

1.2 Bill Payment API initiated by Partner

1.2.1 Process

Figure 1-1 shows the synchronous process of bill payment for ECW.

Figure 1-1 Synchronous Process of bill payment for ECW
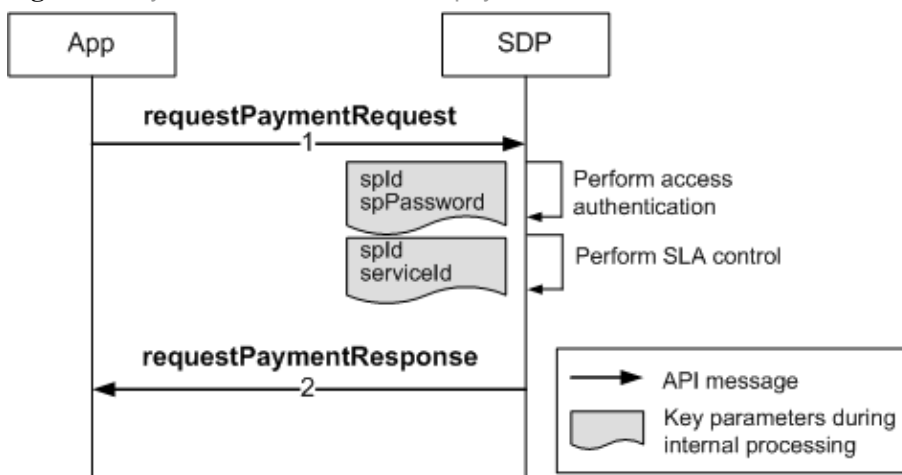
Table 1-7 describes the synchronous process for ECW.

Table 1-7 Description for the synchronous process of bill payment for ECW

Step	Description
1	The App sends bill payment request to debit mobile money from subscribers account to SDP.
2	• The SDP performs authentication and service level agreement (SLA) control based on fields in the request. • The SDP sends response to the App.

Figure 1-2 shows the asynchronous process of bill payment for ECW.

Figure 1-2 Asynchronous Process of bill payment for ECW
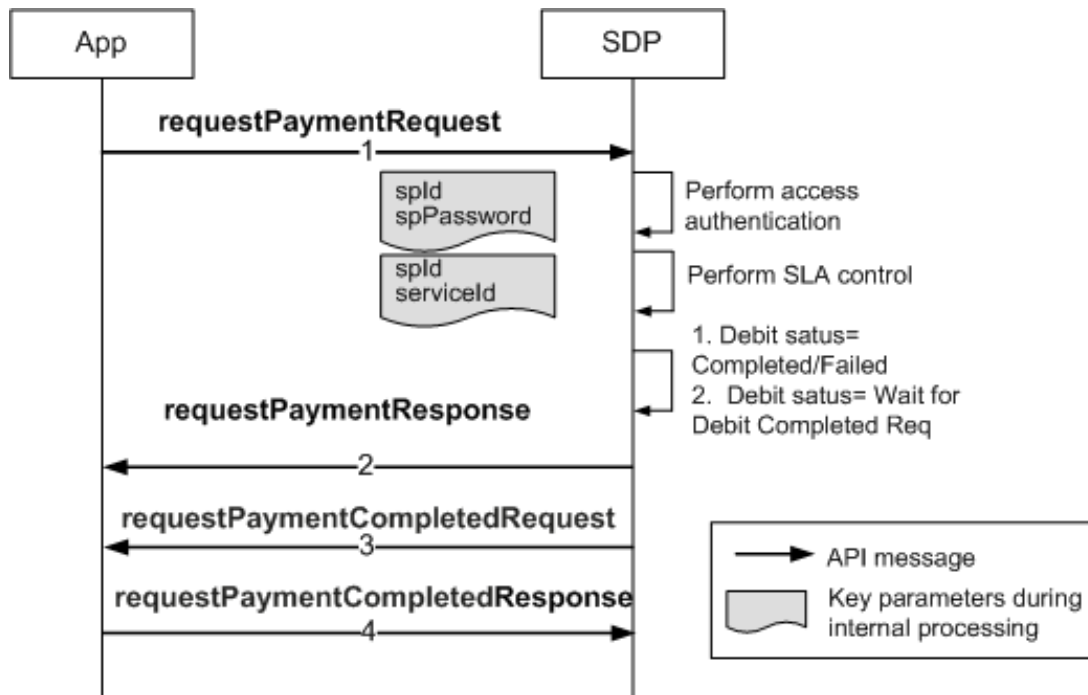
Table 1-8 describes the asynchronous process for ECW.

Table 1-8 Description for the asynchronous process of bill payment for ECW

Step	Description
1	The App sends bill payment request to debit mobile money from subscribers account to SDP.
2	• The SDP performs authentication and service level agreement (SLA) control based on fields in the request. • The SDP sends response to the App.
3	The SDP sends requestPaymentCompleted request to inform the App the result of the requestPayment in case asynchronism requestPayment.
4	The APP processes the requestPaymentCompleted request and sends a response to the SDP.

1.2.2 RequestPayment

Function

The App (functioning as the client) invokes the requestPayment API to debit mobile money from subscribers account.
Partners must code the App based on the API field requirements so that the App can send correct requests to the SDP. The SDP must send a response within 180 seconds by default in synchronous process, or 30 seconds by default in asynchronous process.

Request URI

The request URI is the destination URI of requestPayment messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://*IP*:*Port*/ThirdPartyServiceUMMImpl/UMMServiceService/RequestPayment/v17
In the format, **IP** and **Port** indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

1.2.3 Request for RequestPayment
The App functions as the client and sends a requestPaymentRequest message to the SDP for bill payment.

Example

```
POST /ThirdPartyServiceUMMImpl/UMMServiceService/RequestPayment/v17 HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:b2b="http://b2b.mobilemoney.mtn.zm_v1.0">
  <soapenv:Header>
    <RequestSOAPHeader xmlns="http://www.huawei.com.cn/schema/common/v2_1">
      <spId>35000001</spId>
      <spPassword>de96d901b3bad1db2aab76b7b0b202f2</spPassword>
        <bundleID>256000039</bundleID>
      <serviceId>35000001000035</serviceId>
      <timeStamp>20100727</timeStamp>
</RequestSOAPHeader>
  </soapenv:Header>
  <soapenv:Body>
    <b2b:processRequest>
      <serviceId>200</serviceId>
      <parameter>
```

```xml
          <name>DueAmount</name>
          <value>10</value>
       </parameter>
       <parameter>
          <name>MSISDNNum</name>
          <value> FRI:< MSISDNNum >/MSISDN </value>
       </parameter>
       <parameter>
          <name>ProcessingNumber</name>
          <value>555</value>
       </parameter>
       <parameter>
          <name>serviceId</name>
          <value>101</value>
       </parameter>
       <parameter>
          <name>AcctRef</name>
          <value> FRI:< AcctRef > @water.company/SP </value>
       </parameter>
       <parameter>
          <name>AcctBalance</name>
          <value>555</value>
       </parameter>
       <parameter>
          <name>MinDueAmount</name>
          <value>121212</value>
       </parameter>
       <parameter>
          <name>Narration</name>
          <value>121212</value>
       </parameter>
       <parameter>
          <name>PrefLang</name>
          <value>121212121</value>
       </parameter>
       <parameter>
          <name>OpCoID</name>
          <value>0</value>
       </parameter>
       <parameter>
          <name>CurrCode</name>
          <value>USD</value>
       </parameter>
    </b2b:processRequest>
     </soapenv:Body>
 </soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-9 Describes parameters in a requestPaymentRequest message HTTP header.

Table 1-9 Parameters in a requestPaymentRequest message HTTP header

Header Field	Parameter	Type	Length	Level of Requirement	Description
Cookie	sessionid	String		Conditional	The session id is used as a cookie in the HTTP header in the requests towards the Mobile Money Manager when the Partner use **Login/Logout** mode. [Example] default8fcee064690b45faa9f8f6c7e21c5e5a **NOTE** Cookie is valid only for ECW and not for fundamo.
Signature/		String		Conditional	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message SOAP Header Parameters

Table 1-10 describes parameters in a requestPaymentRequest message SOAP header.

Table 1-10 Parameters in a requestPaymentRequest message SOAP header

Parameter	Type	Length	Level of Requirement	Description
spId	xsd: string	21	Mandatory	Partner ID. The ID is automatically allocated by the SDP to partners after successful registration. To obtain the ID: • A service Partner and API Partner can log in to the SDP management portal and query account information. • A Developer can log in to the Developer Portal and query account information. [Example] 000201

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Parameter	Type	Length	Level of Requirement	Description
spPassword	xsd: string	100	Conditional	Authentication key for the SDP to authenticate partners.
				The SDP supports authentication by **SP ID + Password**, **SP ID + IP address + Password**, or **SP ID + IP address**. Partners select an authentication mode during registration. If a partner selects authentication by **SP ID + Password** or **SP ID + IP address + Password**, this parameter is mandatory in requests sent by this partner.
				The value is a character string encrypted. The encryption formula is as follows:
				• SHA-256: spPassword = Base64(SHA-256(spId + Password + timeStamp))
				• MD5: spPassword = MD5(spId + Password + timeStamp)
				In the formula:
				• **spId** and **timeStamp**: authentication ID and timestamp.
				• **Password**: password for partners to access the SDP.
				– A service Partner and API Partner can obtain the password from the email notification received after successful registration.
				– A Developer can log in to the Developer Portal, choose **Member Center** > **Account** > **Registration Information** > **Invoke Password**, and set the password.
				📖 **NOTE**
				To retain features of earlier versions, the SP uses the MD5 algorithm in the connection to the SDP, which might cause security risks.
				[Example]
				e6434ef249df55c7a21a0b45758a39bb

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Parameter	Type	Length	Level of Requirement	Description
bundleID	xsd: string	21	Conditional	Bundle ID. When SDP creates a capability bundle, SDP allocates a bundleID to capability bundle. The **bundleID** must not be contained during invocation of a service interface developed by service partners and other partners, and must be contained during invocation of a capability interface developed by API partners, other partners, and developers. [Example] 256000039
serviceId	xsd: string	21	Conditional	Service ID. The ID is automatically allocated by the SDP to services after successful release. A service Partner can log in to the SDP management portal and query service information for the ID. The **serviceId** must be contained during invocation of a service interface developed by service partners and other partners, and must not be contained during invocation of a capability interface developed by API partners, other partners, and developers. [Example] 35000001000001
timestamp	xsd: string	14	Conditional	Timestamp (UTC time). The value is used in MD5 encryption of **spPassword**. This parameter is mandatory when the **spPassword** parameter is required. [Format] *yyyyMMddHHmmss* [Example] 20100731064245

Message Body Parameters

Table 1-11 describes parameters in a requestPaymentRequest message body.

Table 1-11 Parameters in a requestPaymentRequest message body

Parameter	Type	Length	Level of Requirement	Description
serviceId	xsd: string	4	Mandatory	Holds the identification number to identify the service request. This is set as 200.
parameter	Parameter[0..20]	-	Optional	Holds the request parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • DueAmount • MSISDNNum • ProcessingNumber • serviceId • AcctRef • AcctBalance • MinDueAmount • Narration • PrefLang • OpCoID • CurrCode For the detailed parameter name information, see Table 1-13. The **parameter** parameter is of the Parameter[0..20] type and contains multiple sub-parameters. For details about the Parameter[0..20] type, see Table 1-12.

Table 1-12 describes the parameter structure of the Parameter[0..20] type.

Table 1-12 Parameter structure of the Parameter[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

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Table 1-13 describes the parameter name lists.

Table 1-13 Parameter name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
DueAmount	decimal	4	Mandatory	The amount that the subscriber is due to pay on the App system.
MSISDNNum	xsd:string	30	Mandatory	An Id to uniquely identify the subscriber on the App system. Subscriber's MSISDN number or Fake ID. [Format] • Mobile number: [Country code][Mobile number] • Fake ID: [Prefix]- [opcoid]-[sequence]. [Example] • Mobile number: 8612312345678 • Fake ID: f-245-11900000007639 Partner needs to convert MSISDN to FRI format before sending it as per below rules: FRI:< *MSISDNNum* >/MSISDN
ProcessingNumber	xsd:string	140	Mandatory	An Id to uniquely identify the transaction on the App system.
serviceId	xsd:string	140	Optional	This relates to the **Code** configured in the Mobile Money system. Properties file is used to uniquely identify each service provided.
AcctRef	xsd:string	140	Mandatory	Subscriber's account number on the App system. If the subscriber does not have account on the App system, you need confirm it with the Mobile Money system. The Partner should send the request in format like: FRI:< AcctRef > @water.company/SP
AcctBalance	xsd:int	4	Optional	Subscriber's balance on the App system. If there is no subscriber's balance on the App system, you need confirm it with the Mobile Money system.

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name	value			
Parameter	Type	Length	Level of Requirement	Description
MinDueAmount	xsd:int	4	Optional	The minimum amount that the subscriber is due to pay on the App system. If there is no minimum due on App system, you need confirm it with the Mobile Money system.
Narration	xsd:string	140	Optional	Any text that the vendor would like to display to the subscriber.
PrefLang	xsd:string	140	Optional	The language locale to be used.
OpCoID	xsd:string	140	Optional	Identifier of the country local to be used. Please refer to 3.3 OpCoID List.
CurrCode	xsd:string	3	Optional	The currency, as an ISO 4217 formatted string.

1.2.4 Response for RequestPayment

The SDP functions as the server, processes requestPaymentRequest messages received from the App, and sends requestPaymentResponse messages to the App.

This topic provides a success response example. If a request fails, the SDP sends an error response that contains an error code. For details about error responses, see 1.7 API Error Responses.

Example

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
    <ns1:processRequestResponse xmlns:ns1="http://b2b.mobilemoney.mtn.zm_v1.0">
      <return>
        <name>ProcessingNumber</name>
        <value>555</value>
      </return>
      <return>
        <name>ThirdPartyAcctRef</name>
        <value>444</value>
      </return>
      <return>
        <name>senderID</name>
```

```
      <value>MOM</value>
    </return>
    <return>
      <name>StatusCode</name>
      <value>222</value>
    </return>
    <return>
      <name>StatusDesc</name>
      <value>PENDING</value>
    </return>
    <return>
      <name>MOMTransactionID</name>
      <value>111</value>
    </return>
  </ns1:processRequestResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-14 Describes parameters in a requestPaymentResponse message HTTP header.

Table 1-14 Parameters in a requestPaymentResponse message HTTP header

Header Field	Paramet er	Type	Length	Level of Require ment	Description
Signature	/	String		Condition al	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message Body Parameters

Table 1-15 describes parameters in a requestPaymentResponse message body.

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Table 1-15 Parameters in a requestPaymentResponse message body

Parameter	Type	Length	Level of Requirement	Description
return	Return[0..20]	-	Mandatory	Holds the response parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • ProcessingNumber • ThirdPartyAcctRef • SenderID • StatusCode • StatusDesc • MOMTransactionID For the detailed parameter name information, see Table 1-17. The **return** parameter is of the Return[0..20] type and contains multiple sub-parameters. For details about the Return[0..20] type, see Table 1-16.

Table 1-16 describes the parameter structure of the Return[0..20] type.

Table 1-16 Parameter structure of the Return[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

Table 1-17 describes the return name lists.

Table 1-17 Return name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
ProcessingNumber	xsd:string	140	Mandatory	An Id to uniquely identify the transaction on the App system.
ThirdPartyAcctRef	xsd:string	140	Optional	Subscriber's account number on the App system. The SDP will fill this parameter as the same value which was received from **AcctRef** in the request.

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
SenderID	xsd:string	140	Optional	An Id to identify sender. This is set as MOM.
StatusCode	xsd:int	2	Mandatory	A predetermined code to determine the status of the transaction.
StatusDesc	xsd:string	140	Optional	The Mobile Money system supplied description of the response code. The value are as follow: • SUCCESSFUL • PENDING • FAILED
MOMTransac tionID	xsd:string	140	Optional	An Id to uniquely identify the transaction on the Mobile Money system. The SDP will forward this parameter to the App system.

1.2.5 Error Codes for RequestPayment

Table 1-18 describes requestPayment error codes that the SDP may return upon an exception. For details about the error codes, see the *SDP Solution Error Code Reference*.

Table 1-18 requestPayment error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Fundamo userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.

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Error Code	Description
	Get addr route info failed!the baseScfType = %1,the sourceAddr = %2,the destAddr = %3. **NOTE** ScfType refers to Service Capability Function Type.
	MDSP AuthPrice failed, result code is %1. **NOTE** The MDSP is composed of the Mobile Data Control Center (MDCC) subsystem and peripheral functional subsystems such as the Portal and Mobile Data Management Center (MDMC). The MDCC subsystem consists of core modules such as the Short Message Push Agent (SMPA), Network Management System (NMS) proxy, and BOSS interface machine. The MDSP is connected to the NMS, BOSS system, Service Control Point (SCP), customer service center, and service gateways. The MDSP can implement the functions such as external entity access, mobile data management, user and service authentication, and charging.
	Waiting for response timed out, message type is %1.
	Cannot find route policy, the policy identifier is %1.
	The service status is unknown.
	Service %1 is in blacklist!
	The API %1 is not existed.
	Service ID %1 is not exist!
	The service status is suspended.
	The service status is pre-deregistered.
	The service status is deregistered.
	The API status is disabled.
	SP status is locked.
	The sp's Status is forbidden.
	The sp's status is pause.
	The RemotePassword of NE %1 is empty! **NOTE** NE refers to network element, such as SMSC, MMSC.

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Error Code	Description
	NEInfo id %1 not in SAG. **NOTE** The SAG provides open interfaces for third-party partners. It authenticates and authorizes the partners, and controls the Service Level Agreement policies when it receives third-party service requests.
	The ScfType %1 is inactive! **NOTE** ScfType refers to Service Capability Function Type.
	The ScfType %1 is uninstalled! **NOTE** ScfType refers to Service Capability Function Type.
	The service status is configuring.
	The Created is null.
	SP ip is null!
	Sp password is null!
	The Nonce is null.
	Authentication Failed, cause by SP, because of timestamp expired.
	Service ID is null!
	Sp password is null!
	Timestamp is empty in soapheader.
	Service ID %1 is invalid!
	The PasswordDigest is not accepted.
	The sp's Status is pre-deregistered.
	The sp's Status is deregistered.
	The sp's Status is unknown.
	SP %1 is in blacklist!
	SPID %1 is not exist!
	Sp password is not accepted!
	Sp ip %1 is not accepted!
	local SP password is null!

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Error Code	Description
	The authentication type is unknown!
	Authentication Failed, cause by SP, because of timestamp is not valid.
	Minimum Amount per Transaction
	%1 is null.
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
	%1 is null.
103	Duplicate transaction id.
104	Authorisation declined.
105	Non-existent Mobile Acc.
106	Deposit Transfer not processed: Own Mobile Account Number entered.
107	Deposit Transfer not processed: Invalid amount format.
108	Deposit Transfer not processed: Insufficient funds
109	Deposit Transfer not processed: Daily limit has been exceeded.
110	Deposit Transfer not processed: Source account not active
111	Deposit Transfer not processed: Mobile Account Number is not active.
501	DATEFORMAT_INVALID
502	FRI_INVALID
503	IDENTITY_INVALID
504	INVALID_FIELD_VALUE
505	MANDATORY_FIELD_MISSING
506	OTHER_FINANCIAL_ERROR
507	PREAPPROVAL_NOT_FOUND
508	REFERENCE_ID_NOT_FOUND
509	REQUIRED_FIELD_MISSING
510	SERVICE_TEMPORARILY_UNAVAILABLE

Error Code	Description
511	SESSION_INVALID
512	TRANSACTION_ID_OR_ORIGINAL_TRANSACTION_ID_MISSING
513	TRANSACTION_NOT_COMPLETED
514	TRANSFER_TYPE_AND_ACCOUNT_DO_NOT_MATCH
515	ACCOUNTHOLDER_WITH_FRI_NOT_FOUND
516	ACCOUNTHOLDER_WITH_MSISDN_NOT_FOUND
517	AUTHORIZATION_INVALID_ACCOUNT_TYPE_COMBINATION
518	COULD_NOT_PERFORM_OPERATION
519	EXPIRED_OR_INVALID_TRANSACTION_ID
520	INCORRECT_PASSWORD
521	NOT_AUTHORIZED
522	AMOUNT_INVALID
523	CURRENCY_NOT_SUPPORTED
524	INVALID_CURRENCY
525	RESOURCE_NOT_ACTIVE
526	SOURCE_NOT_FOUND
527	RESOURCE_NOT_FOUND
528	Any Other Error Code
1000	Pending

1.3 Bill Payment API initiated by Subscriber

1.3.1 Process

Figure 1-3 shows the process of bill payment confirmation for ECW.

Figure 1-3 Process of bill payment confirmation for ECW
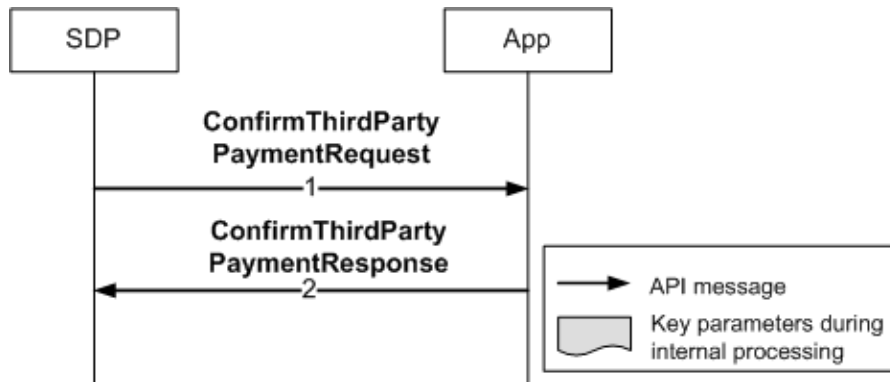
Table 1-19 describes the process for ECW.

Table 1-19 Description for the process of bill payment confirmation for ECW

Step	Description
1	The SDP sends bill payment confirmation request to the App.
2	The App parses the bill payment confirmation request and sends a response to the SDP.

1.3.2 ConfirmThirdPartyPayment

Function

The subscriber through ECW initiates the ConfirmThirdPartyPayment API to pay their Bill on third party system.
Partners must code the App based on the API field requirements so that the App can correctly parse and respond to requests received from the SDP. The App must send a response to the SDP within 30 seconds.

Request URI

The request URI is the destination URI of ConfirmThirdPartyPaymentRequest messages sent by the SDP to the App. The URI is defined by the App.

1.3.3 Request for ConfirmThirdPartyPayment

The SDP functions as the client and sends a ConfirmThirdPartyPaymentRequest message to the App to payment confirmation.

Example

```
POST /ThirdPartyServiceUMMImpl/UMMServiceService/ConfirmThirdPartyPayment HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Signature:43AD232FD45FF

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Header>
    <ns1:NotifySOAPHeader xmlns:ns1="http://www.huawei.com.cn/schema/common/v2_1">
      <ns1:traceUniqueID>5040215058212072811291800006002</ns1:traceUniqueID>
    </ns1:NotifySOAPHeader>
  </soapenv:Header>
  <soapenv:Body>
    <ns2:processRequest xmlns:ns2="http://b2b.mobilemoney.mtn.zm_v1.0/">
      <serviceId>101</serviceId>
      <parameter>
        <name>ProcessingNumber</name>
        <value>12121212</value>
      </parameter>
      <parameter>
        <name>senderID</name>
        <value>MOM</value>
      </parameter>
      <parameter>
        <name>AcctRef</name>
        <value>46733491234</value>
      </parameter>
      <parameter>
        <name>RequestAmount</name>
        <value>1212</value>
      </parameter>
      <parameter>
        <name>paymentRef</name>
        <value>12121</value>
      </parameter>
      <parameter>
        <name>ThirdPartyTransactionID</name>
        <value>12112</value>
      </parameter>
      <parameter>
        <name>MOMAcctNum</name>
        <value> FRI:46733491234/MSISDN </value>
      </parameter>
```

```
        <parameter>
          <name>CustName</name>
          <value>121212</value>
        </parameter>
        <parameter>
          <name>TXNType</name>
          <value>12121</value>
        </parameter>
        <parameter>
          <name>StatusCode</name>
          <value>12121</value>
        </parameter>
        <parameter>
          <name>OpCoID</name>
          <value>0</value>
        </parameter>
        <parameter>
          <name>MerchantName</name>
          <value>dstv1</value>
        </parameter>
        <parameter>
          <name>CurrCode</name>
          <value>USD</value>
        </parameter>
      </ns2:processRequest>
    </soapenv:Body>
  </soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-20 Describes parameters in a ConfirmThirdPartyPaymentRequest message HTTP header.

Table 1-20 Parameters in a ConfirmThirdPartyPaymentRequest message HTTP header

Header Field	Parameter	Type	Length	Level of Requirement	Description
Signature	/	String		Conditional	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message SOAP Header Parameters

Table 1-21 describes parameters in a ConfirmThirdPartyPaymentRequest message header.

Table 1-21 Parameters in a ConfirmThirdPartyPaymentRequest message header

Parameter	Type	Length	Level of Requirement	Description
traceUniqueID	xsd:string	30	Mandatory	Transaction ID. The ID is automatically generated by the SDP and is used only to trace messages during the SDP commissioning. The App ignores this parameter. [Example] 100001200101110623021721000011

Message Body Parameters

Table 1-22 describes parameters in a ConfirmThirdPartyPaymentRequest message body.

Table 1-22 Parameters in a ConfirmThirdPartyPaymentRequest message body

Parameter	Type	Length	Level of Requirement	Description
serviceId	xsd: string	4	Mandatory	Holds the identification number to identify the service request. This is set as 101.

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Parameter	Type	Length	Level of Requirement	Description
parameter	Parameter[0 ..20]	-	Optional	Holds the request parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • ProcessingNumber • SenderID • AcctRef • RequestAmount • PaymentRef • ThirdPartyTransactionID • MOMAcctNum • CustName • TXNType • StatusCode • OpCoID • MerchantName • CurrCode For the detailed parameter name information, see Table 1-24. **NOTE** Fields **RequestAmount** and **PaymentRef** are mandatory only for serviceId 101. The currency is the main currency of the country where the OpCo node is located. The minimum current unit is used. For the currencies and their units in the OpCo countries, see 3.1 The Currency and Atomic Charging Unit of each OpCo country. The **parameter** parameter is of the Parameter[0..20] type and contains multiple sub-parameters. For details about the Parameter[0..20] type, see Table 1-23.

Table 1-23 describes the parameter structure of the Parameter[0..20] type.

Table 1-23 Parameter structure of the Parameter[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

1 SOAP APIs

Table 1-24 describes the parameter lists.

Table 1-24 Parameter name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
ProcessingNumber	xsd:long	140	Mandatory	An Id to uniquely identify the transaction on the App system.
SenderID	xsd:string	140	Optional	An Id to identify sender. This is set as MOM.
AcctRef	xsd:string	140	Mandatory	Subscriber's account number on the App system. If the subscriber does not have account on the App system, you need confirm it with the Mobile Money system. The values send to SP will be in format like: • FRI:46733491234/MSISDN • FRI:12345ABC@water.company/SP
RequestAmount	decimal	4	Mandatory	The value of the amount to be paid to the App system.
PaymentRef	xsd:string	140	Optional	A description the subscriber provides of the payment. The SDP will forward this parameter to the App system.
ThirdPartyTransactionID	xsd:string	140	Optional	An Id to uniquely identify the transaction on the App system. This parameter is left blank in this instance. This is the ID sent by the App system in requestPayment request **ProcessingNumber** parameter.
MOMAcctNum	xsd:string	140	Optional	Subscriber's Mobile Money account number. SDP will send the date to SP like : FRI:46733491234/MSISDN 46733491234 is Subscriber MSISDN.
CustName	xsd:string	140	Mandatory	The name of the subscriber.
TXNType	xsd:string	140	Optional	A code value to identify the type of transaction being executed.
StatusCode	xsd:int	4	Mandatory	A predetermined code to determine the status of the transaction. Value: 01

1 SOAP APIs

name		value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**	
OpCoID	xsd:string	140	Optional	Identifier of the country local to be used. Please refer to 3.3 OpCoID List.	
MerchantNam e	xsd:string	30	Optional	It indicates the name of the destination partner.	
CurrCode	xsd:string	3	Optional	The currency, as an ISO 4217 formatted string.	

1.3.4 Response for ConfirmThirdPartyPayment

The App functions as the server, processes ConfirmThirdPartyPaymentRequest messages received from the SDP, and sends ConfirmThirdPartyPaymentResponse messages to the SDP.

This topic provides a success response example. If a request fails, the SDP sends an error response that contains an error code. For details about error responses, see 1.7 API Error Responses.

Example

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:b2b="http://b2b.mobilemoney.mtn.zm_v1.0/">
  <soapenv:Header/>
  <soapenv:Body>
    <b2b:processRequestResponse>
     <return>
       <name>ProcessingNumber</name>
       <value>121212</value>
    </return>
    <return>
      <name>StatusCode</name>
      <value>121212</value>
    </return>
    <return>
      <name>StatusDesc</name>
      <value>PENDING</value>
    </return>
    <return>
      <name>ThirdPartyAcctRef</name>
      <value>121212</value>
    </return>
```

```
        <return>
          <name>Token</name>
          <value>121212</value>
        </return>
      </b2b:processRequestResponse>
    </soapenv:Body>
  </soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-25 Describes parameters in a ConfirmThirdPartyPaymentResponse message HTTP header.

Table 1-25 Parameters in a ConfirmThirdPartyPaymentResponse message HTTP header

Header Field	Paramet er	Type	Length	Level of Require ment	Description
Signature	/	String		Condition al	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message Body Parameters

Table 1-26 describes parameters in a ConfirmThirdPartyPaymentResponse message body.

Table 1-26 Parameters in a ConfirmThirdPartyPaymentResponse message body

Parameter	Type	Length	Level of Requirement	Description
return	Return[0..20]	-	Mandatory	Holds the response parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • ProcessingNumber • StatusCode • StatusDesc • ThirdPartyAcctRef • Token For the detailed parameter name information, see Table 1-28. The **return** parameter is of the Return[0..20] type and contains multiple sub-parameters. For details about the Return[0..20] type, see Table 1-27.

Table 1-27 describes the parameter structure of the Return[0..20] type.

Table 1-27 Parameter structure of the Return[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

Table 1-28 describes the return name lists.

Table 1-28 Return name lists

name		value			
Parameter	Type	Length	Level of Requirement	Description	
ProcessingNumber	xsd:string	140	Mandatory	An Id to uniquely identify the transaction on the Mobile Money system.	
StatusCode	xsd:int	2	Mandatory	A predetermined code to determine the status of the transaction.	

name		value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**	
StatusDesc	xsd:string	140	Optional	The Mobile Money system supplied description of the response code. The value are as follow: • PENDING • COMPLETED • FAILED	
ThirdPartyAcctRef	xsd:string	140	Optional	Subscriber's account number on the App system. The SDP will fill this parameter as the same value which was received from **AcctRef** in the request.	
Token	xsd:string	140	Optional	A 32 character token representing the prepaid airtime or electricity bought.	

1.3.5 Error Codes for ConfirmThirdPartyPayment

The App returns error codes to the SDP when an exception occurs in response to ConfirmThirdPartyPaymentRequest messages. The error codes are defined by partners.
The following table describes ConfirmThirdPartyPayment error codes that the partners may return upon an exception.

Table 1-29 ConfirmThirdPartyPayment error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Fundamo userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.
101	Field length exceeded.

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Error Code	Description
102	Subscriber could not be identified. (Invalid subscriberID).
103	Duplicate transaction id.

1.4 Deposit APIs

1.4.1 Process

Figure 1-4 shows the process of deposit for ECW.

Figure 1-4 Process of deposit for ECW
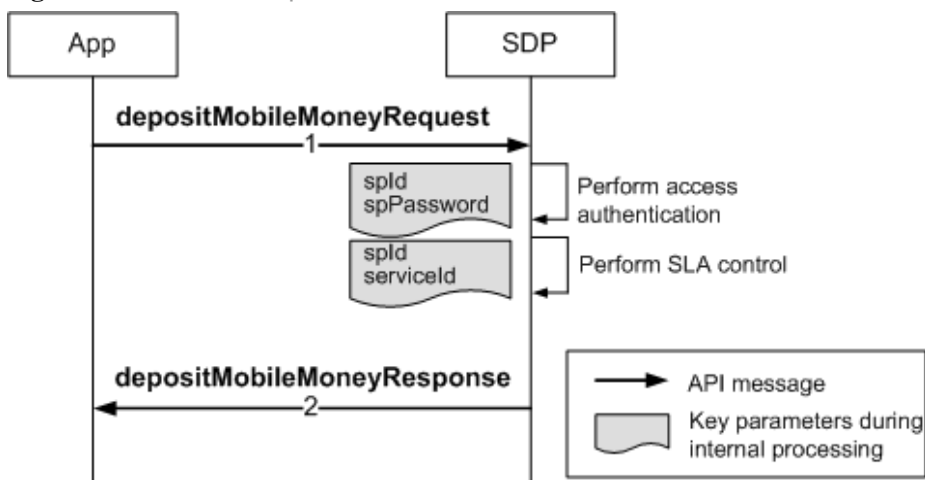
Table 1-30 describes the process for ECW.

Table 1-30 Description for the process of deposit for ECW

Step	Description
1	The App invokes the depositMobileMoney API to deposit mobile money in subscriber's mobile money account.
2	• The SDP performs authentication and service level agreement (SLA) control based on fields in the request. • The SDP sends deposit response to the App.

1.4.2 DepositMobileMoney

Function

The App invokes the depositMobileMoney API to deposit money in Subscriber s mobile money account. Partners must code the App based on the API field requirements so that the App can send correct requests to the SDP. The SDP must send a response within 180 seconds by default.

Request URI

The request URI is the destination URI of depositMobileMoney messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://*IP*:*Port*/ThirdPartyServiceUMMImpl/UMMServiceService/DepositMobileMoney/v17

In the format, **IP** and **Port** indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

1.4.3 Request for DepositMobileMoney

The App functions as the client and sends a depositMobileMoneyRequest message to the SDP to deposit money in Subscriber s mobile money account.

Example

```
POST /ThirdPartyServiceUMMImpl/UMMServiceService/DepositMobileMoney/v17 HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a


<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:b2b="http://b2b.mobilemoney.mtn.zm_v1.0/">
  <soapenv:Header>
    <RequestSOAPHeader xmlns="http://www.huawei.com.cn/schema/common/v2_1">
      <spId>35000001</spId>
      <spPassword>de96d901b3bad1db2aab76b7b0b202f2</spPassword>
      <bundleID>256000039</bundleID>
      <serviceId>35000001000035</serviceId>
      <timeStamp>20100727</timeStamp>
    </RequestSOAPHeader>
  </soapenv:Header>
  <soapenv:Body>
    <b2b:processRequest>
      <serviceId>201</serviceId>
      <parameter>
        <name>ProcessingNumber</name>
        <value>555</value>
      </parameter>
      <parameter>
        <name>serviceId</name>
        <value>102</value>
      </parameter>
      <parameter>
        <name>SenderID</name>
```

```
          <value>MOM</value>
       </parameter>
       <parameter>
          <name>PrefLang</name>
          <value>121212121</value>
       </parameter>
       <parameter>
          <name>OpCoID</name>
          <value>0</value>
       </parameter>
       <parameter>
          <name>MSISDNNum</name>
          <value> FRI:46733491234/MSISDN </value>
       </parameter>
       <parameter>
          <name>Amount</name>
          <value>10</value>
       </parameter>
       <parameter>
          <name>Narration</name>
          <value> FRI:< AcctRef > @water.company/SP </value>
       </parameter>
       <parameter>
          <name>IMSINum</name>
          <value>86</value>
       </parameter>
       <parameter>
          <name>OrderDateTime</name>
          <value>20100727</value>
       </parameter>
          <parameter>
             <name>CurrCode</name>
             <value>USD</value>
          </parameter>
     </b2b:processRequest>
   </soapenv:Body>
 </soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-31 Describes parameters in a depositMobileMoneyRequest message HTTP header.

Table 1-31 Parameters in a depositMobileMoneyRequest message HTTP header

Header Field	Parameter	Type	Length	Level of Requirement	Description
Cookie	sessionid	String		Conditional	The session id is used as a cookie in the HTTP header in the requests towards the Mobile Money Manager when the Partner use **Login/Logout** mode. [Example] default8fcee064690b45faa9f8f6c7e21c5e5a **NOTE** Cookie is valid only for ECW and not for fundamo.
Signature	/	String		Conditional	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message SOAP Header Parameters

Table 1-32 describes parameters in a depositMobileMoneyRequest message SOAP header.

Table 1-32 Parameters in a depositMobileMoneyRequest message SOAP header

Parameter	Type	Length	Level of Requirement	Description
spId	xsd: string	21	Mandatory	Partner ID.
				The ID is automatically allocated by the SDP to partners after successful registration. To obtain the ID:
				• A service Partner and API Partner can log in to the SDP management portal and query account information.
				• A Developer can log in to the Developer Portal and query account information.
				[Example]
				000201

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Parameter	Type	Length	Level of Requirement	Description

spPassword	xsd: string	100	Conditional	Authentication key for the SDP to authenticate partners.
				
				The SDP supports authentication by **SP ID + Password**, **SP ID + IP address + Password**, or **SP ID + IP address**. Partners select an authentication mode during registration. If a partner selects authentication by **SP ID + Password** or **SP ID + IP address + Password**, this parameter is mandatory in requests sent by this partner.
				
				The value is a character string encrypted. The encryption formula is as follows:
				
				• SHA-256: spPassword = Base64(SHA-256(spId + Password + timeStamp))
				• MD5: spPassword = MD5(spId + Password + timeStamp)
				
				In the formula:
				
				• **spId** and **timeStamp**: authentication ID and timestamp.
				• **Password**: password for partners to access the SDP.
				  – A service Partner and API Partner can obtain the password from the email notification received after successful registration.
				  – A Developer can log in to the Developer Portal, choose **Member Center** > **Account** > **Registration Information** > **Invoke Password**, and set the password.
				
				📖 **NOTE**
				To retain features of earlier versions, the SP uses the MD5 algorithm in the connection to the SDP, which might cause security risks.
				
				[Example]
				e6434ef249df55c7a21a0b45758a39bb

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Parameter	Type	Length	Level of Requirement	Description
bundleID	xsd: string	21	Conditional	Bundle ID. When SDP creates a capability bundle, SDP allocates a bundleID to capability bundle. The **bundleID** must not be contained during invocation of a service interface developed by service partners and other partners, and must be contained during invocation of a capability interface developed by API partners, other partners, and developers. [Example] 256000039
serviceId	xsd: string	21	Conditional	Service ID. The ID is automatically allocated by the SDP to services after successful release. An service Partner can log in to the SDP management portal and query service information for the ID. The **serviceId** must be contained during invocation of a service interface developed by service partners and other partners, and must not be contained during invocation of a capability interface developed by API partners, other partners, and developers. [Example] 35000001000001
timeStamp	xsd: string	14	Conditional	Timestamp (UTC time). The value is used in MD5 encryption of **spPassword**. This parameter is mandatory when the **spPassword** parameter is required. [Format] *yyyyMMddHHmmss* [Example] 20100731064245

Message Body Parameters

Table 1-33 describes parameters in a depositMobileMoneyRequest message body.

Table 1-33 Parameters in a depositMobileMoneyRequest message body

Parameter	Type	Length	Level of Requirement	Description
serviceId	xsd: string	4	Mandatory	Holds the identification number to identify the service request. This is set as 201.
parameter	Parameter[0..20]	-	Optional	Holds the request parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • ProcessingNumber • serviceId • SenderID • PrefLang • OpCoID • MSISDNNum • Amount • Narration • IMSINum • OrderDateTime • CurrCode For the detailed parameter name information, see Table 1-35. The **parameter** parameter is of the Parameter[0..20] type and contains multiple sub-parameters. For details about the Parameter[0..20] type, see Table 1-34.

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Table 1-34 describes the parameter structure of the Parameter[0..20] type.

Table 1-34 Parameter structure of the Parameter[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

Table 1-35 describes the parameter name lists.

Table 1-35 Parameter name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
ProcessingNumber	xsd:string	140	Mandatory	An Id to uniquely identify the transaction on the App system.
serviceId	xsd:string	140	Optional	This relates to the **Code** configured in the Mobile Money system. Properties file is used to uniquely identify each service provided.
SenderID	xsd:string	140	Optional	An Id to identify sender.
PrefLang	xsd:string	140	Optional	The language locale to be used.
OpCoID	xsd:int	140	Optional	Identifier of the country local to be used. Please refer to 3.3 OpCoID List.
MSISDNNum	xsd:string	30	Mandatory	An Id to uniquely identify the subscriber on the App system. Subscriber's MSISDN number or Fake ID. [Format] • Mobile number: [Country code][Mobile number] • Fake ID: [Prefix]- [opcoid]-[sequence]. [Example] • Mobile number: 8612312345678 • Fake ID: f-245-11900000007639 Partner need to map the MSISDN from to FRI format expected by Mobile Money. e.g. FRI: 8612312345678/MSISDN

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name	value			
Parameter	Type	Length	Level of Requirement	Description
Amount	decimal	4	Mandatory	The value of the amount to be deposited into the subscriber's Mobile Money account.
Narration	xsd:string	140	Optional	A descriptive message for receiver's transaction history. If present, it will also be added to the notification text sent to the receiver. Partner need to map the Narration value to FRI format expected by Mobile Money. e.g. FRI:< *AcctRef* > @water.company/SP
IMSINum	xsd:string	140	Optional	Subscriber's IMSI number.
OrderDateTime	xsd:dateTime	140	Optional	Time when subscriber ordered the service.
CurrCode	xsd:string	3	Optional	The currency, as an ISO 4217 formatted string.

1.4.4 Response for DepositMobileMoney

The SDP functions as the server, processes depositMobileMoneyRequest messages received from the App, and sends depositMobileMoneyResponse messages to the App.

This topic provides a success response example. If a request fails, the SDP sends an error response that contains an error code. For details about error responses, see API Error Responses.

Example

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
    <ns1:processRequestResponse xmlns:ns1="http://b2b.mobilemoney.mtn.zm_v1.0/">
      <return>
        <name>ProcessingNumber</name>
        <value>123</value>
      </return>
      <return>
        <name>SenderID</name>
```

```
            <value>MOM</value>
     </return>
    <return>
        <name>StatusCode</name>
        <value>234</value>
    </return>
    <return>
        <name>StatusDesc</name>
      <value>FAILED</value>
    </return>
    <return>
        <name>OpCoID</name>
        <value>0</value>
    </return>
    <return>
        <name>IMSINum</name>
         <value>86</value>
    </return>
    <return>
        <name>MSISDNNum</name>
      <value>13132132000</value>
    </return>
    <return>
        <name>OrderDateTime</name>
        <value>20100727</value>
    </return>
    <return>
        <name>ThirdPartyAcctRef</name>
        <value>121212</value>
    </return>
    <return>
        <name>MOMTransactionID</name>
        <value>456</value>
    </return>            </ns1:processRequestResponse>
   </soapenv:Body>
 </soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-36 Describes parameters in a depositMobileMoneyResponse message HTTP header.

Table 1-36 Parameters in a depositMobileMoneyResponse message HTTP header

Header Field	Paramet er	Type	Length	Level of Require ment	Description
Signature	/	String		Condition al	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message Body Parameters

Table 1-37 describes parameters in a depositMobileMoneyResponse message body.

Table 1-37 Parameters in a depositMobileMoneyResponse message body

Parameter	Type	Length	Level of Requirement	Description
return	Return[0..20]	-	Mandatory	Holds the response parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • ProcessingNumber • SenderID • StatusCode • StatusDesc • OpCoID • IMSINum • MSISDNNum • OrderDateTime • ThirdPartyAcctRef • MOMTransactionID For the detailed parameter name information, see Table 1-39. The **return** parameter is of the Return[0..20] type and contains multiple sub-parameters. For details about the Return[0..20] type, see Table 1-38.

Table 1-38 describes the parameter structure of the Return[0..20] type.

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Table 1-38 Parameter structure of the Return[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

Table 1-39 describes the return name lists.

Table 1-39 Return name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
ProcessingNumber	xsd:string	140	Optional	An Id to uniquely identify the transaction on the App system.
SenderID	xsd:string	140	Optional	An Id to identify sender. This is set as MOM.
StatusCode	xsd:int	2	Mandatory	A predetermined code to determine the status of the transaction.
StatusDesc	xsd:string	140	Optional	The Mobile Money system supplied description of the response code. The value are as follow: • SUCCESSFUL • PENDING • FAILED
OpCoID	xsd:string	140	Optional	Identifier of the country local to be used. Please refer to 3.3 OpCoID List.
IMSINum	xsd:string	140	Optional	Subscriber's IMSI number.
MSISDNNum	xsd:string	30	Optional	Subscriber's MSISDN number or Fake ID.
OrderDateTime	xsd:dateTime	140	Optional	Time when subscriber ordered the service.
ThirdPartyAcctRef	xsd:string	140	Optional	Subscriber's account number on the App system. The SDP will fill this parameter as the same value which was received from **AcctRef** in the request.

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
MOMTransactionID	xsd:long	140	Optional	An Id to uniquely identify the transaction on the Mobile Money system. The SDP will forward this parameter to the App system.

1.4.5 Error Codes for DepositMobileMoney

Table 1-40 describes depositMobileMoney error codes that the SDP may return upon an exception. For details about the error codes, see the *SDP Solution Error Code Reference*.

Table 1-40 depositMobileMoney error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Fundamo userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.
	Get addr route info failed!the baseScfType = %1,the sourceAddr = %2,the destAddr = %3. **NOTE** ScfType refers to Service Capability Function Type.
	MDSP AuthPrice failed, result code is %1. **NOTE** The MDSP is composed of the Mobile Data Control Center (MDCC) subsystem and peripheral functional subsystems such as the Portal and Mobile Data Management Center (MDMC). The MDCC subsystem consists of core modules such as the Short Message Push Agent (SMPA), Network Management System (NMS) proxy, and BOSS interface machine. The MDSP is connected to the NMS, BOSS system, Service Control Point (SCP), customer service center, and service gateways. The MDSP can implement the functions such as external entity access, mobile data management, user and service authentication, and charging.

Error Code	Description
	Waiting for response timed out, message type is %1.
	Cannot find route policy, the policy identifier is %1.
	The service status is unknown.
	Service %1 is in blacklist!
	The API %1 is not existed.
	Service ID %1 is not exist!
	The service status is suspended.
	The service status is pre-deregistered.
	The service status is deregistered.
	The API status is disabled.
	SP status is locked.
	The sp's Status is forbidden.
	The sp's status is pause.
	The RemotePassword of NE %1 is empty! **NOTE** NE refers to network element, such as SMSC, MMSC.
	NEInfo id %1 not in SAG. **NOTE** The SAG provides open interfaces for third-party partners. It authenticates and authorizes the partners, and controls the Service Level Agreement policies when it receives third-party service requests.
	The ScfType %1 is inactive! **NOTE** ScfType refers to Service Capability Function Type.
	The ScfType %1 is uninstalled! **NOTE** ScfType refers to Service Capability Function Type.
	The service status is configuring.
	The Created is null.
	SP ip is null!

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Error Code	Description
	Sp password is null!
	The Nonce is null.
	Authentication Failed, cause by SP, because of timestamp expired.
	Service ID is null!
	Sp password is null!
	Timestamp is empty in soapheader.
	Service ID %1 is invalid!
	The PasswordDigest is not accepted.
	The sp's Status is pre-deregistered.
	The sp's Status is deregistered.
	The sp's Status is unknown.
	SP %1 is in blacklist!
	SPID %1 is not exist!
	Sp password is not accepted!
	Sp ip %1 is not accepted!
	local SP password is null!
	The authentication type is unknown!
	Authentication Failed, cause by SP, because of timestamp is not valid.
	Minimum Amount per Transaction
	%1 is null.
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
	%1 is null.
103	Duplicate transaction id.
104	Authorisation declined.
105	Non-existent Mobile Acc.
106	Deposit Transfer not processed: Own Mobile Account Number entered.

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Error Code	Description
107	Deposit Transfer not processed: Invalid amount format.
108	Deposit Transfer not processed: Insufficient funds
109	Deposit Transfer not processed: Daily limit has been exceeded.
110	Deposit Transfer not processed: Source account not active
111	Deposit Transfer not processed: Mobile Account Number is not active.
501	DATEFORMAT_INVALID
502	FRI_INVALID
503	IDENTITY_INVALID
504	INVALID_FIELD_VALUE
505	MANDATORY_FIELD_MISSING
506	OTHER_FINANCIAL_ERROR
507	PREAPPROVAL_NOT_FOUND
508	REFERENCE_ID_NOT_FOUND
509	REQUIRED_FIELD_MISSING
510	SERVICE_TEMPORARILY_UNAVAILABLE
511	SESSION_INVALID
512	TRANSACTION_ID_OR_ORIGINAL_TRANSACTION_ID_MISSING
513	TRANSACTION_NOT_COMPLETED
514	TRANSFER_TYPE_AND_ACCOUNT_DO_NOT_MATCH
515	ACCOUNTHOLDER_WITH_FRI_NOT_FOUND
516	ACCOUNTHOLDER_WITH_MSISDN_NOT_FOUND
517	AUTHORIZATION_INVALID_ACCOUNT_TYPE_COMBINATION
518	COULD_NOT_PERFORM_OPERATION
519	EXPIRED_OR_INVALID_TRANSACTION_ID
520	INCORRECT_PASSWORD
521	NOT_AUTHORIZED
522	AMOUNT_INVALID

Error Code	Description
523	CURRENCY_NOT_SUPPORTED
524	INVALID_CURRENCY
525	RESOURCE_NOT_ACTIVE
526	SOURCE_NOT_FOUND
527	RESOURCE_NOT_FOUND
528	Any Other Error Code

1.5 APIs for Querying Subscriber Account Balances

1.5.1 Process

Figure 1-5 shows the process of querying subscriber account balance for ECW.

Figure 1-5 Process of querying subscriber account balance(ECW)
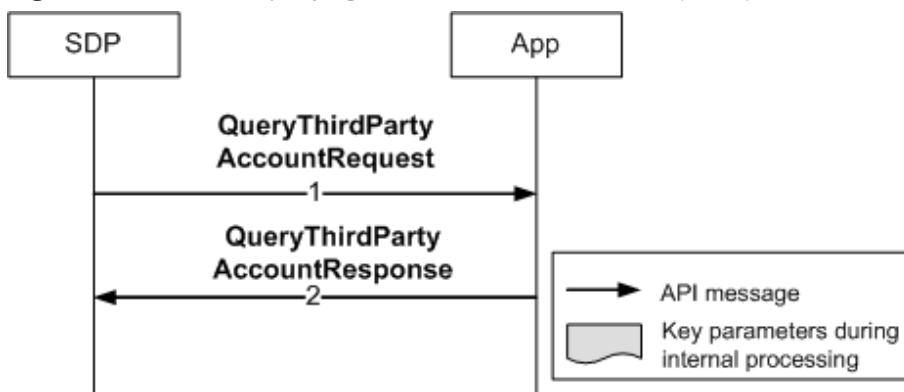

Table 1-41 describes the process.

Table 1-41 Description for the process of querying subscriber account balance(ECW)

Step	Description
1	The SDP sends querying subscriber account balance request to the SDP.
2	The App parses the querying subscriber account balance request and sends a response to the SDP.

1.5.2 QueryThirdPartyAccount

Function

The SDP (functioning as the client) invokes the QueryThirdPartyAccount API to send querying subscriber account balance requests to the App (functioning as the server).
Partners must code the App based on the API field requirements so that the App can correctly parse and respond to requests received from the SDP. The App must send a response to the SDP within 30 seconds.

Request URI

The request URI is the destination URI of QueryThirdPartyAccountRequest messages sent by the SDP to the App. The URI is defined by the App.

1.5.3 Request for QueryThirdPartyAccount

The SDP functions as the client and sends a QueryThirdPartyAccountRequest message to the App to query subscriber account balance.

Example

```
POST /ThirdPartyServiceUMMImpl/UMMServiceService/QueryThirdPartyAccount HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Signature:43AD232FD45FF

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Header>
    <ns1:NotifySOAPHeader xmlns:ns1="http://www.huawei.com.cn/schema/common/v2_1">
      <ns1:traceUniqueID>50402150582120727170455000202002</ns1:traceUniqueID>
    </ns1:NotifySOAPHeader>
  </soapenv:Header>
  <soapenv:Body>
    <ns2:processRequest xmlns:ns2="http://b2b.mobilemoney.mtn.zm_v1.0/">
      <serviceId>100</serviceId>
      <parameter>
        <name>ProcessingNumber</name>
        <value>1212121</value>
      </parameter>
      <parameter>
        <name>senderID</name>
        <value>MOM</value>
      </parameter>
```

```
<parameter>
  <name>AcctRef</name>
  <value> FRI:46733491234/MSISDN </value>
</parameter>
<parameter>
  <name>PrefLang</name>
  <value>121212121</value>
</parameter>
<parameter>
  <name>OpCoID</name>
  <value>0</value>
</parameter>        </ns2:processRequest>
    </soapenv:Body>
  </soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-42 Describes parameters in a QueryThirdPartyAccountRequest message HTTP header.

Table 1-42 Parameters in a QueryThirdPartyAccountRequest message HTTP header

Header Field	Parameter	Type	Length	Level of Requirement	Description
Signature	/	String		Conditional	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message SOAP Header Parameters

Table 1-43 describes parameters in a QueryThirdPartyAccountRequest message header.

Table 1-43 Parameters in a QueryThirdPartyAccountRequest message header

Parameter	Type	Length	Level of Requirement	Description
traceUniqueID	xsd:string	30	Mandatory	Transaction ID. The ID is automatically generated by the SDP and is used only to trace messages during the SDP commissioning. The App ignores this parameter.

				[Example] 10000120010111062302172100011

Message Body Parameters

Table 1-44 describes parameters in a QueryThirdPartyAccountRequest message body.

Table 1-44 Parameters in a QueryThirdPartyAccountRequest message body

Parameter	Type	Length	Level of Requirement	Description
serviceId	xsd: string	4	Mandatory	Holds the identification number to identify the service request. This is set as 100.
parameter	Parameter[0..20]	-	Optional	Holds the request parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • ProcessingNumber • SenderID • AcctRef • PrefLang OpCoIDFor the detailed parameter name information, see Table 1-46. The **parameter** parameter is of the Parameter[0..20] type and contains multiple sub-parameters. For details about the Parameter[0..20] type, see Table 1-45.

Table 1-45 describes the parameter structure of the Parameter[0..20] type.

Table 1-45 Parameter structure of the Parameter[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

Table 1-46 describes the parameter lists.

Table 1-46 Parameter name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
ProcessingNumber	xsd:string	140	Optional	An Id to uniquely identify the transaction on the App system.
SenderID	xsd:string	140	Optional	An Id to identify sender. This is set as MOM.
AcctRef	xsd:string	140	Mandatory	Subscriber's account number on the App system. If the subscriber does not have account on the App system, you need confirm it with the Mobile Money system. The values send to SP will be in format like: - FRI:46733491234/MSISDN - FRI:12345ABC@water.company/SP
PrefLang	xsd:string	140	Optional	The language locale to be used.
OpCoID	xsd:string	140	Optional	Identifier of the country local to be used. Please refer to 3.3 OpCoID List.

1.5.4 Response for QueryThirdPartyAccount

The App functions as the server, processes QueryThirdPartyAccountRequest messages received from the SDP, and sends QueryThirdPartyAccountResponse messages to the SDP.

This topic provides a success response example. If a request fails, the SDP sends an error response that contains an error code. For details about error responses, see 1.7 API Error Responses.

Example

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:b2b="http://b2b.mobilemoney.mtn.zm_v1.0/">
   <soapenv:Header/>
```

```
<soapenv:Body>
  <b2b:processRequestResponse>
    <return>
       <name>DueAmount</name>
       <value>121212</value>
    </return>
    <return>
       <name>BalanceAmount</name>
       <value>2121</value>
    </return>
    <return>
       <name>MinDueAmount</name>
       <value>121212</value>
    </return>
    <return>
       <name>Narration</name>
       <value>121212</value>
    </return>
    <return>
       <name>ProcessingNumber</name>
       <value>121212</value>
    </return>
    <return>
       <name>StatusCode</name>
       <value>121212</value>
    </return>
    <return>
       <name>ThirdPartyAcctRef</name>
       <value>121212</value>
    </return>
    <return>
       <name>StatusDesc</name>
       <value>121212</value>
    </return>
    <return>
       <name>CurrCode</name>
       <value>USD</value>
    </return>
  </b2b:processRequestResponse>
</soapenv:Body>
</soapenv:Envelope>
```

Message HTTP Header Parameters

Table 1-47 Describes parameters in a QueryThirdPartyAccountResponse message HTTP header.

Table 1-47 Parameters in a QueryThirdPartyAccountResponse message HTTP header

Header Field	Paramet er	Type	Length	Level of Require ment	Description
Signature	/	String		Condition al	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF

Message Body Parameters

Table 1-48 describes parameters in a QueryThirdPartyAccountResponse message body.

Table 1-48 Parameters in a QueryThirdPartyAccountResponse message body

Parameter	Type	Length	Level of Requirement	Description
return	Return[0..20]	-	Mandatory	Holds the response parameter details in the form of name/value pair to identify the service details. Valid parameter names are: • DueAmount • BalanceAmount • MinDueAmount • Narration • ProcessingNumber • StatusCode • ThirdPartyAcctRef • StatusDesc • CurrCode For the detailed parameter name information, see Table 1-50. The **return** parameter is of the Return[0..20] type and contains multiple sub-parameters. For details about the Return[0..20] type, see Table 1-49.

Table 1-49 describes the parameter structure of the Return[0..20] type.

Table 1-49 Parameter structure of the Return[0..20] type

Parameter	Type	Length	Level of Requirement	Description
name	xsd:string	-	Mandatory	Holds the parameter name.
value	xsd:string	-	Mandatory	Holds the parameter value.

Table 1-50 describes the return name lists.

Table 1-50 Return name lists

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
DueAmount	decimal	4	Mandatory	The amount that the subscriber is due to pay on the App system.
BalanceAmount	xsd:int	4	Optional	Subscriber's balance on the App system. If there is no subscriber's balance on the App system, you need confirm it with the Mobile Money system.
MinDueAmount	xsd:string	4	Optional	The minimum amount that the subscriber is due to pay on the App system. If there is no minimum due on App system, you need confirm it with the Mobile Money system.
Narration	xsd:string	140	Optional	Any text that the vendor would like to display to the subscriber.
ProcessingNumber	xsd:string	140	Optional	The identifier of the transaction echoed back.
StatusCode	xsd:string	2	Optional	A predetermined code to determine the status of the transaction.
ThirdPartyAcctRef	xsd:string	140	Optional	Subscriber's account number on the App system. The SDP will fill this parameter as the same value which was received from **AcctRef** in the request.
StatusDesc	xsd:string	140	Optional	The App system supplied description of the response code.

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
CurrCode	xsd:string	3	Optional	The currency, as an ISO 4217 formatted string.

1.5.5 Error Codes for QueryThirdPartyAccount

The App returns error codes to the SDP when an exception occurs in response to QueryThirdPartyAccountRequest messages. The error codes are defined by partners.
The following table describes QueryThirdPartyAccount error codes that the partners may return upon an exception.

Table 1-51 QueryThirdPartyAccount error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Fundamo userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
103	Duplicate transaction id.

1.6 APIs for notifying requestPaymentCompleted

1.6.1 Process

Figure 1-6 shows the process of notifying requestPayment completed.

Figure 1-6 Process of notifying requestPayment completed
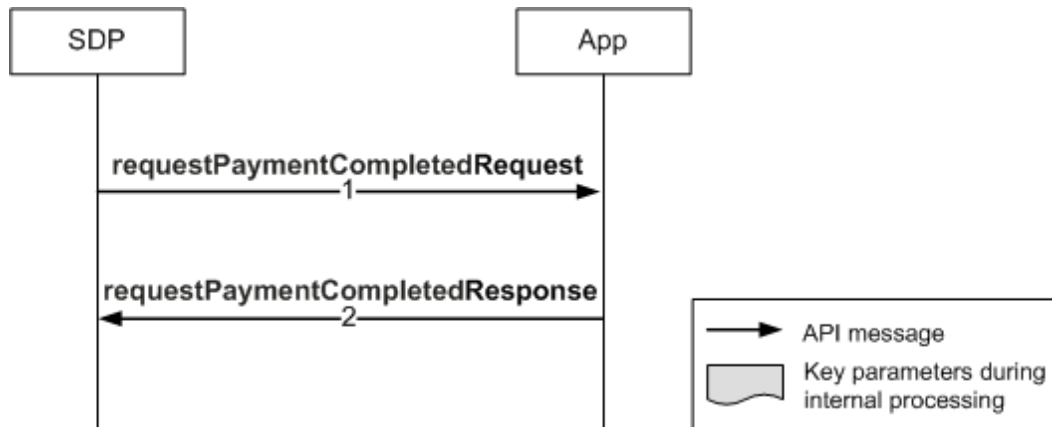
Table 1-52 describes the process.

Table 1-52 Description for the process of notifying requestPayment completed

Step	Description
1	The SDP sends requestPaymentCompleted request to inform the App the result of the requestPayment in case asynchronism requestPayment.
2	The APP processes the requestPaymentCompleted request and sends a response to the SDP.

1.6.2 requestPaymentCompleted

Function

The SDP invokes the requestPaymentCompleted API to inform the App the result of the requestPayment. Partners must code the App based on the API field requirements so that the App can correctly parse and respond to requests received from the SDP. The App must send a response to the SDP within 30 seconds.

Request URI

The request URI is the destination URI of requestPaymentCompleted messages sent by the SDP to the App. The URI is defined by the App.

1.6.3 Request for requestPaymentCompleted

The SDP functions as the client and sends a requestPaymentCompleted request message to the App to inform the App the result of the requestPayment.

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Example

```
POST / HTTP/1.1
SOAPAction: ""
Content-Type: text/xml; charset=UTF-8
Host: 10.135.163.33:17309
Connection: close
Content-Length: 880

<?xml version="1.0" encoding="utf-8" ?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Header>
    <ns1:NotifySOAPHeader xmlns:ns1="http://www.huawei.com.cn/schema/common/v2_1">
      <ns2:traceUniqueID
xmlns:ns2="http://www.csapi.org/schema/momopayment/local/v1_0">5040215034114102818182200013006</n
s2:traceUniqueID>
    </ns1:NotifySOAPHeader>
  </soapenv:Header>
  <soapenv:Body>
    <ns3:requestPaymentCompleted
xmlns:ns3="http://www.csapi.org/schema/momopayment/local/v1_0">
      <ns3:ProcessingNumber>2713500010003</ns3:ProcessingNumber>
      <ns3:MOMTransactionID>2713500010002</ns3:MOMTransactionID>
      <ns3:StatusCode>01</ns3:StatusCode>
      <ns3:StatusDesc>This is a respone Message!</ns3:StatusDesc>
      <ns3:ThirdPartyAcctRef>http://www.qwe.com</ns3:ThirdPartyAcctRef>
    </ns3:requestPaymentCompleted>
  </soapenv:Body>
</soapenv:Envelope>
```

Message Header Parameters

Table 1-53 describes parameters in a requestPaymentCompleted message header.

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Table 1-53 Parameters in a requestPaymentCompleted message header

Parameter	Type	Length	Level of Requirement	Description
traceUniqueID	xsd:string	30	Mandatory	Transaction ID. The ID is automatically generated by the SDP and is used only to trace messages during the SDP commissioning. The App ignores this parameter. [Example] 100001200101110623021721000011

Message Body Parameters

Table 1-54 describes parameters in a requestPaymentCompleted request message body.

Table 1-54 Parameters in a requestPaymentCompleted request message body

Parameter	Type	Length	Level of Requirement	Description
ProcessingNumber	xsd: string	140	Mandatory	"ProcessingNumber" which came in requestPayment request.
MOMTransactionID	xsd: string	140	Mandatory	An Id to uniquely identify the transaction on the Mobile Money system.
StatusCode	xsd: string	10	Mandatory	A predetermined code to determine the status of the transaction.
StatusDesc	xsd: string	140	Optional	The Mobile Money system supplied description of the response code.
ThirdPartyAcctRef	xsd: string	140	Mandatory	"AcctRef" which came in requestPayment request.
extensionInfo	NamedParameterList	-	Optional	Extended parameter. Reversed, not used now.

Table 1-55 describes the parameter structure of the NamedParameterList type.

Table 1-55 Parameter structure of the NamedParameterList type

Parameter	Type	Length	Level of Requirement	Description
item	NamedParam	-	Optional	List of extended parameters.

Parameter	Type	Length	Level of Requirement	Description
	eter[ ]			

Table 1-56 describes the parameter structure of the NamedParameter type.

Table 1-56 Parameter structure of the NamedParameter type

Parameter	Type	Length	Level of Requirement	Description
key	xsd:string	100	Mandatory	Name of the extended parameter.
value	xsd:string	512	Mandatory	Value of the extended parameter.

1.6.4 Response for requestPaymentCompleted

The App functions as the server, processes requestPaymentCompleted messages received from the SDP, and sends requestPaymentCompletedResponse messages to the SDP.

This topic provides a success response example. If a request fails, the SDP sends an error response that contains an error code. For details about error responses, see 1.7 "API Error Responses."

Example

```
HTTP/1.1 200 OK
Content-Type: text/xml;charset=utf-8
Content-Length: 1142
SOAPAction: ""

<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <requestPaymentCompletedResponse
xmlns="http://www.csapi.org/schema/momopayment/local/v1_0">
      <result>
        <resultCode xmlns="">00000000</resultCode>
        <resultDescription xmlns="">success</resultDescription>
      </result>
      <extensionInfo>
        <item xmlns="">
          <key>result</key>
          <value>success</value>
        </item>
      </extensionInfo>
    </requestPaymentCompletedResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

Message Body Parameters

Table 1-57 describes parameters in a requestPaymentCompletedResponse message body.

Table 1-57 Parameters in a requestPaymentCompletedResponse message body

Parameter	Type	Length	Level of Requirement	Description
result	Result	-	Mandatory	Result
extensionInfo	NamedParameterList	-	Optional	Extended parameter. Reversed, not used now.

Table 1-58 describes the parameter structure of the Result type.

Table 1-58 Parameter structure of the Result type

Parameter	Type	Length	Level of Requirement	Description
resultCode	xsd:string	10	Mandatory	Return code; 00000000 means success.
resultDescription	xsd:string	512	Optional	the description of the resultCode

1.6.5 Error Codes for requestPaymentCompleted

The App returns error codes to the SDP when an exception occurs in response to requestPaymentCompleted messages. The error codes are defined by partners.
Table 1-59 describes requestPaymentCompleted error codes that the partners may return upon an exception.

Table 1-59 requestPaymentCompleted error codes

Error Code	Description
00000000	Success
00000001	No data found
10000001	Authentication failed
10000002	Invalid Parameter:%1. %1 indicates parameter name
10000003	Request Rate Limited
10000099	Service Error

1.7 API Error Responses

When an error occurs, the server sends an error response to the client. This topic provides an error response example and describes parameters in the response.

Example

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
    <ns1:processRequestResponse xmlns:ns1="http://b2b.mobilemoney.mtn.zm_v1.0">
      <return>
        <name>ProcessingNumber</name>
        <value>555</value>
      </return>
      <return>
        <name>ThirdPartyAcctRef</name>
        <value>444</value>
      </return>
      <return>
        <name>senderID</name>
        <value>MOM</value>
      </return>
      <return>
        <name>StatusCode</name>
        <value>222</value>
      </return>
      <return>
        <name>StatusDesc</name>
        <value>333</value>
      </return>
      <return>
        <name>MOMTransactionID</name>
        <value>111</value>
      </return>
    </ns1:processRequestResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

Message Body Parameters

Table 1-15, Table 1-22, Table 1-37, and Table 1-48 define the fields in an error response sent by the server to the client.

02

HTTP APIs

2.1 Overviews

2.1.1 MT Message Header

Request Message Header Parameters

Table 2-1 describes the parameters in a MT request message header. When the 3rd Party invokes APIs exposed by the SDP, MT Message Header must present. MT Message Header is not available for following APIs: getfinancialresourceinformation, preapprovalcompleted, verifyfinancialresourceinformation, withdraw.

Table 2-1 parameters in a MT request message header

Header Field	Paramet er	Type	Length	Level of Require ment	Description
Authoriza tion	/	String	10	Mandator y	Authentication mode. The SDP uses the WSSE authentication mode, in which the **realm** and **profile** parameters are involved. **NOTE** The **Authorization** value indicates the policy used by the SDP to perform authentication at the application layer. The SDP authenticates a third-party in WSSE UsernameToken mode. [Example] WSSE
	realm	String	20	Mandator y	Set it to **SDP**. [Example] SDP
	profile	String	20	Mandator y	SDP access mechanism. Set it to **UsernameToken**. [Example] UsernameToken

Header Field	Paramet er	Type	Length	Level of Require ment	Description
X-WSSE	/	String	30	Mandator y	WSSE authentication flag. To enable the SDP to perform authentication at the application layer in the WSSE UsernameToken mode, set this parameter to **UsernameToken**. [Example] UsernameToken
	Usernam e	String	21	Mandator y	Partner ID. The ID is automatically allocated by the SDP to partners after successful registration. To obtain the ID: • A service Partner and API Partner can log in to the SDP Management Portal and query account information, or log in to the mailbox used for registration and view the email notification received after successful registration. • A Developer can log in to the Developer Portal and query account information, or log in to the mailbox used for registration and view the email notification received after successful registration. [Example] 2340110001412

	Passwor dDigest	String	100	Mandator y	Authentication key for the SDP to authenticate partners.
					
					The value is a character string encrypted. The encryption formula is as follows:
					
					• SHA-256: PasswordDigest = Base64(SHA-256(Nonce + Created + Password))
					
					• SHA-1: PasswordDigest = Base64(SHA-1(Nonce + Created + Password))
					
					In the formula:
					
					• **Nonce** and **Created**: random number and its generation time.
					
					• **Password**: password for partners to access the SDP.
					
					  – A service Partner and API Partner can obtain the password from the email notification received after successful registration.
					
					  – A Developer can log in to the Developer Portal, choose **Member Center** > **Account** > **Registration Information** > **Invoke Password**, and set the password.

2 HTTP APIs

Header Field	Paramet er	Type	Length	Level of Require ment	Description
					📖 **NOTE** To retain features of earlier versions, the SP uses the SHA-1 algorithm in the connection to the SDP, which might cause security risks. [Example] 206D88BB7F3D154B130DD6E1E0B8828B
	Nonce	String	30	Mandator y	Random number generated by SDP when sending a message. [Example] 66C92B11FF8A425FB8D4CCFE0ED9ED1F
	Created	String	20	Mandator y	UTC time when the **Nonce** value is generated. [Format] yyyy-MM-dd'T'HH:mm:ss'Z' [Example] 2011-03-22T13:47:56Z
X-Reque stHeader	/	String	10	Mandator y	Type of the message sent by a third party. Set it to **request**. [Example] request
	ServiceId	String	21	Condition al	Service ID. The ID is automatically allocated by the SDP to services after successful release. A service Partner can log in to the SDP Management Portal and query service information for the ID. The **serviceId** must be contained during invocation of a service interface developed by service partners and other partners, and must not be contained during invocation of a capability interface developed by API partners, other partners, and developers. [Example] 35000001000001
	TransId	String	30	Mandator y	Transaction ID. The ID is automatically generated by the SDP and is used only to trace messages during the SDP commissioning. The App ignores this parameter. [Example] 1000012001011106230217210000011

Header Field	Parameter	Type	Length	Level of Requirement	Description
	LinkId	String	20	Conditional	Service order ID. The ID is automatically generated by the SDP when a user orders a service in the SDP. This parameter is mandatory during service ordering by SMS message. [Example] 12345678901111
	FA	xsd:string	30	Mandatory	Mobile number or the fake ID of the charged party. [Example] • Mobile number: 8612312345678 • Fake ID: f-245-11900000007639
Cookie	sessionid	String		Conditional	The session id is used as a cookie in the HTTP header in the requests towards the Mobile Money Manager when the Partner use **Login/Logout** mode. [Example] default8fcee064690b45faa9f8f6c7e21c5e5a **NOTE** Cookie is valid only for ECW and not for fundamo.
Msisdn	/	String		Mandatory	A valid unique MSISDN of the user. [Format] Countrycode + MSISDN number [Example] 23415905193050
Signature	/	String		Conditional	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF
X-HW-Extension	/	/	/	Optional	Extension field. [Format] key1=value1;key2=value2
destPartnerId	/	String	21	Conditional	For A2A scenario, it indicates the identifier of the destination partner.

Response Message Header Parameters

Table 2-2 describes the parameters in a MT response message header.

Table 2-2 parameters in a MT response message header

Header Field	Parameter	Type	Length	Level of Requirement	Description
WWW-Authenticate	/	String	10	Mandatory	Authentication mode. The SDP uses the WSSE authentication mode, in which the **realm** and **profile** parameters are involved. **NOTE** The **Authorization** value indicates the policy used by the SDP to perform authentication at the application layer. The SDP authenticates a third-party in WSSE UsernameToken mode. [Example] WSSE
	realm	String	20	Mandatory	Set it to **SDP**. [Example] SDP
	profile	String	20	Mandatory	SDP access mechanism. Set it to **UsernameToken**. [Example] UsernameToken
Set-Cookie	sessionid	String		Conditional	The Cookie of the response message when the Partner invokes the **Login** interface. [Example] default1937332605ff4d27a1108f424ade0715
Signature	/	String		Conditional	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF
X-HW-Extension	/	/	/	Optional	Extension field. [Format] key1=value1;key2=value2

2.1.2 MO Message Header

Request Message Header Parameters

Table 2-3 describes the parameters in a MO request message header. When the SDP sends notification messages to the 3rd party, MO Message Header will present. MO Message Header is only available for following APIs: getfinancialresourceinformation, preapprovalcompleted, verifyfinancialresourceinformation, withdraw.

Table 2-3 parameters in a MO request message header

Header Field	Parameter	Type	Length	Level of Requirement	Description
Authorization	/	String	10	Mandatory	Authentication mode. The SDP uses the WSSE authentication mode, in which the **realm** and **profile** parameters are involved. **NOTE** The **Authorization** value indicates the policy used by the SDP to perform authentication at the application layer. The SDP authenticates a third-party in WSSE UsernameToken mode. [Example] WSSE
	realm	String	20	Mandatory	Set it to **SDP**. [Example] SDP
	profile	String	20	Mandatory	SDP access mechanism. Set it to **UsernameToken**. [Example] UsernameToken
X-WSSE	/	String	30	Mandatory	WSSE authentication flag. To enable the SDP to perform authentication at the application layer in the WSSE UsernameToken mode, set this parameter to **UsernameToken**. [Example] UsernameToken
	Username	String	21	Mandatory	Partner ID. The ID is automatically allocated by the SDP to partners after successful registration. To obtain the ID: • A service Partner and API Partner can log in to the SDP Management Portal and query account information, or log in to the mailbox used for registration and view the email

Header Field	Parameter	Type	Length	Level of Requirement	Description
					notification received after successful registration.
					• A Developer can log in to the Developer Portal and query account information, or log in to the mailbox used for registration and view the email notification received after successful registration.
					[Example]
					2340110001412
	PasswordDigest	String	100	Mandatory	Authentication key for the SDP to authenticate partners.
					The value is a character string encrypted. The encryption formula is as follows:
					• SHA-256: PasswordDigest = Base64(SHA-256(Nonce + Created + Password))
					• SHA-1: PasswordDigest = Base64(SHA-1(Nonce + Created + Password))
					In the formula:
					• **Nonce** and **Created**: random number and its generation time.
					• **Password**: password for partners to access the SDP.
					– A service Partner and API Partner can obtain the password from the email notification received after successful registration.
					– A Developer can log in to the Developer Portal, choose **Member Center** > **Account** > **Registration Information** > **Invoke Password**, and set the password.
					📖 **NOTE**
					To retain features of earlier versions, the SP uses the SHA-1 algorithm in the connection to the SDP, which might cause security risks.
					[Example]
					206D88BB7F3D154B130DD6E1E0B8828B
	Nonce	String	30	Mandatory	Random number generated by SDP when sending a message.
					[Example]
					66C92B11FF8A425FB8D4CCFE0ED9ED1F
	Created	String	20	Mandatory	UTC time when the **Nonce** value is generated.
					[Format]

Header Field	Paramet er	Type	Length	Level of Require ment	Description
					yyyy-MM-dd'T'HH:mm:ss'Z' [Example] 2011-03-22T13:47:56Z
X-NotifyH eader	/	String	10	Mandator y	Type of the message sent by the SDP. Set it to **notify**. [Example] notify
	TransId	String	30	Mandator y	Transaction ID. The ID is automatically generated by the SDP and is used only to trace messages during the SDP commissioning. The App ignores this parameter. [Example] 100001200101110623021721000011
	LinkId	String	20	Condition al	Service order ID. The ID is automatically generated by the SDP when a user orders a service in the SDP. This parameter is mandatory during service ordering by SMS message. [Example] 12345678901111
Signature	/	String		Condition al	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF
X-HW-Ex tension	/	/	/	Optional	Extension field. [Format] key1=value1;key2=value2

Response Message Header Parameters

Table 2-4 describes the parameters in a MO response message header.

Table 2-4 parameters in a MO response message header

Header Field	Paramet er	Type	Length	Level of Require ment	Description
WWW-A uthentica te	/	String	10	Mandator y	Authentication mode. The SDP uses the WSSE authentication mode, in which the **realm** and **profile** parameters are involved. **NOTE** The **Authorization** value indicates the policy used by the SDP to perform authentication at the application layer. The SDP authenticates a third-party in WSSE UsernameToken mode. [Example] WSSE
	realm	String	20	Mandator y	Set it to **SDP**. [Example] SDP
	profile	String	20	Mandator y	SDP access mechanism. Set it to **UsernameToken**. [Example] UsernameToken
Signature	/	String		Condition al	Signature. The field indicates the summary when the Partner uses HMAC security mode. [Example] 43AD232FD45FF
X-HW-Ex tension	/	/	/	Optional	Extension field. [Format] key1=value1;key2=value2

2.1.3 MO Message Header for A2A Scenario

For A2A scenario, when the 3rd Party invokes APIs exposed by the SDP, these headers must present. These headers are only available for following APIs:
validateaccountholder,getfinancialresourceinformation,verifyfinancialresourceinformation,preapprovalcompleted,withdraw

Request Message Header Parameters

Parameter	Type	Length	Level of Requirement	Description
version	String	5	Mandatory	Protocol version number. Set this parameter to **1.0**.
traceUniqueID	String	30	Mandatory	Message ID. Value of **traceUniqueID** is in the format *AAAAAAAXXXXBBBBBBBBBBBBCCCCDDD*, which consists of 30 digits. *AAAAAAA* indicates the type of the first component or module that generates **traceUniqueID**. The value of *AAAAAAA* is the same as the ID of the product module. Prefix the module ID of less than 7 digits with zeros. *XXXX*: identifies a node of the component that generates **traceUniqueID** if the component is deployed in a cluster. The value is the sum of the four octets of the IP address for the node. Assume that the IP address of a node is 192.168.10.2. The value of *XXXX* is **0372**. *BBBBBBBBBBBB:* dynamically generated by the first component that generates **traceUniqueID**. The entry component must ensure that the value of **traceUniqueID** is unique in different messages. It is recommended that **BBBBBBBBBBBB** should be generated as *YYMMDDHHMMSS*, where YY indicates the year, such as 09; the first MM indicates the month, such as 08; DD indicates the day, such as 31; HH indicates the hour, such as 13; the second MM indicates the minute, such as 31; SS indicates the second, such as 31. *CCCC*: indicates the serial number that begins with 0001. The component that generates **traceUniqueID** needs to check whether the first 23 digits of a service process are the same. If yes, the component distinguishes the service process by using *CCCC*. The value of *CCCC* ranges from 0001 to 9999 (assume that a maximum of 9999 service

| Paramet er	Type	Length	Level of Requirement	Description
				operations can be performed in a second).
				• *DDD*: indicates the serial number of the message. The value of *DDD* in **traceUniqueID** generated by the first component is **001**. Otherwise, increase the value of *DDD* in **traceUniqueID** by **1**.
sourceDe viceType	Int4	4	Mandatory	SP type. This parameter has a fixed value of **110000**.
sourceDe viceCode	String	21	Mandatory	SP ID.
destDevi ceType	Int4	4	Mandatory	SAG type. This parameter has a fixed value of **1000**.
destDevi ceCode	String	21	Mandatory	SAG ID. This parameter has a fixed value of **1000**.
authentic atorSour ce	String	256	Optional	Access password of the SP. The password encryption formula is as follows: MD5(SPID+PASSWORD+TIMESTAMP)
timeStam p	String	14	Optional	Time stamp in the format *YYYYMMDDHHMMSS*. The time must be UTC time.
destPartn erId	String	10	Mandatory	For an A2A scenario, it indicates the identifier of the destination partner.
extension	String	100	Optional	Extended field. [Format] key1=value1;key2=value2

2.2 Account Validation & Information

2.2.1 login

Process

Figure 2-1 Process of login
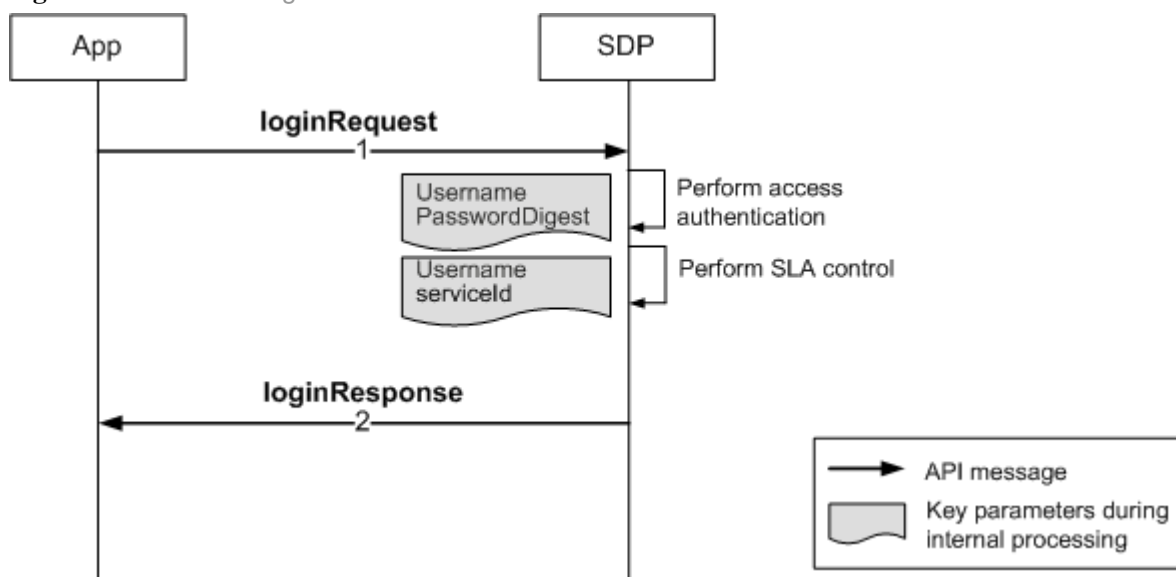
Function

Identifying oneself to the system by entering one's credential.

Request URI

The request URI is the destination URI of login messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/login

In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/login HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
```

```
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:loginrequest xmlns:ns2="http://www.ericsson.com/lwac">
    <identity>sp1</identity>
    <credential>
        <secret>ABc123456!</secret>
        <type>password</type>
    </credential>
</ns2:loginrequest>
```

Message Body Parameters

Table 2-5 describes parameters in a message body.

Table 2-5 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
identity	string		Mandatory	Identity of user.
credential	credential		Mandatory	Credential used to verify the users identity.
newcredential	credential		Optional	Used if the credential shall be replaced during login.

Table 2-6 describes parameters of credential.

Table 2-6 Parameters of credential

Parameter	Type	Length	Level of Requirement	Description
secret	string		Mandatory	Credential secret
type	string		Mandatory	Credential type

Response

An empty response indicates success.
A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)
```

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.
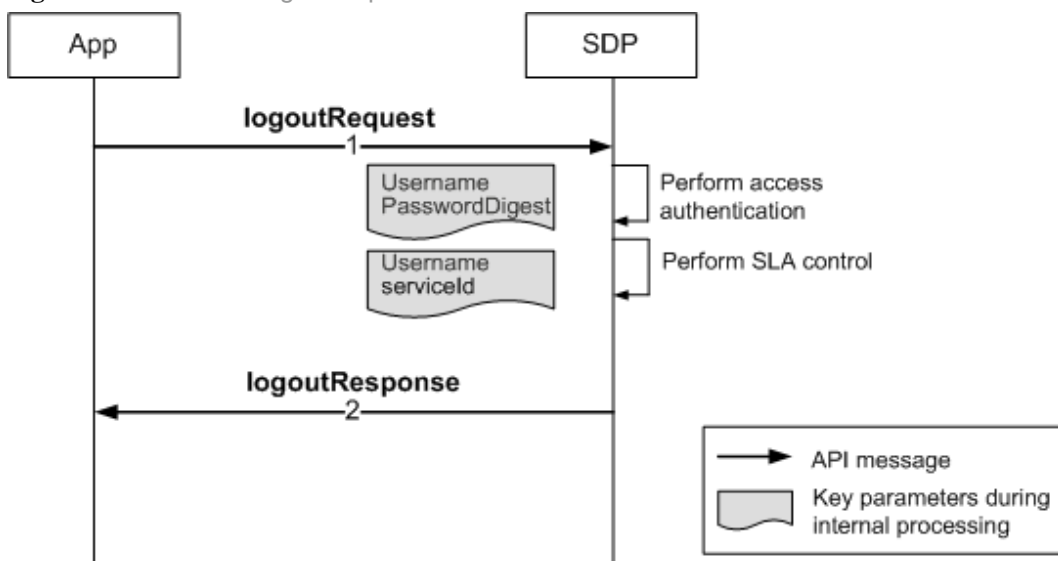
2.2.2 Logout

Process

Figure 2-11 shows the process of logout request.

Figure 2-2 Process of logout request

Function

The APP (functioning as the client) invokes the Logout API to log out to the SDP (functioning as the server).

Request URI

The request URI is the destination URI of Logout messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/logout
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request

The SDP functions as the client and sends a Logout message to the App.

Message Body Example

The message body is empty.

```
POST /mom/mt/logout HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
```

```
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2
```

Message Body Parameters

None

Response

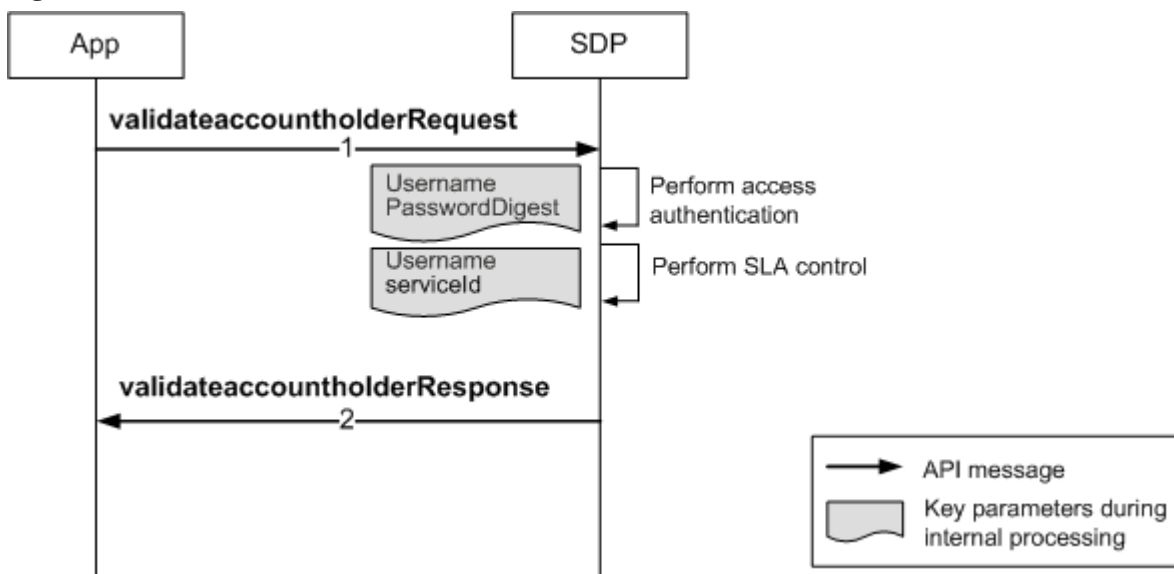An empty response indicates success.
A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)
```

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.2.3 *validateaccountholder*

Process

Figure 2-3 Process of validateaccountholder

Function

This operation is used by the Partner to check if an account holder is registered and active in the system.

Request URI

The request URI is the destination URI of validateaccountholder messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/validateaccountholder
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/validateaccountholder HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<ns2:validateaccountholderrequest xmlns:ns2="http://www.ericsson.com/em/emm/sp/backend">
    <accountholderid>ID:20200009999/MSISDN</accountholderid>
</ns2:validateaccountholderrequest>
```

Message Body Parameters

Table 2-7 describes parameters in a validateaccountholder message body.

Table 2-7 Parameters in a validateaccountholder message body

Parameter	Type	Length	Level of Requirement	Description
accountholderid	string		Mandatory	The identity of the account holder to validate. Parameter cannot be NULL. [Example] ID:46733491234/MSISDN.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<ns2:validateaccountholderresponse xmlns:ns2="http://www.ericsson.com/em/emm/sp/backend">
<valid>true</valid>
</ns2:validateaccountholderresponse>
```

Table 2-8 describes parameters in a response message body.

Table 2-8 Parameters in a validateaccountholder response message body

| Parameter	Type	Length	Level of Requirement	Description
valid	boolean		Mandatory	TRUE means that requested identity is an account holder that can receive any transaction. FALSE: Means that identity either not found or it is not able to receive any transaction. Parameter cannot be NULL.

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.2.4 getfinancialresourceinformation

Process

Figure 2-4 Process of getfinancialresourceinformation
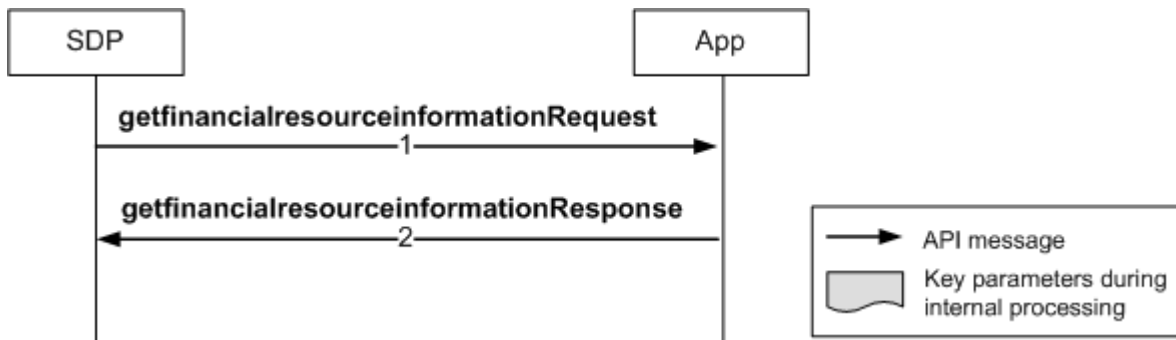
Function

This operation is used to fetch generic data for a specific resource for a customer in the Partner system. The information returned can be any data, such as loan information, electricity meter status, TV subscription details. This can be used as a complement to the getbalance operation, since it only returns a balance. The information in the response is just passed through the system to the end-user requesting it.

Request URI

The request URI is the destination URI of getfinancialresourceinformation messages sent by the SDP to the App. The URI is defined by the App.

Request Message Body Example

```
POST /mom/mo/getreversetransactiondetails HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-NotifyHeader: notify TransId=" 20090324123045100000123456789" , LinkId="A15Y89Z32T99"
Signature:43AD232FD45FF
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<getfinancialresourceinformationrequest xmlns ="http://www.ericsson.com/em/emm/sp/backend" >
```

```
    <resource>123</resource>
    <accountholderid>ID:4673349175/MSISDN</accountholderid>
    <extension>11</extension>
</getfinancialresourceinformationrequest>
```

Message Body Parameters

Table 2-9 describes parameters in a message body.

Table 2-9 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
resource	string		Mandatory	The Financial Resource Identifier of the sending account. Parameter cannot be NULL.
accountholderid	string		Mandatory	The MSISDN identity of the account holder that is performing the operation. For example: ID:46733491234/MSISDN
extension	extensiontype	-	Optional	Used for sending any additional information to Partner. For details about extensiontype, see Table 2-29.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<getfinancialresourceinformationresponse  xmlns ="http://www.ericsson.com/em/emm/sp/backend" >
  <message>11</message>
  <extension>11</extension>
</getfinancialresourceinformationresponse>
```

Table 2-35 describes parameters in a response message body.

Table 2-10 Parameters in a response message body

Parameter	Type	Length	Level of Requirement	Description
message	string	-	Optional	The list of sub transactions for the requested transaction. Contains information describing a single financial instruction For more details about financialinstructiondetails, see Table 2-33.
extension	extensiontype		Optional	Any additional information received from Partner. For details about extensiontype, see Table 2-29.

Error Codes

The App returns error codes to the SDP when an exception occurs in response to getfinancialresourceinformation messages. The error codes are defined by partners.
Table 2-11 describes getfinancialresourceinformation error codes that the partners may return upon an exception.

Table 2-11 getfinancialresourceinformation error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Mobile Money platform userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
103	Duplicate transaction id.

2.2.5 verifyfinancialresourceinformation

Process

Figure 2-5 Process of verifyfinancialresourceinformation
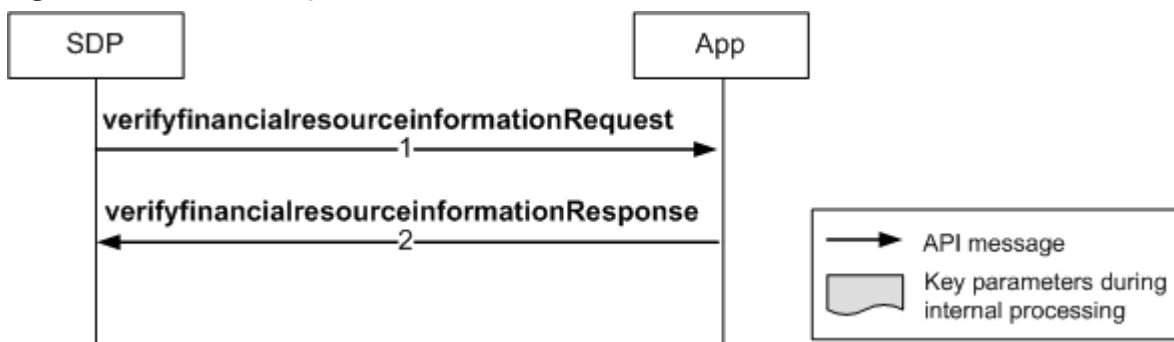
Function

This operation is used to ask the Partner if the account in their system may be linked to the account holders eWallet in the Mobile Money Manager. This is primarily relevant for micro finance services, like loans and savings accounts. Once the Partner confirms the link, this external account is added to the account holder in system, and they can start using this account through operations such as **BalanceRequest** and **Withdrawrequest**.

Request URI

The request URI is the destination URI of verifyfinancialresourceinformation messages sent by the SDP to the App. The URI is defined by the App.

Request Message Body Example

```
POST /mom/mo/getreversetransactiondetails HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-NotifyHeader: notify TransId=" 2009032412304510000000123456789" , LinkId="A15Y89Z32T99"
Signature:43AD232FD45FF
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<ns2:verifyfinancialresourceinformationrequest
xmlns:ns2="http://www.ericsson.com/em/emm/sp/backend">
<resource>FRI:20200009999@savings.sp1/SP</resource>
<accountholderid>ID:20200009999/MSISDN</accountholderid>
</ns2:verifyfinancialresourceinformationrequest>
```

Message Body Parameters

Table 2-12 describes parameters in a message body.

Table 2-12 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
resource	string		Mandatory	The FRI of the account, bill or user in the partner system. Parameter cannot be NULL. For example, FRI:12345ABC@water.company/SP.
accountholderid	string		Mandatory	The MSISDN identity of the account holder. Parameter cannot be NULL. For example: ID:46733491234/MSISDN
extension	extensiontype	-	Optional	Used for sending any additional information to Partner. For details about extensiontype, see Table 2-29.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<ns4:verifyfinancialresourceinformationresponse
xmlns:ns4="http://www.ericsson.com/em/emm/sp/backend">
<valid>true</valid>
<extension/>
</ns4:verifyfinancialresourceinformationresponse>
<
```

Table 2-13 describes parameters in a response message body.

Table 2-13 Parameters in a response message body

Parameter	Type	Length	Level of Requirement	Description
valid	boolean		Mandatory	True if account holder and service resource is valid in Partner system. Parameter cannot be NULL.
extension	extensiontype		Optional	Any additional information received from Partner. For details about extensiontype, see Table 2-29.

Error Codes

The App returns error codes to the SDP when an exception occurs in response to verifyfinancialresourceinformation messages. The error codes are defined by partners.
Table 2-14 describes verifyfinancialresourceinformation error codes that the partners may return upon an exception.

Table 2-14 verifyfinancialresourceinformation error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Mobile Money platform userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
103	Duplicate transaction id.

2.2.6 getaccountholderidentification

Process

Figure 2-6 Process of getaccountholderidentification
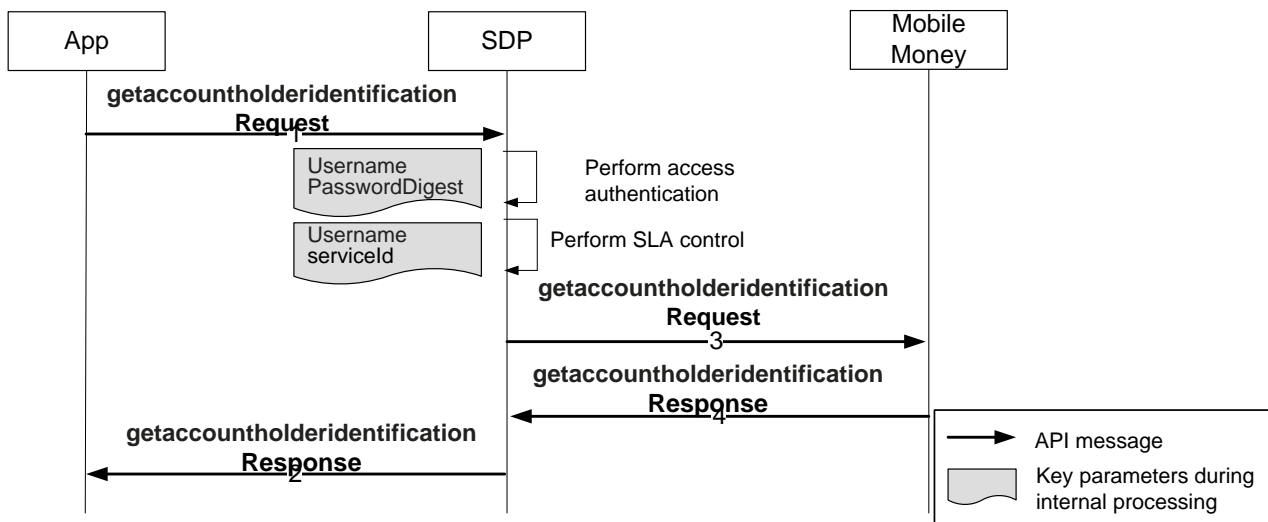
Function

This operation is used by the Partner to query the account holder's identification.

Request URI

The request URI is the destination URI of getaccountholderidentification messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/getaccountholderidentification
In the format, IP and Port indicate the service IP address and HTTP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/getaccountholderidentification HTTP/1.1
Content-Type:text/xml
Content-Length:569
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
```

```
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<ns2:getaccountholderidentificationrequest
xmlns:ns2="http://www.ericsson.com/em/emm/provisioning/v1_0">
   <identity>20200009999</identity>
   <version>1.0</version>
</ns2:getaccountholderidentificationrequest>
```

Message Body Parameters

Table 2-15 describes parameters in a getaccountholderidentification message body.

Table 2-15 Parameters in a getaccountholderidentification message body

Parameter	Type	Length	Level of Requirement	Description
identity	String		Optional	A valid identity associated with the account holder. Validated with IsIdentity. This shall be user's MSISDN.
version	String		Mandatory	Default value 1.0

Response

A success response example:

```
<?xml version="1.0" encoding="UTF-8"?>
<n1:getaccountholderidentificationresponse
xmlns:n1="http://www.ericsson.com/em/emm/provisioning/v1_0">
<identifications>
    <identification>
        <Id>a</Id>
        <IdTp>PASS</IdTp>
    </identification>
    <identification>
        <Id>a</Id>
        <IdTp>PASS</IdTp>
    </identification>
</identifications>
</n1:getaccountholderidentificationresponse>
```

Table 2-16 describes parameters in a response message body.

Table 2-16 Parameters in a getaccountholderidentification response message body

Parameter	Type	Length	Level of Requirement	Description
identifications	Identification-[0…unbounded]		Optional	

Table 2-17 describes parameters in a Identification.

Table 2-17 Parameters in Identification structure

Parameter	Type	Length	Level of Requirement	Description
Id	xsd:string	35	Mandatory	
IdTp	xsd:string	4	Optional	Possible values are: PASS CPFA SRSA NRIN OTHR DRLC SOCS AREG IDCD EMID
XtndedIdTp	xsd:string	350	Optional	Either IdTp or XtndedIdTp will present.

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.3 Approval

2.3.1 preapproval

Process

Figure 2-7 Process of preapproval
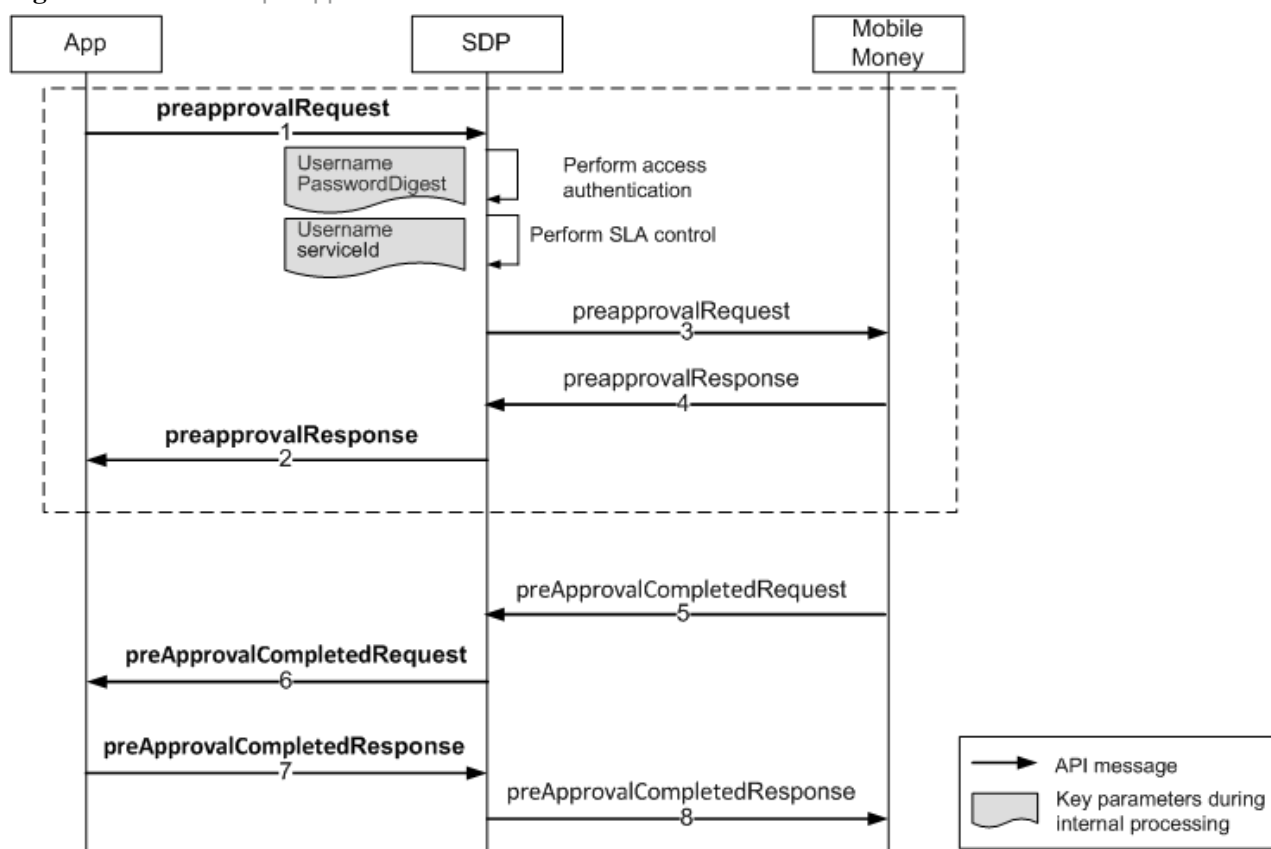
Function

A pre-approval enables a Partner to debit an account holder without the user having to approve each operation separately.

Request URI

The request URI is the destination URI of preapproval messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/preapproval

In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/preapproval HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<ns2:preapprovalrequest xmlns:ns2="http://www.ericsson.com/em/emm/sp/backend">
  <fromfri>ID:2341305205559/MSISDN</fromfri>
  <tofri>ID:2341305205559/MSISDN</tofri>
  <message>abc</message>
</ns2:preapprovalrequest>
```

Message Body Parameters

Table 2-18 describes parameters in a preapproval message body.

Table 2-18 Parameters in a preapproval message body

Parameter	Type	Length	Level of Requirement	Description
fromfri	string		Mandatory	The Financial Resource Identifier of the sending account. Parameter cannot be NULL.
tofri	string		Mandatory	The Financial Resource Identifier of the receiving account. Parameter cannot be NULL.
message	string		Mandatory	Message to the end user. Parameter cannot be NULL.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)
```

```xml
<?xml version="1.0" encoding="UTF-8"?>
<preapprovalresponse xmlns="http://www.ericsson.com/em/emm/sp/backend">
  <preapprovalid>123</preapprovalid>
  <status>APPROVED</status>
</preapprovalresponse>
```

Table 2-19 describes parameters in a preapproval response message body.

Table 2-19 Parameters in a preapproval response message body

Parameter	Type	Length	Level of Requirement	Description
preapprovalid	long		Mandatory	The identity of the preapproval. Parameter cannot be NULL.
status	preapproval status	-	Mandatory	The status of the preapproval. Parameter cannot be NULL. [Enumeration] • PENDING • APPROVED • REJECTED • EXPIRED

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.3.2 getPreApprovalStatus

Process

Figure 2-8 Process of getPreApprovalStatus
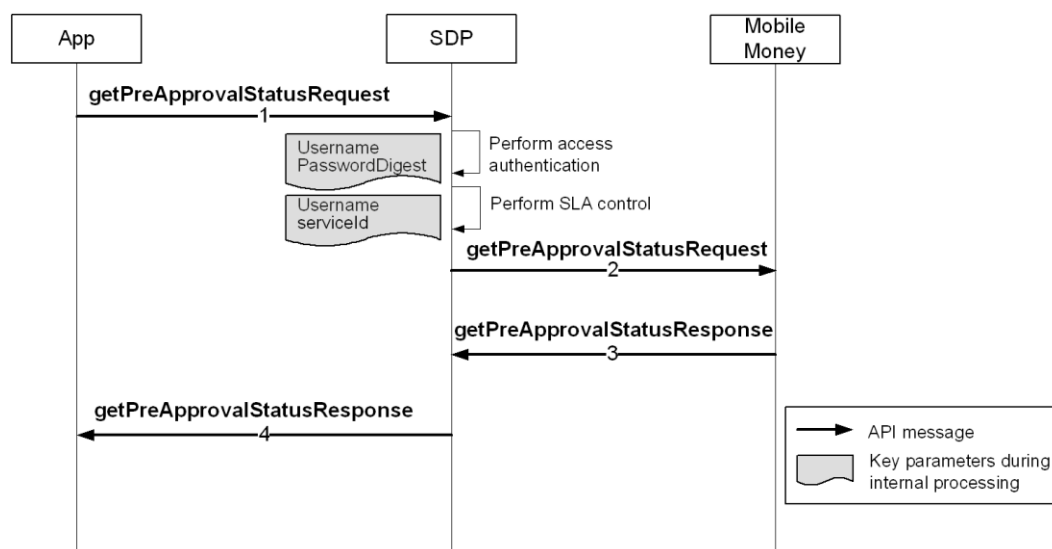
Function

It is used by the Partner to fetch the status of a previously sent PreApprovalRequest.

Request URI

The request URI is the destination URI of getPreApprovalStatus messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/getPreApprovalStatus
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/getPreApprovalStatus HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
```

```
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<ns2:getpreapprovalstatusrequest xmlns:ns2="http://www.ericsson.com/em/emm">
  <preapprovalid>12.23</preapprovalid>
  <fromfri>REPORT</fromfri>
  <tofri>SUMMARY</tofri>
</ns2:getpreapprovalstatusrequest>
```

Message Body Parameters

Table 2-20 describes parameters in a message body.

Table 2-20 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
preapprovalid	long		Mandatory	ID of the pre-approval request. Parameter cannot be NULL.
fromfri	string		Mandatory	The Financial Resource Identifier of the sending account. Parameter cannot be NULL. Validated with IsFRI.
tofri	string		Mandatory	The Financial Resource Identifier of the receiving account. Parameter cannot be NULL. Validated with IsFRI.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<getpreapprovalstatusresponse xmlns="http://www.ericsson.com/em/emm">
  <status>1</status>
</getpreapprovalstatusresponse>
```

Table 2-21 describes parameters in a response message body.

Table 2-21 Parameters in a response message body

| Parameter	Type	Length	Level of Requirement	Description
status	preapproval status	-	Mandatory	Current status of the preapproval. Parameter cannot be NULL. [Enumeration] • PENDING • APPROVED • REJECTED • EXPIRED

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.3.3 preapprovalcompleted

Process

Figure 2-9 Process of preapprovalcompleted
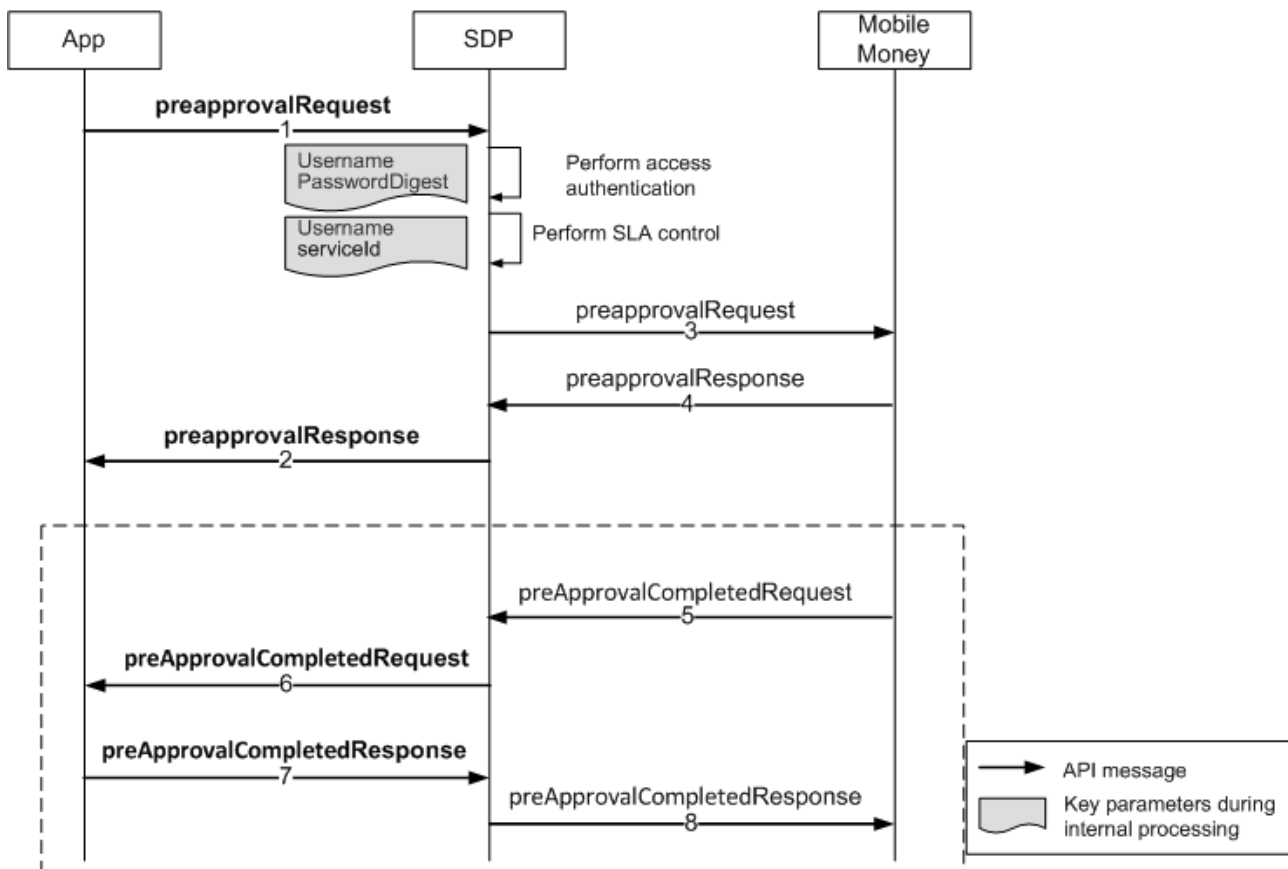
Function

The Mobile Money Manager will send this request to the Service Provider when the user has confirmed the approval, or if the pre-approval has expired.

Request URI

The request URI is the destination URI of preapprovalcompleted messages sent by the SDP to the App. The URI is defined by the App.

Request Message Body Example

```
POST /mom/mo/getreversetransactiondetails HTTP/1.1
Content-Type:text/xml
Content-Length:1069
```

```
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-NotifyHeader: notify TransId=" 200903241230451000000123456789" , LinkId="A15Y89Z32T99"
Signature:43AD232FD45FF
X-HW-Extension: k1=v1;k2=v2

<preapprovalcompletedrequest xmlns=" http://www.ericsson.com/em/emm/sp/backend">
   <preapprovalid>1.2</preapprovalid>
   <status>PENDING</status>
   <receiverinfo>
      <fri>123</fri>
      <name>12</name>
      <msisdn>12</msisdn>
      <emailadresses>
         <email>12</email>
      </emailadresses>
   </receiverinfo>
</preapprovalcompletedrequest>
```

Message Body Parameters

Table 2-22 describes parameters in a message body.

Table 2-22 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
preapprovalid	long		Mandatory	ID of the preapproval. Parameter cannot be NULL.
status	preapprovalstatus		Mandatory	Current status of the preapproval. Parameter cannot be NULL. [Enumeration] • PENDING • APPROVED • REJECTED • EXPIRED
receiverinfo	receiverinfo	-	Mandatory	Information about the receiving party. Parameter cannot be NULL. For more details about receiverinfo, see Table 2-23.

Table 2-23 describes parameters in receiverinfo.

Table 2-23 Parameters in receiverinfo

Parameter	Type	Length	Level of Requirement	Description
fri	string		Mandatory	FRI for receivers account to which the amount was credited.
name	string		Optional	Name of receiving party.
msisdn	string	-	Optional	MSISDN of receiving party.
email	list<emailaddress>		Optional	Email addresses of receiving party. For more details about list<emailaddress>, see Table 2-24.
language	string		Optional	Preferred language code.

Table 2-24 describes parameters in list<emailaddress>.

Table 2-24 Parameters in list<emailaddress>

Parameter	Type	Length	Level of Requirement	Description
address	string	-	Optional	Validated with IsEmail.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<preapprovalcompletedresponse xmlns="http://www.ericsson.com/em/emm/sp/backend"/>
```

Table 2-19 describes parameters in a response message body.

Error Codes

The App returns error codes to the SDP when an exception occurs in response to preapprovalcompleted messages. The error codes are defined by partners.
Table 2-25 describes preapprovalcompleted error codes that the partners may return upon an exception.

Table 2-25 Preapprovalcompleted error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Mobile Money platform userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
103	Duplicate transaction id.

2.3.4 cancelpreapproval

Process

Figure 2-10 Process of cancelpreapproval
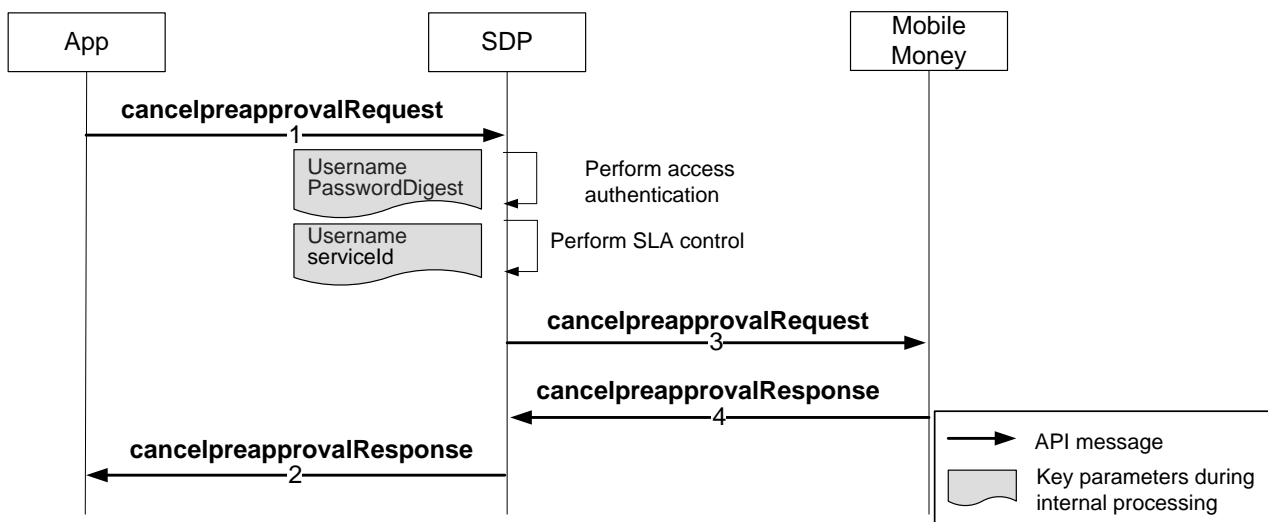
Function

The App can invoke this API to cancel one or all pre-approvals for the logged in account holder.

Request URI

The request URI is the destination URI of cancelpreapproval messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/cancelPreApproval

In the format, IP and Port indicate the service IP address and HTTP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/cancelPreApproval HTTP/1.1
Content-Type:text/xml
Content-Length:569
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-NotifyHeader: notify TransId=" 2009032412304510000000123456789" , LinkId="A15Y89Z32T99"
X-HW-Extension: k1=v1;k2=v2
Signature:43AD232FD45FF

<?xml version="1.0" encoding="UTF-8"?>
<fr:cancelpreapprovalrequest
xmlns:fr="http://www.ericsson.com/em/emm/serviceprovider/v1_0/frontend" version="1.0">
   <identity>identity0</identity>
   <fri>fri0</fri>
   <preapprovalid>preapprovalid0</preapprovalid>
</fr:cancelpreapprovalrequest>
```

Message Body Parameters

Table 2-26 describes parameters in a message body.

Table 2-26 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
identity	string		Optional	The account holder's internal identity. If set, all pre-approvals for this account holder will be cancelled. Only a logged in user with permission ROLE_CANCEL_ANY_PREAPPRO VAL can cancel all pre-approvals for a specific account holder..
fri	string		Optional	The FRI to cancel all pre-approvals from. If no FRI, and no pre-approval identity is supplied, then all

Parameter	Type	Length	Level of Requirement	Description
				pre-approvals for the logged in user are cancelled.
preapprovalid	string		Optional	Omit to cancel more than one pre-approval.

Response

A success response example:

```
<?xml version="1.0" encoding="UTF-8"?>
<fr:cancelpreapprovalresponse
xmlns:fr="http://www.ericsson.com/em/emm/serviceprovider/v1_0/frontend"/>
```

Error Codes

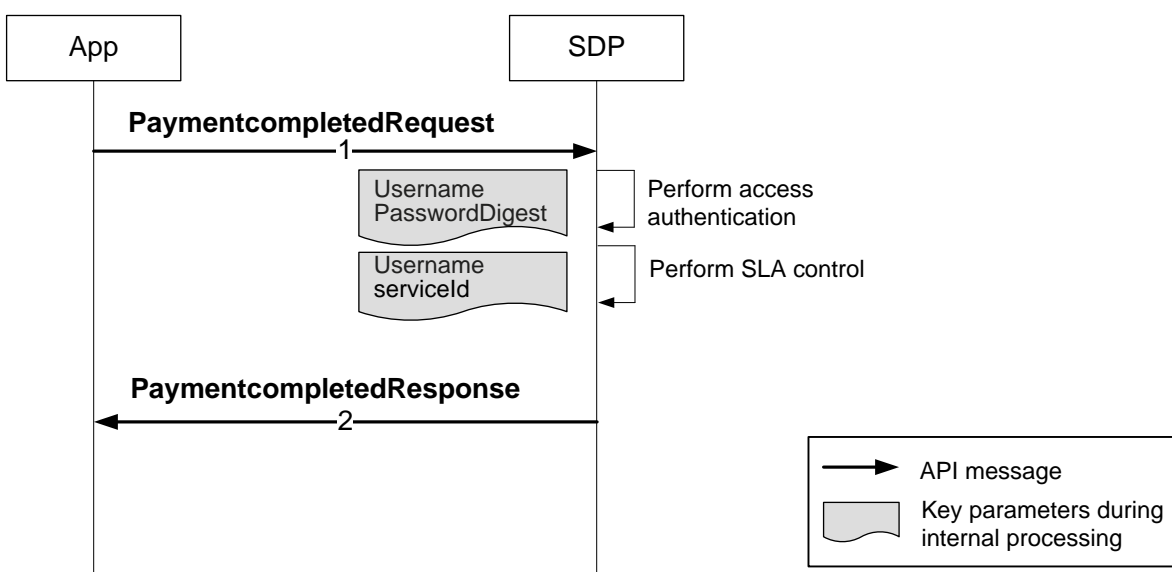For details about the error codes, see 2.7 API Error Response.

2.4 Transaction Details

2.4.1 Paymentcompleted

Process

Figure 2-11 shows the process of notifying about the completion of a previously initiated payment request.

Figure 2-11 Process of notifying about the completion of a previously initiated payment request

2 HTTP APIs

Function

The APP (functioning as the client) invokes the Paymentcompleted API to notify about the completion of a previously initiated payment request to the SDP (functioning as the server).
Partners must code the App based on the API field requirements so that the App can send correct requests to the SDP. The SDP must send a response within 180 seconds by default.

Request URI

The request URI is the destination URI of Paymentcompleted messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/paymentcompleted
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request

The SDP functions as the client and sends a Paymentcompleted message to the App to query account balance.

Message Body Example

```
POST /mom/mt/paymentcompleted HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 200903241230451000000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns4:paymentcompletedrequest xmlns:ns4="http://www.ericsson.com/em/emm/sp/backend">
<transactionid>2110266</transactionid>
<providertransactionid>1351061132147</providertransactionid>
<newbalance>
    <amount>110</amount>
    <currency>RWF</currency>
</newbalance>
<paymenttoken>ABCDEF</paymenttoken>
<message>Your payment has been performed.</message>
<status>COMPLETED</status>
</ns4:paymentcompletedrequest>
```

Message Body Parameters

Table 2-27 describes parameters in a Paymentcompleted message body.

Table 2-27 Parameters in a Paymentcompleted message body

Parameter	Type	Length	Level of Requirement	Description
transactionid	long		Mandatory	System internal transaction id. Parameter cannot be NULL.
providertransactionid	string		Mandatory	Service provider transaction id.
newbalance	moneydetailstype	-	Optional	Balance of the account at the Partner. For details about moneydetailstype, see Table 2-28.
paymenttoken	string		Optional	Partner payment token.
message	string		Optional	A message to the account holder that made the payment.
status	paymentstatus	-	Mandatory	The status of the payment. Parameter cannot be NULL. [Enumeration] • PENDING • COMPLETED • FAILED
extension	extensiontype	-	Optional	Used for sending any additional information to front end access module. For details about extensiontype, see Table 2-29.

Table 2-28 describes the parameter structure of the moneydetailstype.

Table 2-28 Parameter structure of moneydetailstype

Parameter	Type	Length	Level of Requirement	Description
amount	decimal		Mandatory	The monetary amount. Parameter cannot be NULL.

currency	string		Mandatory	The currency, as an ISO 4217 formatted string. Parameter cannot be NULL.

Table 2-29 describes the extensiontype.

Table 2-29 Parameter extensiontype

name	value			
Parameter	**Type**	**Length**	**Level of Requirement**	**Description**
any	list<object>	-	Optional	Use to send any other information.

Response

An empty response indicates success.
A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: xxx
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns4:paymentcompletedresponse xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:op="http://www.ericsson.com/em/emm/common"
xmlns:ns4="http://www.ericsson.com/em/emm/sp/backend"/>
```

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.4.2 gettransactionstatus

Process

Figure 2-12 Process of gettransactionstatus
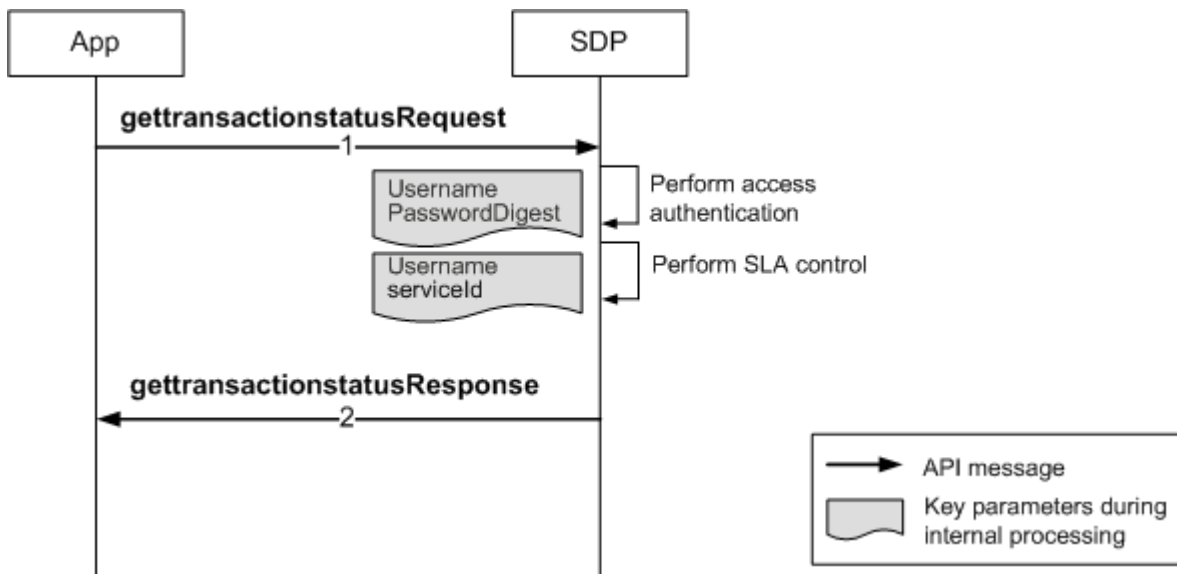
Function

This section describes the operation used to check debit status.

Request URI

The request URI is the destination URI of gettransactionstatus messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/gettransactionstatus
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/gettransactionstatus HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000012345678" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<ns2:gettransactionstatusrequest xmlns:ns2="http://www.ericsson.com/em/emm">
   <referenceid>12.23</referenceid>
   <identity>REPORT</identity>
</ns2:gettransactionstatusrequest>
```

Message Body Parameters

Table 2-30 describes parameters in a gettransactionstatus message body.

Table 2-30 Parameters in a gettransactionstatus message body

Parameter	Type	Length	Level of Requirement	Description
referenceid	string		Mandatory	Reference Id which has been entered by user, while initiating the transaction. Parameter cannot be NULL.
identity	string		Optional	A valid identity associated with the account holder that performed the requested transaction.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<n1:gettransactionstatusresponse xmlns:n1="http://www.ericsson.com/em/emm">
<transactionid>2147483647</transactionid>
<status>SUCCESSFUL</status>
</n1:gettransactionstatusresponse>
```

Table 2-31 describes parameters in a gettransactionstatus response message body.

Table 2-31 Parameters in a gettransactionstatus response message body

Parameter	Type	Length	Level of Requirement	Description
transactionid	long		Mandatory	Transaction ID. Parameter cannot be NULL.
status	Financialtransaction status	-	Mandatory	Payment Status. . Parameter cannot be NULL. [Enumeration] • SUCCESSFUL • PENDING • FAILED

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.4.3 reversetransaction

Process

Figure 2-13 Process of reversetransaction
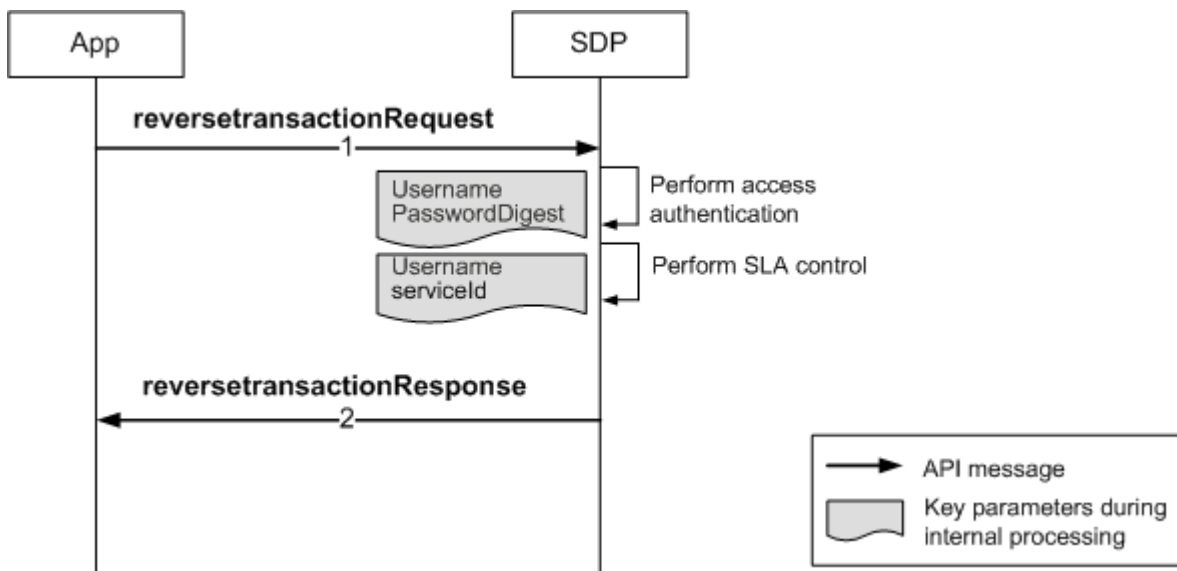
Function

Reverses a transaction and all of its potential sub-transactions.

Request URI

The request URI is the destination URI of reversetransaction messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/reversetransaction
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/reversetransaction HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<ns1:reversetransactionrequest xmlns:ns1="http://www.ericsson.com/em/emm">
  <financialtransactionid>1025684</financialtransactionid>
  <comment>this is a comment</comment>
  <financialinstructiondetails>
    <date>Tue Aug 13 08:13:12 UTC 2013</date>
    <fromfri>4673349175</fromfri>
    <tofri>4673349176</tofri>
    <financialinstructiontype>WITHDRAWAL</financialinstructiontype>
    <transfertype>TRANSFER</transfertype>
    <amount>10.0253654</amount>
    <frommessage>this is a frommessage</frommessage>
    <tomessage>hello</tomessage>
    <externaltransactionid>00124545</externaltransactionid>
  </financialinstructiondetails>
</ns1:reversetransactionrequest>
>
```

Message Body Parameters

Table 2-32describes parameters in a message body.

Table 2-32 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
financialtransactionid	long		Mandatory	The financial transaction id of the original transaction to reverse. Parameter cannot be NULL.
comment	string		Mandatory	A comment describing the reason for the reversal. Validated with NotEmpty. Validated with Length parameter(max=512). Validated with IsRestrictedString.
financialinstruction details	list<financialin structiondetail s>	-	Mandatory	A list of instructions describing how to perform the reversal. Contains information describing a single financial instruction. Validated with NotEmpty. For more details about financialinstructiondetails, see Table 2-33.

Table 2-33 describes parameters in financialinstructiondetails.

Table 2-33 Parameters in financialinstructiondetails

Parameter	Type	Length	Level of Requirement	Description
date	date		Mandatory	The time and date of the sub transaction to reverse.
fromfri	string		Mandatory	The FRI to transfer from. Validated with IsFRI. Parameter cannot be NULL.
tofri	string	-	Mandatory	The FRI to transfer to. Validated with IsFRI. Parameter cannot be NULL.
financialinstruction type	financialinstru ctiontype	-	Mandatory	The type of financial instruction to perform. Parameter cannot be NULL. For more details about the financialinstructiontype, see **Financial transaction type** in the table below.
transfertype	transfertype	-	Mandatory	The type of transfer to perform. Parameter cannot be NULL.
amount	decimal		Mandatory	The amount to send. Parameter cannot be NULL. Validated with

2 HTTP APIs

Parameter	Type	Length	Level of Requirement	Description
				IsAmount.
frommessage	string		Optional	A message for the sender. Validated with IsRestrictedString.
tomessage	string		Optional	A message for the receiver. Validated with IsRestrictedString.
externaltransactio nid	string		Optional	External id. Validated with Length parameter(max=256). Validated with IsExternalReferenceString.

Financial transaction type:
- DEPOSIT
- WITHDRAWAL
- TRANSFER
- CASH_IN
- CASH_OUT
- TRANSFER_TO_VOUCHER
- TRANSFER_FROM_VOUCHER
- PAYMENT_SEND
- PAYMENT_RECEIVE
- COMMISSIONING
- FEE
- PERIODIC_FEE
- CANCEL_VOUCHER
- VIEW_ACTIVE_TOKEN
- VIEW_TOKEN
- EXPIRE_VOUCHER
- BALANCE_ENQUIRY
- TRANSACTION_HISTORY_ENQUIRY
- REMITTANCE
- TRANSFER_TO_INVITATION
- TRANSFER_FROM_INVITATION
- CANCEL_INVITATION
- TRANSFER_FROM_VOUCHER_ATM
- PICKUP
- REVERSAL

- REVERSAL_FEE
- REVERSAL_LOY
- REVERSAL_COMMISSIONING
- ADJUSTMENT
- ADJUSTMENT_FEE
- ADJUSTMENT_LOY
- ADJUSTMENT_COMMISSIONING
- BATCH_TRANSFER
- RESOURCE_INFORMATION_ENQUIRY
- DEBIT
- RESOLVE_DEPOSIT
- SUSPEND_DEPOSIT
- PAYMENT
- CUSTODY_ACCOUNTS_TRANSFER
- EXTERNAL_TRANSFER
- REFUND
- INVITE_USER_REWARD
- ACCEPT_INVITE_REWARD

Response

An empty response indicates success.
A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<reversetransactionresponse xmlns="http://www.ericsson.com/em/emm"/>
```

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.4.4 getreversetransactiondetails

Process

Figure 2-14 Process of getreversetransactiondetails
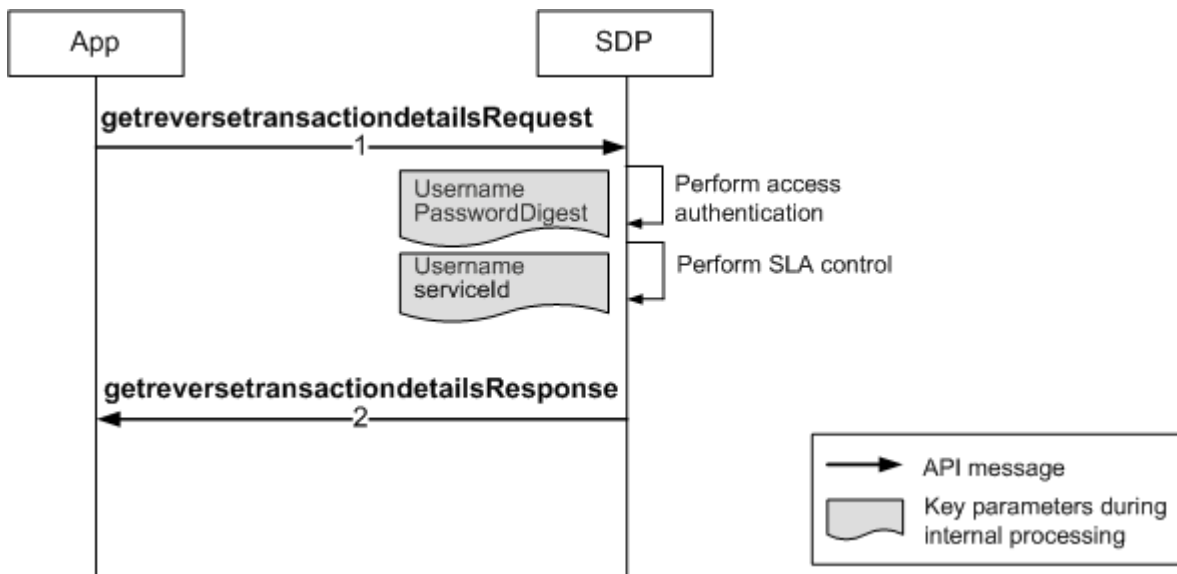
Function

Get status of previously initiated reversetransaction operation.

Request URI

The request URI is the destination URI of getreversetransactiondetails messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/getreversetransactiondetails
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/getreversetransactiondetails HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<ns2:getreversetransactiondetailsrequest xmlns:ns2="http://www.ericsson.com/em/emm">
   <financialtransactionid>12.23</financialtransactionid>
</ns2:getreversetransactiondetailsrequest>
```

Message Body Parameters

Table 2-34 describes parameters in a message body.

Table 2-34 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
financialtransactionid	long		Mandatory	The Financial Resource Identifier of the sending account. Parameter cannot be NULL.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<ns1:getreversetransactiondetailsresponse xmlns:n1="http://www.ericsson.com/em/emm">
 <subtransactions>
   <subtransaction>
     <date>2013</date>
     <fromfri>11</fromfri>
     <tofri>11</tofri>
     <financialinstructiontype>11</financialinstructiontype>
     <transfertype>11</transfertype>
     <amount>11</amount>
     <frommessage>11</frommessage>
     <tomessage>11</tomessage>
     <externaltransactionid>11</externaltransactionid>
   </subtransaction>
 </subtransactions>
</ns1:getreversetransactiondetailsresponse>
```

Table 2-35 describes parameters in a response message body.

Table 2-35 Parameters in a response message body

Parameter	Type	Length	Level of Requirement	Description
subtransactions	list<financialinstructiondetails>	-	Optional	The list of sub transactions for the requested transaction. Contains information describing a single financial instruction For more details about financialinstructiondetails, see Table 2-33.

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.4.5 withdraw

Process

Figure 2-15 Process of withdraw
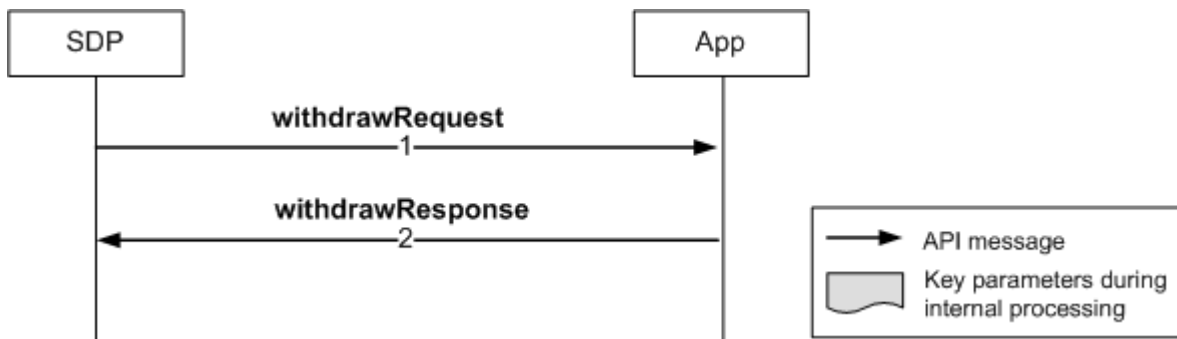
Function

The operation transfers money from the account holders account in the Partner system to an eWallet in the Mobile Money Manager.

Request URI

The request URI is the destination URI of withdraw messages sent by the SDP to the App. The URI is defined by the App.

Request Message Body Example

```
POST /mom/mo/getreversetransactiondetails HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
```

```
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-NotifyHeader: notify TransId=" 20090324123045100000123456789" , LinkId="A15Y89Z32T99"
Signature:43AD232FD45FF
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns4:withdrawrequest xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:op="http://www.ericsson.com/em/emm/common"
xmlns:ns4="http://www.ericsson.com/em/emm/sp/backend">
<resource>FRI:20200009999@savings.sp1/SP</resource>
<accountholderid>ID:20200009999/MSISDN</accountholderid>
<amount>
    <amount>130</amount>
    <currency>RWF</currency>
</amount>
<transactionid>2110248</transactionid>
<message>Transfer to</message>
</ns4:withdrawrequest>
```

Message Body Parameters

Table 2-36 describes parameters in a message body.

Table 2-36 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
resource	string		Mandatory	The FRI of the account, bill or user in the partner system. For example, FRI:12345ABC@water.company/SP
accountholderid	string		Mandatory	The MSISDN identity of the account holder that is performing the operation. For example: ID:46733491234/MSISDN
amount	moneydetailstype	-	Mandatory	Amount to be withdrawn. Parameter cannot be NULL. For details about moneydetailstype, see Table 2-28.
transactionid	long		Mandatory	System internal transaction id.

Parameter	Type	Length	Level of Requirement	Description
				Parameter cannot be NULL.
message	string		Optional	A descriptive note for Partner.
extension	extensiontype	-	Optional	Used for sending any additional information to Partner. For details about extensiontype, see Table 2-29.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns4:withdrawresponse xmlns:ns4="http://www.ericsson.com/em/emm/sp/backend">
<transactionid>2110248</transactionid>
<providertransactionid>1351000005264</providertransactionid>
<status>COMPLETED</status>
<newbalance>
    <amount>270</amount>
    <currency>RWF</currency>
</newbalance>
<message>THIS IS A MESSAGE TO THE END USER</message>
<extension/>
</ns4:withdrawresponse>
```

Table 2-37 describes parameters in a response message body.

Table 2-37 Parameters in a response message body

Parameter	Type	Length	Level of Requirement	Description
transactionid	long		Mandatory	System Transaction ID. Parameter can not be NULL.
providertransactionid	string		Mandatory	Transaction id from the service provider system.

Parameter	Type	Length	Level of Requirement	Description
status	status		Mandatory	Status of withdrawal operation. Parameter can not be NULL. Possible values are: ● CREATED ● PENDING ● COMPLETED ● FAILED ● EXPIRED
newbalance	moneydetailstype		Optional	Balance of the account in the service provider. For details about moneydetailstype, see Table 2-28.
message	string	-	Optional	A descriptive note for user.
extension	extensiontype		Optional	Any additional information received from Partner. For details about extensiontype, see Table 2-29.

Error Codes

The App returns error codes to the SDP when an exception occurs in response to withdraw messages. The error codes are defined by partners.
Table 2-38 describes withdraw error codes that the partners may return upon an exception.

Table 2-38 withdraw error codes

Error Code	Description
01	Successfully processed transaction.
02	Invalid account details.
03	Transaction not allowed.
04	Payment below minimum.
05	Invalid Mobile Money platform userid/password.
06	Payment Entry not found.
07	Missing transaction/message ID.
08	Missing application version.
100	General failure.

Error Code	Description
101	Field length exceeded.
102	Subscriber could not be identified. (Invalid subscriberID).
103	Duplicate transaction id.

2.5 Batch Processing

2.5.1 startbatchtransfer

Process

Figure 2-16 Process of startbatchtransfer
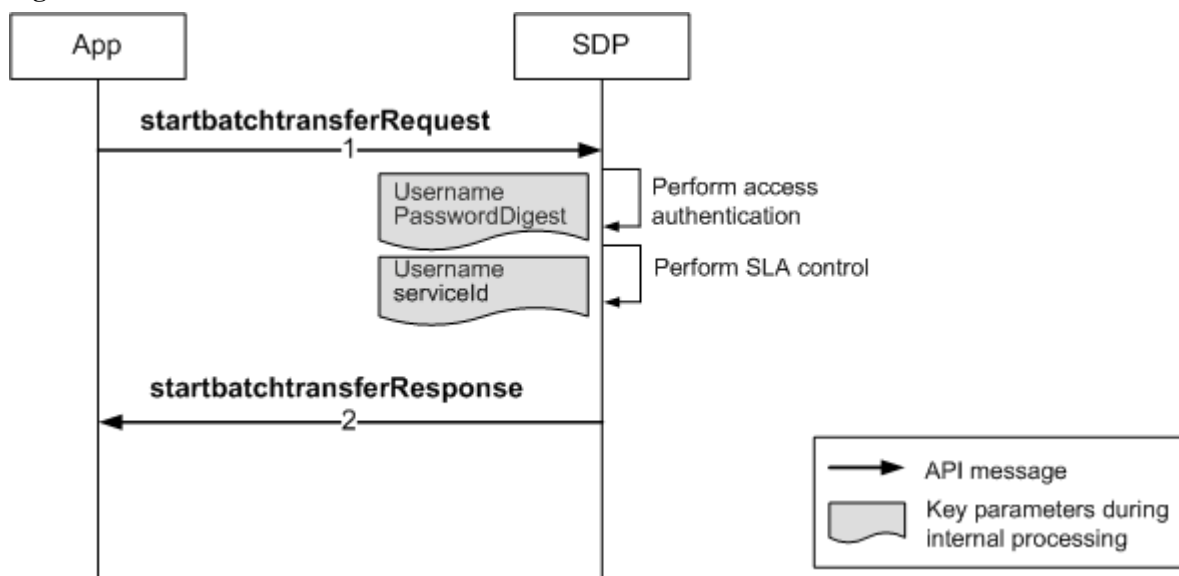
Function

Start a batch by sending a file containing transaction detail in a multipart HTTP request.

Request URI

The request URI is the destination URI of startbatchtransfer messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/startbatchtransfer

In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/startbatchtransfer HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<ns2:startbatchtransferrequestheader xmlns:ns2= "http://www.ericsson.com/em/emm">
  <batchtitle>12.23</batchtitle>
  <fromaccountfri>abc</fromaccountfri>
  <numberofrecords>123</numberofrecords>
  <totalamount>
     <amount>abc</amount>
     <currency>abc</currency>
  </totalamount>
  <parsername>abc</parsername>
  <parserarguments>
     <argument>
        <name>abc</name>
        <value>abc</value>
     </argument>
  </parserarguments>
</ns2:startbatchtransferrequestheader>
```

Message Body Parameters

Table 2-39 describes parameters in a startbatchtransfer message body.

Table 2-39 Parameters in a startbatchtransfer message body

Parameter	Type	Length	Level of Requirement	Description
startbatchtransferrequestheader	Startbatchtransferrequestheader	-	Optional	See for more details.

Table 2-40 describes parameters in a Startbatchtransferrequestheader message body.

Table 2-40 Parameters in a Startbatchtransferrequestheader message body

Parameter	Type	Length	Level of Requirement	Description
batchtitle	string		Optional	The description of the batch, it is set by the person creating the file. The description will be present in the result file. Validated with Length parameter(max=128). Validated with IsRestrictedString.
fromaccountfri	string		Optional	The account where money is transferred from specified as an FRI. If not specified, the default account of the logged in user is used. Validated with IsFRI.
numberofrecords	long		Mandatory	The number of transaction records in the batch. Parameter cannot be NULL. Maximum value: 10000L.
totalamount	decimal		Mandatory	Total sum of amount for all transactions in transaction details file. Must be greater than 0 (zero). Parameter cannot be NULL. Validated with IsAmount.
currency	string		Optional	Amount currency. Validated with IsCurrencyCode.
parsername	string		Optional	Name of file parser that will be used to parse the batch data. System default parser will be used if this parameter is not set. Validated with IsSingleWordString.
parserarguments	list<propertytype>	-	Optional	Parser arguments. Contains the name and value of a property. For more details about propertytype, see Table 2-41.

Table 2-41 describes parameters of propertytype.

Table 2-41 Parameters in propertytype

Parameter	Type	Length	Level of Requirement	Description
name	string	-	Mandatory	The name of the property. Validated with NotBlank. Validated with IsASCIISimpleString.
value	string		Mandatory	The value of the property. Validated with NotBlank. Validated with IsPropertyValue.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<tns:startbatchtransferresponse xmlns:tns="http://www.ericsson.com/em/emm">
<batchtransferid>2147483647</batchtransferid>
</tns:startbatchtransferresponse>
```

Table 2-42 describes parameters in a startbatchtransfer response message body.

Table 2-42 Parameters in a startbatchtransfer response message body

Parameter	Type	Length	Level of Requirement	Description
batchtransferid	long		Mandatory	Numerical identification of the performed batch transfer.

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.5.2 approvebatchtransfer

Process

Figure 2-17 Process of approvebatchtransfer
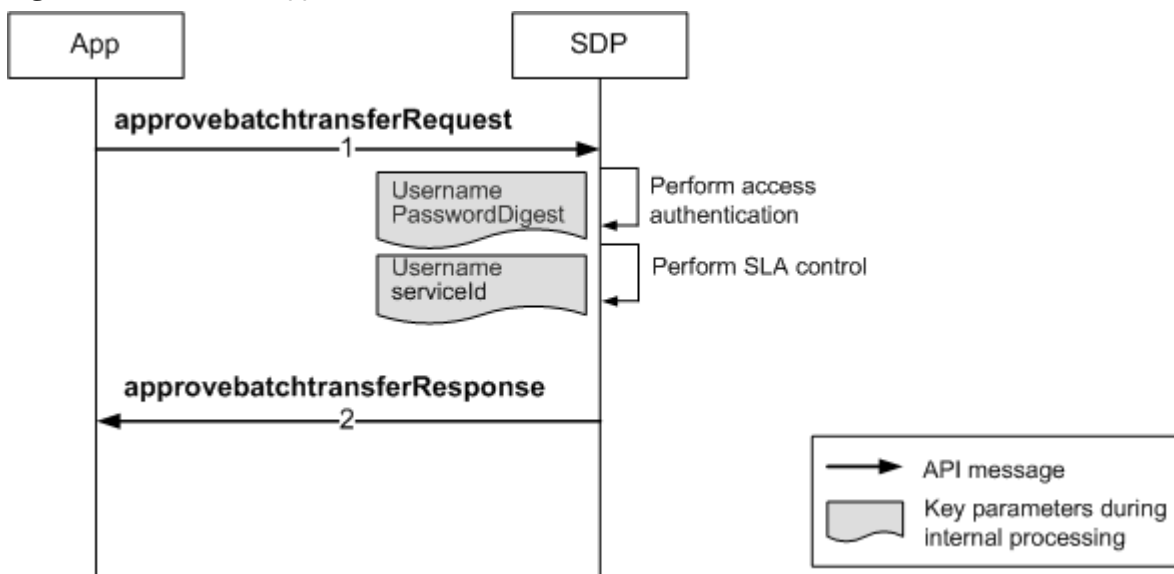
Function

Approves a batch transfer previously created with the startbatchtransfer operation.

Request URI

The request URI is the destination URI of approvebatchtransfer messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/approvebatchtransfer
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/approvebatchtransfer HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<approvebatchtransferrequest xmlns="http://www.ericsson.com/em/emm">
<batchid xmlns="">2147483647</batchid>
</approvebatchtransferrequest>
```

Message Body Parameters

Table 2-43 describes parameters in a approvalbatchtransfer message body.

Table 2-43 Parameters in a approvalbatchtransfer message body

Parameter	Type	Length	Level of Requirement	Description
batchid	long		Mandatory	The batch id generated by Mobile Money Manager when the batch was created. Parameter cannot be NULL.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<approvebatchtransferresponse xmlns="http://www.ericsson.com/em/emm"/>
```

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.5.3 cancelbatchtransfer

Process

Figure 2-18 Process of cancelbatchtransfer
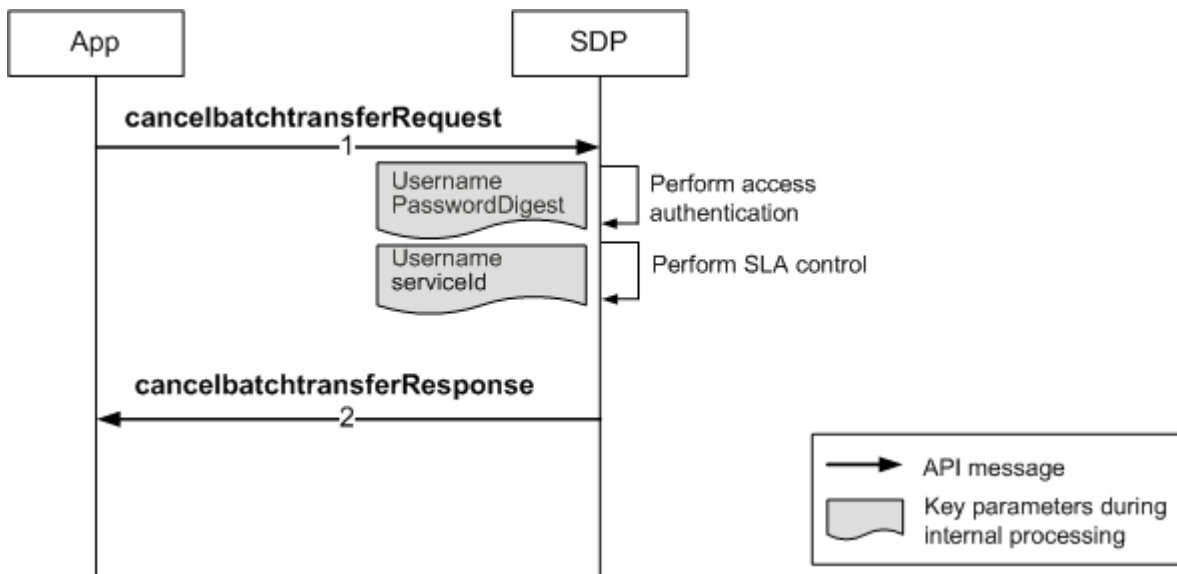
Function

Cancel an unprocessed batch transfer.

Request URI

The request URI is the destination URI of cancelbatchtransfer messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/cancelbatchtransfer
In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/cancelbatchtransfer HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<cancelbatchtransferrequest xmlns="http://www.ericsson.com/em/emm">
<batchid xmlns="">2147483647</batchid>
</cancelbatchtransferrequest>
```

Message Body Parameters

Table 2-44 describes parameters in message body.

Table 2-44 Parameters in message body

Parameter	Type	Length	Level of Requirement	Description
batchid	long		Mandatory	The batch transfer identification number. Parameter cannot be NULL.

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<cancelbatchtransferresponse xmlns="http://www.ericsson.com/em/emm"/>
```

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.5.4 listbatchtransfer

Process

Figure 2-19 Process of listbatchtransfer
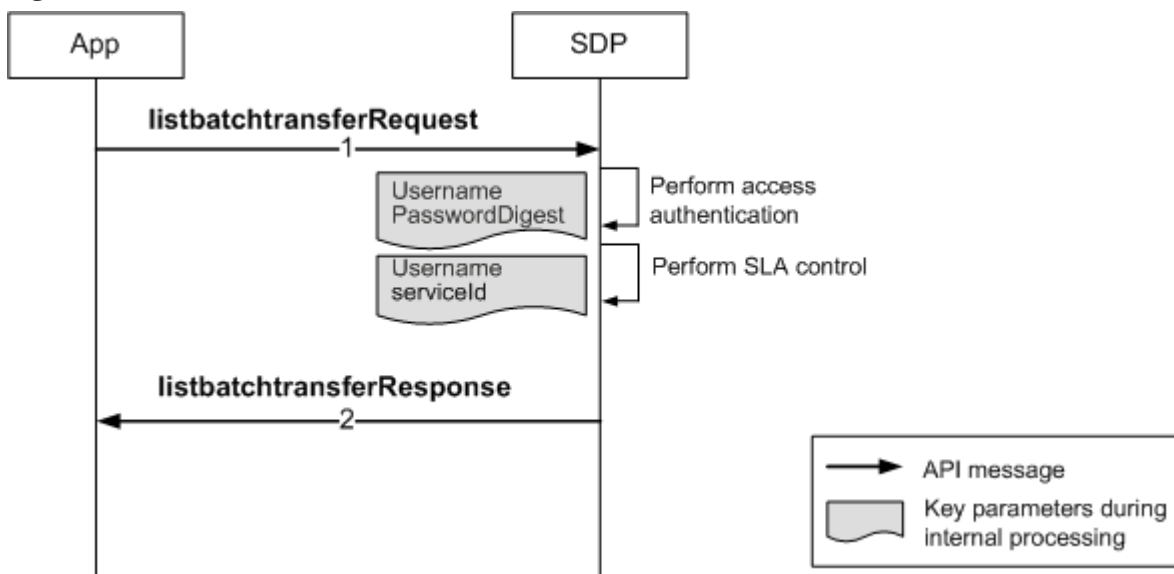
Function

Fetch batch transfers for a specific account, with possibility to also specify time interval and status.

Request URI

The request URI is the destination URI of listbatchtransfer messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/listbatchtransfer

In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/listbatchtransfer HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<ns2:listbatchtransferrequest xmlns:ns2= "http://www.ericsson.com/em/emm">
   <fromaccountfri>456</fromaccountfri>
   <numberofbatches>798</numberofbatches>
   <startdate>654</startdate>
   <enddate>abc</enddate>
   <statuslist>
      <status>CREATED</status>
   </statuslist>
   <extension>abc</extension>
</ns2:listbatchtransferrequest>
```

Message Body Parameters

Table 2-45 describes parameters in a message body.

Table 2-45 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
fromaccountfri	string		Optional	List batch transfers originating from this account. If not specified, the default account of the logged in user is used. Validated with IsFRI.
numberofbatches	integer		Optional	The maximum number of batch transfers to be returned.
startdate	string		Optional	If present, only batch transfers received from this date and onwards will be returned. Validated with IsDate parameter(format=yyyy-MM-dd).
enddate	string		Optional	If present, only batch transfers received up to this date will be returned. Validated with IsDate parameter(format=yyyy-MM-dd).

Parameter	Type	Length	Level of Requirement	Description
status	list<batchtransferstatus>	-	Optional	Batch transfer status list. Contains the different status codes for a batch transfer. [Enumeration] • CREATED • APPROVED • ONGOING • COMPLETED • CANCELLED

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<tns:listbatchtransferresponse xmlns:tns="http://www.ericsson.com/em/emm" >
  <batchinfos>
    <batchinfo>
      <batchid>12</batchid>
      <title>title</title>
      <receivetimestamp>20130726111233</receivetimestamp>
      <completedtimestamp>20130726111234</completedtimestamp>
      <fromaccountfri>1</fromaccountfri>
      <batchcreatormsisdn>1</batchcreatormsisdn>
      <batchcreatorname>1</batchcreatorname>
      <batchapprovermsisdn>1</batchapprovermsisdn>
      <batchapprovername>1</batchapprovername>
      <batchapprovable>1</batchapprovable>
      <batchcancelledbymsisdn>1</batchcancelledbymsisdn>
      <batchcancelledbyname>1</batchcancelledbyname>
      <numberofrecords>1</numberofrecords>
      <totalamount>1</totalamount>
      <currency>1</currency>
      <status>1</status>
      <numberofsuccess>1</numberofsuccess>
      <numberoffailure>1</numberoffailure>
      <totalfee>1</totalfee>
      <totaltransferedamount>1</totaltransferedamount>
      <transactionrecords>
```

```
        <transactionrecord>
          <transactionidentifier>1</transactionidentifier>
          <receiveridtype>1</receiveridtype>
          <receiverid>1</receiverid>
          <transactionid>1</transactionid>
          <transactiondatetime>1</transactiondatetime>
          <amount>1</amount>
          <result>1</result>
          <reason>1</reason>
          <message>1</message>
          <fee>1</fee>
          <transferedamount>1</transferedamount>
        </transactionrecord>
      </transactionrecords>
    </batchinfo>
  </batchinfos>
</tns:listbatchtransferresponse>
```

Table 2-46 describes parameters in a response message body.

Table 2-46 Parameters in a response message body

Parameter	Type	Length	Level of Requirement	Description
batchinfos	list<batchinfotype>	-	Optional	List of batch transfer information. Contains information about a batch transfer. For more details about batchinfotype, see Table 2-47.

Table 2-47 describes parameters in batchinfotype.

Table 2-47 Parameters in batchinfotype

Parameter	Type	Length	Level of Requirement	Description
batchid	long		Mandatory	Generated by the system when the batch is accepted.
title	string		Optional	Import CSV file header title. Validated with IsMultiWordString.
fromaccountfri	string		Mandatory	From account Financial Resource Identifier. Validated with IsFRI.
batchcreatormsisdn	string		Mandatory	Creator msisdn. Validated with IsMSISDN.
batchcreatorname	string		Optional	Creator name. Validated with IsUsername.

Parameter	Type	Length	Level of Requirement	Description
batchapprovermsisdn	string		Optional	Approver msisdn. Validated with IsMSISDN.
batchapprovername	string		Optional	Approver name. Validated with IsUsername.
batchapprovable	boolean		Optional	Batch is approvable or not, present if status is created.
batchcancelledbymsisdn	string		Optional	CancelledBy msisdn. Validated with IsMSISDN.
batchcancelledbyname	string		Optional	CancelledBy name. Validated with IsUsername.
receivetimestamp	string		Mandatory	Time stamp when the system received the start batch request. Validated with IsDate parameter(format=yyyy-MM-dd HH:mm:ss).
numberofrecords	long		Mandatory	Import CSV file number of records.
totalamount	decimal		Mandatory	Import CSV file total amount.
currency	string		Mandatory	Import CSV file currency. Validated with IsCurrencyCode.
status	string		Mandatory	Import CSV file status. Validated with IsSingleWordString.
completedtimestamp	string		Mandatory	Time stamp when the system completed the batch request. Validated with IsDate parameter(format=yyyy-MM-dd HH:mm:ss).
numberofsuccess	long		Optional	The number of successfully executed transfers. Present if status is completed.
numberoffailure	long		Optional	The number of failed transfers. Present if status is completed.
totalfee	decimal		Optional	The totally withdrawn fee. Present if status is completed.
totaltransferedamount	decimal		Optional	The totally transferred amount. Present if status is completed.
transactionrecords	list<transactionrecordtype>		Optional	List of batch transaction details. Contains details about a batch transaction. For more details about transactionrecordtype, see Table 2-48.

Table 2-48 describes parameters in transactionrecordtype.

Table 2-48 Parameters in transactionrecordtype

Parameter	Type	Length	Level of Requirement	Description
transactionidentifier	string		Mandatory	The identifier of the transaction record. Validated with IsExternalReferenceString.
receiveridtype	string		Mandatory	The id type of the receiver, passport, identification card etc. Validated with IsRestrictedString.
receiverid	string		Mandatory	The number of the receiver identification. Validated with IsRestrictedString.
transactionid	string		Optional	Transaction id. Validated with IsNumericString.
transactiondatetime	string		Optional	Time of transaction. Validated with IsDate parameter(format=yyyy-MM-ddHH:mm:ss).
amount	decimal		Mandatory	Transaction amount.
result	string		Mandatory	The result of the transaction. Validated with IsSingleWordString.
reason	string		Optional	Free text. Validated with IsRestrictedString.
message	string		Optional	Transaction message. Validated with IsRestrictedString.
fee	decimal		Optional	Transaction fee.
transferedamount	decimal		Optional	The amount being transferred.

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

2.5.5 getbatchtransfer

Process

Figure 2-20 Process of getbatchtransfer
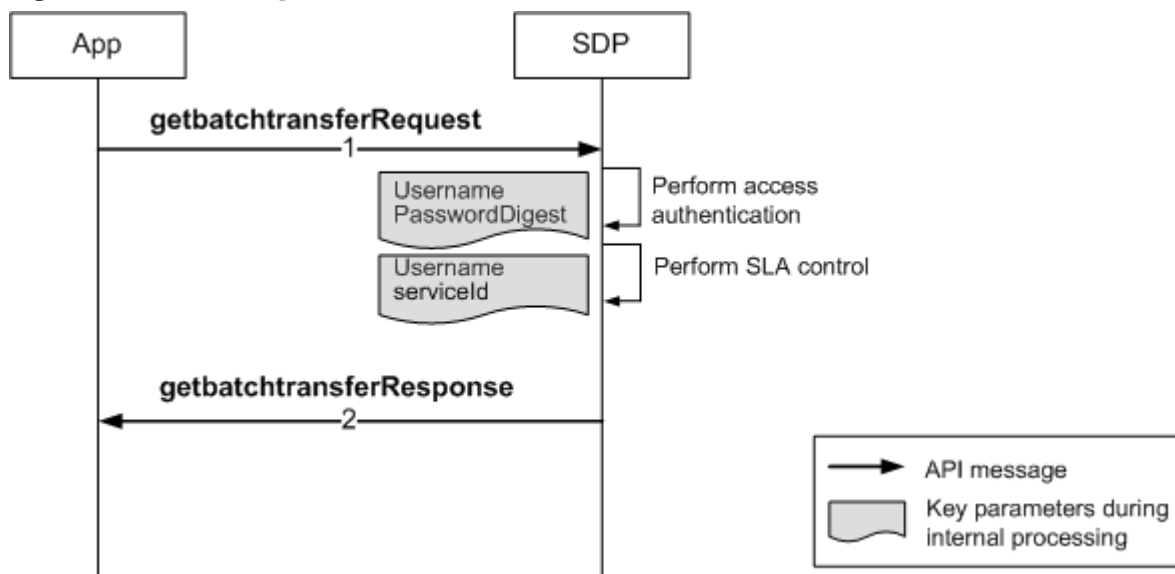
Function

Retrieves information about a specific batch.

Request URI

The request URI is the destination URI of getbatchtransfer messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/getbatchtransfer

In the format, IP and Port indicate the service IP address and SOAP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/getbatchtransfer HTTP/1.1
Content-Type:text/xml
Content-Length:1069
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Signature:43AD232FD45FF
```

```
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<tns:getbatchtransferrequest xmlns:tns="http://www.ericsson.com/em/emm">
<batchid>2147483647</batchid>
<resulttype>SUMMARY_REPORT</resulttype>
</tns:getbatchtransferrequest>
```

Message Body Parameters

Table 2-18 describes parameters in a message body.

Table 2-49 Parameters in a message body

Parameter	Type	Length	Level of Requirement	Description
batchid	long		Mandatory	The batch id generated by Mobile Money Manager when the batch was created. Parameter cannot be NULL.
resulttype	batchtransferresulttype		Optional	Controls the level of information to return. [Enumeration] • SUMMARY_REPORT • FULL_REPORT • FULL_REPORT_ON_COMPLETED

Response

A success response example:

```
HTTP/1.1 200 OK
Signature:43AD232FD45FF
Content-Length: 0
Server: Jetty(7.5.4.v20111024)

<?xml version="1.0" encoding="UTF-8"?>
<tns:getbatchtransferresponse xmlns:tns="http://www.ericsson.com/em/emm">
  <batchinfo>
    <batchid>123</batchid>
    <title>11</title>
    <receivetimestamp>11</receivetimestamp>
    <completedtimestamp>11</completedtimestamp>
    <fromaccountfri>11</fromaccountfri>
    <batchcreatormsisdn>11</batchcreatormsisdn>
```

```
            <batchcreatorname>11</batchcreatorname>
            <batchapprovermsisdn>11</batchapprovermsisdn>
            <batchapprovername>11</batchapprovername>
            <batchapprovable>11</batchapprovable>
            <batchcancelledbymsisdn>11</batchcancelledbymsisdn>
            <batchcancelledbyname>11</batchcancelledbyname>
            <numberofrecords>11</numberofrecords>
            <totalamount>11</totalamount>
            <currency>11</currency>
            <status>11</status>
            <numberofsuccess>11</numberofsuccess>
            <numberoffailure>11</numberoffailure>
            <totalfee>11</totalfee>
            <totaltransferedamount>11</totaltransferedamount>
            <transactionrecords>
               <transactionrecord>
                  <transactionidentifier>11</transactionidentifier>
                  <receiveridtype>11</receiveridtype>
                  <receiverid>11</receiverid>
                  <transactionid>11</transactionid>
                  <transactiondatetime>11</transactiondatetime>
                  <amount>11</amount>
                  <result>11</result>
                  <reason>11</reason>
                  <message>11</message>
                  <fee>11</fee>
                  <transferedamount>11</transferedamount>
               </transactionrecord>
            </transactionrecords>
         </batchinfo>
      </tns:getbatchtransferresponse>
```

Table 2-19 describes parameters in a response message body.

Table 2-50 Parameters in a response message body

Parameter	Type	Length	Level of Requirement	Description
batchinfo	batchinfotype	-	Mandatory	Transfer Batch Info. For more details about batchinfotype, see Table 2-47.

Error Codes

SDP may return upon an exception. For details about the error codes, see 2.7 API Error Response.

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2.6 Financial

2.6.1 getTransactionhistory

Process

Figure 2-21 Process of getTransactionhistory
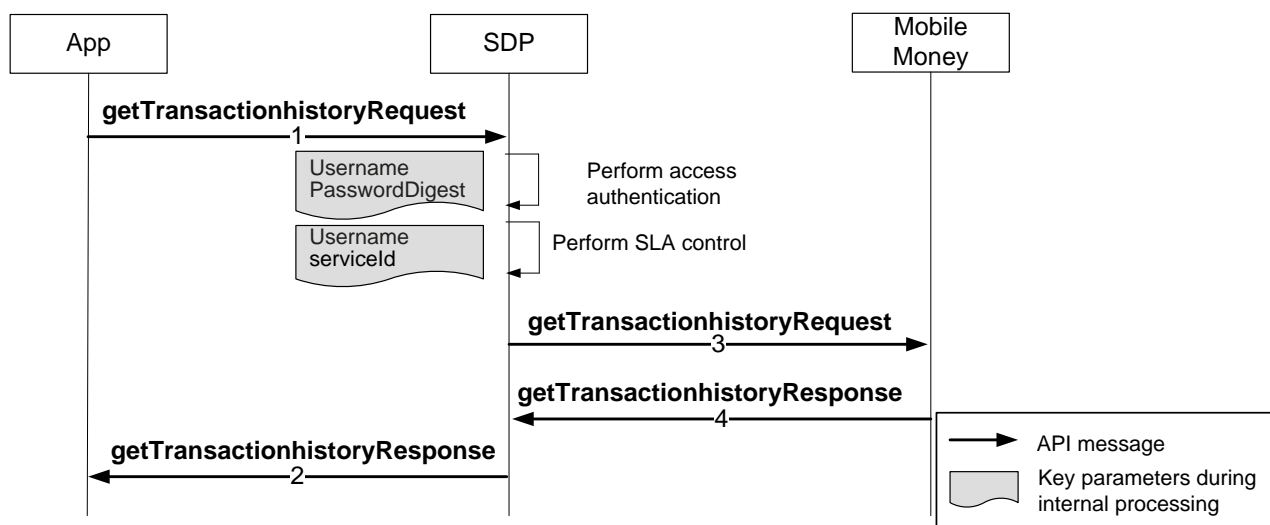
Function

A getTransactionhistory enables a Partner to query a list of transactions matching the parameters in the request.

Request URI

The request URI is the destination URI of getTransactionhistory messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/getTransactionhistory
In the format, IP and Port indicate the service IP address and HTTP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/getTransactionhistory HTTP/1.1
Content-Type:text/xml
Content-Length:569
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
```

```
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2
Signature:43AD232FD45FF

<?xml version="1.0" encoding="UTF-8"?>
<v1_0:gettransactionhistoryrequest xmlns:ns2="http://www.ericsson.com/em/emm/v1_1/common"
 xmlns:fic="http://www.ericsson.com/em/emm/financial/v1_0/common"
 xmlns:op="http://www.ericsson.com/em/emm/v1_0/common"
 xmlns:ns1="urn:iso:std:iso:20022:tech:xsd"
 xmlns:v1_0="http://www.ericsson.com/em/emm/financial/v1_0" version="1.0">
    <fri>fri0</fri>
    <numoftransactions>50</numoftransactions>
    <indexoffset>0</indexoffset>
    <financialtransactionid>1111</financialtransactionid>
    <externaltransactionid>externaltransactionid0</externaltransactionid>
    <transactionstatus>SUCCESSFUL</transactionstatus>
    <transactiontype>DEPOSIT</transactiontype>
    <transactiontype>DEPOSIT</transactiontype>
    <startdatefrom>2006-05-04T18:13:51.0Z</startdatefrom>
    <startdateto>2006-05-04T18:13:51.0Z</startdateto>
    <datefrom>2006-05-04T18:13:51.0Z</datefrom>
    <dateto>2006-05-04T18:13:51.0Z</dateto>
    <direction>IN</direction>
    <otherfri>otherfri0</otherfri>
    <quoteid>quoteid0</quoteid>
</v1_0:gettransactionhistoryrequest>
```

Message Body Parameters

Table 2-51 describes parameters in a getTransactionhistory message body.

Table 2-51 Parameters in a getTransactionhistory message body

Parameter	Type	Length	Level of Requirement	Description
fri	string		Optional	The FRI to get the transactions for. If not specified the default FRI of the calling user will be used. Validated with IsFRI.
numoftransactions	int		Optional	The number of transactions to return in the response. Default value: 50. Minimum value: 1. Parameter can not be NULL.

Parameter	Type	Length	Level of Requirement	Description
indexoffset	int		Optional	Start retrieving transaction history from this index.
financialtransactionid	long		Optional	Retrieve transaction history with this financial transaction ID. Validated with IsPositiveLong (allowZero=false).
externaltransactionid	string		Optional	Retrieve transaction history with this external transaction ID. Validated with IsExternalReferenceString.
transactionstatus	string		Optional	Retrieve transaction history with this status. Possible values are: • SUCCESSFUL • PENDING • FAILED
transactiontype	string[0…unbounded]		Optional	Retrieve transaction history with this transaction type. It is possible to have more than one transactiontype element to filter on. Shows the financial transaction type Possible values are: • DEPOSIT • REVERSE_DEPOSIT • WITHDRAWAL • TRANSFER • CASH_IN • CASH_OUT • TRANSFER_TO_VOUCHER • TRANSFER_FROM_VOUCHER • PAYMENT_SEND • PAYMENT_RECEIVE • COMMISSIONING • FEE

Parameter	Type	Length	Level of Requirement	Description
				• PERIODIC_FEE
				• CANCEL_VOUCHER
				• VIEW_ACTIVE_TOKEN
				• VIEW_TOKEN
				• EXPIRE_VOUCHER
				• BALANCE_ENQUIRY
				• TRANSACTION_HISTORY_ENQUIRY
				• REMITTANCE
				• TRANSFER_TO_INVITATION
				• TRANSFER_FROM_INVITATION
				• CANCEL_INVITATION
				• CASH_OUT_ATM
				• TRANSFER_FROM_VOUCHER_ATM
				• PICKUP
				• REVERSAL
				• REVERSAL_FEE
				• REVERSAL_LOY
				• REVERSAL_COMMISSIONING
				• REVERSAL_TAX
				• REVERSAL_DISCOUNT
				• REVERSAL_PROMOTION
				• ADJUSTMENT
				• ADJUSTMENT_FEE
				• ADJUSTMENT_LOY
				• ADJUSTMENT_COMMISSIONING
				• ADJUSTMENT_TAX
				• ADJUSTMENT_DISCOUNT_PROMOTION
				• BATCH_TRANSFER
				• RESOURCE_INFORMATION_ENQUIRY
				• DEBIT
				• RESOLVE_DEPOSIT

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Parameter	Type	Length	Level of Requirement	Description
				• SUSPEND_DEPOSIT
				• PAYMENT
				• CUSTODY_ACCOUNTS_TRANSFER
				• EXTERNAL_TRANSFER
				• REFUND
				• INVITE_USER_REWARD
				• ACCEPT_INVITE_REWARD
				• TAX
				• DECLINE_INVITATION
				• EXPIRED_INVITATION
				• FLOAT_TRANSFER
				• TRANSFER_TO_ANY_BANK_ACCOUNT
				• TRANSFER_LOY
				• EXTERNAL_TRANSFER_LOY
				• PAYMENT_LOY
				• PAYMENT_SEND_LOY
				• PAYMENT_RECEIVE_LOY
				• DEBIT_LOY
				• REFUND_LOY
				• REVERSAL_USER_LOY
				• COUPONS_REDEEM_COUPON
				• COUPONS_ACQUIRE_COUPON
				• COUPONS_ISSUE_OFFER
				• COUPONS_REDEEMED_COUPON_RATE
				• DEPOSIT_NOTIFICATION
				• WITHDRAWAL_NOTIFICATION
				• REVERSAL_SENDER_NOTIFICATION
				• REVERSAL_RECEIVER_NOTIFICATION
				• LOAN_APPLICATION
				• VIEW_LOAN_REPAYMENTS

Parameter	Type	Length	Level of Requirement	Description
				• VIEW_LOAN_DETAILS • UNKNOWN
startdatefrom	dateTime		Optional	Retrieve transaction history created from this start date.
startdateto	dateTime		Optional	Retrieve transaction history created until this stop date
datefrom	dateTime		Optional	Retrieve transaction history finalized (SUCCESSFUL, FAILED) from this start date.
dateto	dateTime		Optional	Retrieve transaction history finalized (SUCCESSFUL, FAILED) until this stop date.
direction	string		Optional	Retrieve transaction history with the specified direction, that is, incoming or outgoing transfers. Possible values are: IN OUT
otherfri	string		Optional	The FRI of the other party in transfer, could be from or to depending on direction. Validated with IsFRI.
quoteid	string		Optional	The ID of the quote to use.

Response

A success response example:

```
<?xml version="1.0" encoding="UTF-8"?>
<v1_0:gettransactionhistoryresponse xmlns:iso="urn:iso:std:iso:20022:tech:xsd"
 xmlns:ns2="http://www.ericsson.com/em/emm/v1_1/common"
 xmlns:fic="http://www.ericsson.com/em/emm/financial/v1_0/common"
 xmlns:ns1="http://www.ericsson.com/em/emm/v1_0/common"
 xmlns:v1_0="http://www.ericsson.com/em/emm/financial/v1_0">
   <totalcount>0</totalcount>
   <historylist>
      <entry>
```

```xml
<financialtransactionid>financialtransactionid0</financialtransactionid>
<transactionstatus>SUCCESSFUL</transactionstatus>
<transfertype>TRANSFER_FEE</transfertype>
<startdate>2006-05-04T18:13:51.0Z</startdate>
<commitdate>2006-05-04T18:13:51.0Z</commitdate>
<fxrate>0</fxrate>
<initiatinguser>initiatinguser0</initiatinguser>
<realuser>realuser0</realuser>
<initiatingaccountholder>initiatingaccountholder0</initiatingaccountholder>
<realaccountholder>realaccountholder0</realaccountholder>
<from>from0</from>
<fromaccount>fromaccount0</fromaccount>
<fromamount>
    <amount>0</amount>
    <currency>currency0</currency>
</fromamount>
<fromfee>
    <amount>0</amount>
    <currency>currency1</currency>
</fromfee>
<fromexternalfee>
    <amount>0</amount>
    <currency>currency2</currency>
</fromexternalfee>
<fromdiscount>
    <amount>0</amount>
    <currency>currency3</currency>
</fromdiscount>
<frompromotion>
    <amount>0</amount>
    <currency>currency4</currency>
</frompromotion>
<fromloyfee>0</fromloyfee>
<fromloyreward>0</fromloyreward>
<frompromotionrefund>
    <amount>0</amount>
    <currency>currency5</currency>
</frompromotionrefund>
<fromnote>fromnote0</fromnote>
<fromavailablebalance>
    <amount>0</amount>
    <currency>currency6</currency>
</fromavailablebalance>
<fromtotalbalance>
    <amount>0</amount>
    <currency>currency7</currency>
</fromtotalbalance>
```

```
<fromcommittedbalance>
    <amount>0</amount>
    <currency>currency8</currency>
</fromcommittedbalance>
<fromaccountholder>fromaccountholder0</fromaccountholder>
<to>to0</to>
<toaccount>toaccount0</toaccount>
<toamount>
    <amount>0</amount>
    <currency>currency9</currency>
</toamount>
<tofee>
    <amount>0</amount>
    <currency>currency10</currency>
</tofee>
<toexternalfee>
    <amount>0</amount>
    <currency>currency11</currency>
</toexternalfee>
<topromotion>
    <amount>0</amount>
    <currency>currency12</currency>
</topromotion>
<toloyfee>0</toloyfee>
<toloyreward>0</toloyreward>
<topromotionrefund>
    <amount>0</amount>
    <currency>currency13</currency>
</topromotionrefund>
<todiscountrefund>
    <amount>0</amount>
    <currency>currency14</currency>
</todiscountrefund>
<tomessage>tomessage0</tomessage>
<toavailablebalance>
    <amount>0</amount>
    <currency>currency15</currency>
</toavailablebalance>
<tototalbalance>
    <amount>0</amount>
    <currency>currency16</currency>
</tototalbalance>
<tocommittedbalance>
    <amount>0</amount>
    <currency>currency17</currency>
</tocommittedbalance>
<maininstructionid>-1073741773</maininstructionid>
```

```
    <instructionid>-1073741773</instructionid>
    <externaltransactionid>externaltransactionid0</externaltransactionid>
    <transactiontext>transactiontext0</transactiontext>
    <tofeerefund>
        <amount>0</amount>
        <currency>currency18</currency>
    </tofeerefund>
    <fromfeerefund>
        <amount>0</amount>
        <currency>currency19</currency>
    </fromfeerefund>
    <toaccountholder>toaccountholder0</toaccountholder>
</entry>
<entry>
    <financialtransactionid>financialtransactionid1</financialtransactionid>
    <transactionstatus>SUCCESSFUL</transactionstatus>
    <transfertype>TRANSFER_FEE</transfertype>
    <startdate>2006-05-04T18:13:51.0Z</startdate>
    <commitdate>2006-05-04T18:13:51.0Z</commitdate>
    <fxrate>0</fxrate>
    <initiatinguser>initiatinguser1</initiatinguser>
    <realuser>realuser1</realuser>
    <initiatingaccountholder>initiatingaccountholder1</initiatingaccountholder>
    <realaccountholder>realaccountholder1</realaccountholder>
    <from>from1</from>
    <fromaccount>fromaccount1</fromaccount>
    <fromamount>
        <amount>0</amount>
        <currency>currency20</currency>
    </fromamount>
    <fromfee>
        <amount>0</amount>
        <currency>currency21</currency>
    </fromfee>
    <fromexternalfee>
        <amount>0</amount>
        <currency>currency22</currency>
    </fromexternalfee>
    <fromdiscount>
        <amount>0</amount>
        <currency>currency23</currency>
    </fromdiscount>
    <frompromotion>
        <amount>0</amount>
        <currency>currency24</currency>
    </frompromotion>
    <fromloyfee>0</fromloyfee>
```

```
<fromloyreward>0</fromloyreward>
<frompromotionrefund>
    <amount>0</amount>
    <currency>currency25</currency>
</frompromotionrefund>
<fromnote>fromnote1</fromnote>
<fromavailablebalance>
    <amount>0</amount>
    <currency>currency26</currency>
</fromavailablebalance>
<fromtotalbalance>
    <amount>0</amount>
    <currency>currency27</currency>
</fromtotalbalance>
<fromcommittedbalance>
    <amount>0</amount>
    <currency>currency28</currency>
</fromcommittedbalance>
<fromaccountholder>fromaccountholder1</fromaccountholder>
<to>to1</to>
<toaccount>toaccount1</toaccount>
<toamount>
    <amount>0</amount>
    <currency>currency29</currency>
</toamount>
<tofee>
    <amount>0</amount>
    <currency>currency30</currency>
</tofee>
<toexternalfee>
    <amount>0</amount>
    <currency>currency31</currency>
</toexternalfee>
<topromotion>
    <amount>0</amount>
    <currency>currency32</currency>
</topromotion>
<toloyfee>0</toloyfee>
<toloyreward>0</toloyreward>
<topromotionrefund>
    <amount>0</amount>
    <currency>currency33</currency>
</topromotionrefund>
<todiscountrefund>
    <amount>0</amount>
    <currency>currency34</currency>
</todiscountrefund>
```

```
            <tomessage>tomessage1</tomessage>
            <toavailablebalance>
                <amount>0</amount>
                <currency>currency35</currency>
            </toavailablebalance>
            <tototalbalance>
                <amount>0</amount>
                <currency>currency36</currency>
            </tototalbalance>
            <tocommittedbalance>
                <amount>0</amount>
                <currency>currency37</currency>
            </tocommittedbalance>
            <maininstructionid>-1073741773</maininstructionid>
            <instructionid>-1073741773</instructionid>
            <externaltransactionid>externaltransactionid1</externaltransactionid>
            <transactiontext>transactiontext1</transactiontext>
            <tofeerefund>
                <amount>0</amount>
                <currency>currency38</currency>
            </tofeerefund>
            <fromfeerefund>
                <amount>0</amount>
                <currency>currency39</currency>
            </fromfeerefund>
            <toaccountholder>toaccountholder1</toaccountholder>
        </entry>
    </historylist>
    <loyalty>
        <generated>0</generated>
        <consumed>0</consumed>
        <newbalance>0</newbalance>
    </loyalty>
</v1_0:gettransactionhistoryresponse>
```

Table 2-52 describes parameters in a getTransactionhistory response message body.

Table 2-52 Parameters in a getTransactionhistory response message body

Parameter	Type	Length	Level of Requirement	Description
totalcount	integer	-	Optional	Total amount of transaction history entries available with the specified condition.
entry	gettransactionhistoryentrytype[0…unbounded]	-	Optional	Contains a list of transactions, each transaction contains type, amount, date and so on. Contains the main summary of a transaction history event.

Parameter	Type	Length	Level of Requirement	Description
loyalty	loyalty	-	Optional	

Table 2-53 describes parameters in a gettransactionhistoryentrytype response message body.

Table 2-53 Parameters in a gettransactionhistoryentrytype response message body

Parameter	Type	Length	Level of Requirement	Description
financialtransactionid	string		Optional	The financial transaction ID. It's a number, in ASCII digits. Digit groups may be separated by hyphen characters (-, ASCII code number 45). An empty string is allowed.
transactionstatus	string		Optional	The status of the transaction. Possible values are: • SUCCESSFUL • PENDING • sFAILED

Parameter	Type	Length	Level of Requirement	Description
transfertype	string		Optional	The transfer type. Possible values are: • DEPOSIT • REVERSE_DEPOSIT • WITHDRAWAL • TRANSFER • CASH_IN • CASH_OUT • TRANSFER_TO_VOUCHER • TRANSFER_FROM_VOUCHER • PAYMENT_SEND • PAYMENT_RECEIVE • COMMISSIONING • FEE • PERIODIC_FEE • CANCEL_VOUCHER • VIEW_ACTIVE_TOKEN • VIEW_TOKEN • EXPIRE_VOUCHER • BALANCE_ENQUIRY • TRANSACTION_HISTORY_ENQUIRY • REMITTANCE • TRANSFER_TO_INVITATION • TRANSFER_FROM_INVITATION • CANCEL_INVITATION • CASH_OUT_ATM • TRANSFER_FROM_VOUCHER_ATM • PICKUP • REVERSAL • REVERSAL_FEE • REVERSAL_LOY • REVERSAL_COMMISSIONING • REVERSAL_TAX • REVERSAL_DISCOUNT • REVERSAL_PROMOTION • ADJUSTMENT • ADJUSTMENT_FEE • ADJUSTMENT_LOY • ADJUSTMENT_COMMISSIONING

Parameter	Type	Length	Level of Requirement	Description
startdate	dateTime	-	Optional	The start date and time of the transaction.
commitdate	dateTime	-	Optional	The date and time at which the transaction was completed.
fxrate	decimal	-	Optional	The foreign exchange rate.
initiatinguser	string		Optional	The execution ID of the user that initiated the transaction. It's a string, containing any number of letters or digits, at-signs, hyphens,underscores or periods (full stop). Other whitespace or punctuation characters are not allowed. An empty string is not allowed.
realuser	string		Optional	The execution ID of the real user that initiated the transaction. It's a string, containing any number of letters or digits, at-signs, hyphens,underscores or periods (full stop). Other whitespace or punctuation characters are not allowed. An empty string is not allowed.
initiatingaccountholder	string		Optional	The Identity of the account holder that initiated the transaction if it was initiated by an account holder
realaccountholder	string		Optional	The Identity of the real account holder that is effected by the transaction if it was initiated by an account holder.
from	string		Optional	The sending user's default FRI.
fromaccount	string		Optional	The sending account FRI.
fromamount	moneydetailstype	-	Optional	The amount withdrawn from the sending account.
fromfee	moneydetailstype	-	Optional	The fee charged from the sending account.
fromexternalfee	moneydetailstype	-	Optional	The external fee charged from the sending account.
fromdiscount	moneydetailstype	-	Optional	The discount amount that has been applied on the sending account.
frompromotion	moneydetailstype	-	Optional	The promotion amount that has been applied on the sending account
fromloyfee	decimal	-	Optional	The sender's loyalty points fee charged for the transaction.
fromloyreward	decimal	-	Optional	The sender's loyalty points reward earned for the transaction.

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Parameter	Type	Length	Level of Requirement	Description
fromnote	string		Optional	The sender's note.
fromavailable balance	moneydetail stype	-	Optional	The sending account's available balance after the transaction was completed.
fromtotalbala nce	moneydetail stype	-	Optional	The sending account's total balance after the transaction was completed.
fromcommitte dbalance	moneydetail stype	-	Optional	The sending account's committed balance after the transaction was completed.
fromaccounth older	string		Optional	The Identity of the sending accountholder.
to	string		Optional	The receiving user's FRI or the receiving account's FRI.
toaccount	string		Optional	The receiving account FRI.
toamount	moneydetail stype	-	Optional	The amount deposited into the receiving account.
tofee	moneydetail stype	-	Optional	The fee charged from the receiving account.
toexternalfee	moneydetail stype	-	Optional	The external fee charged from the receiving account.
topromotion	moneydetail stype	-	Optional	The promotion amount that has been applied on the receiving account.
toloyfee	decimal	-	Optional	The receiver's loyalty points fee charged for the transaction.
toloyreward	decimal	-	Optional	The receiver's loyalty points reward earned for the transaction.
tomessage	string		Optional	The receiver's message.
toavailablebal ance	moneydetail stype	-	Optional	The receiving account's available balance after the transaction was completed.
tocommittedb alance	moneydetail stype	-	Optional	The receiving account's committed balance after the transaction was completed.
instructionid	long	-	Optional	The financial instruction ID
maininstructio nid	long	-	Optional	The main instruction ID
externaltrans actionid	string		Optional	External transaction ID for the operation.

Parameter	Type	Length	Level of Requirement	Description
transactiontext	string		Optional	Text describing the transaction.
tototalbalance	moneydetailstype	-	Optional	The receiving account's total balance after the transaction was completed.
tofeerefund	moneydetailstype	-	Optional	Previous fee that was refunded to the receiver during this transaction.
fromfeerefund	moneydetailstype	-	Optional	Previous fee that was refunded to the sender during this transaction
frompromotionrefund	moneydetailstype	-	Optional	Previous sender promotion that was refunded to the system during this transaction.
topromotionrefund	moneydetailstype	-	Optional	Previous receiver promotion that was refunded to the system during this transaction.
todiscountrefund	moneydetailstype	-	Optional	Previous receiver discount that was refunded to the system during this transaction.
toaccountholder	string		Optional	The Identity of the receiving accountholder.

Table 2-54 describes parameters in a moneydetailstype type.

Table 2-54 Parameters in a **moneydetailstype** type.

Parameter	Type	Length	Level of Requirement	Description
amount	decimal	-	Mandatory	The monetary amount. Validated with IsAmount (allowNull=false).
currency	string	3	Mandatory	The currency, as an ISO 4217 formatted string. Validated with IsCurrencyCode. Parameter cannot be NULL.

Table 2-55 describes parameters in a loyalty type

Table 2-55 Parameters in a **loyalty** type

Parameter	Type	Length	Level of Requirement	Description
generated	decimal	-	Optional	The rewarded loyalty, generated amount.
consumed	decimal	-	Optional	The loyalty fee, consumed amount.
newbalance	decimal	-	Optional	The loyalty balance after execution.

Error Codes

For details about the error codes, see 2.7 API Error Response.

2.6.2 queryBalance

Process

Figure 2-22 Process of queryBalance
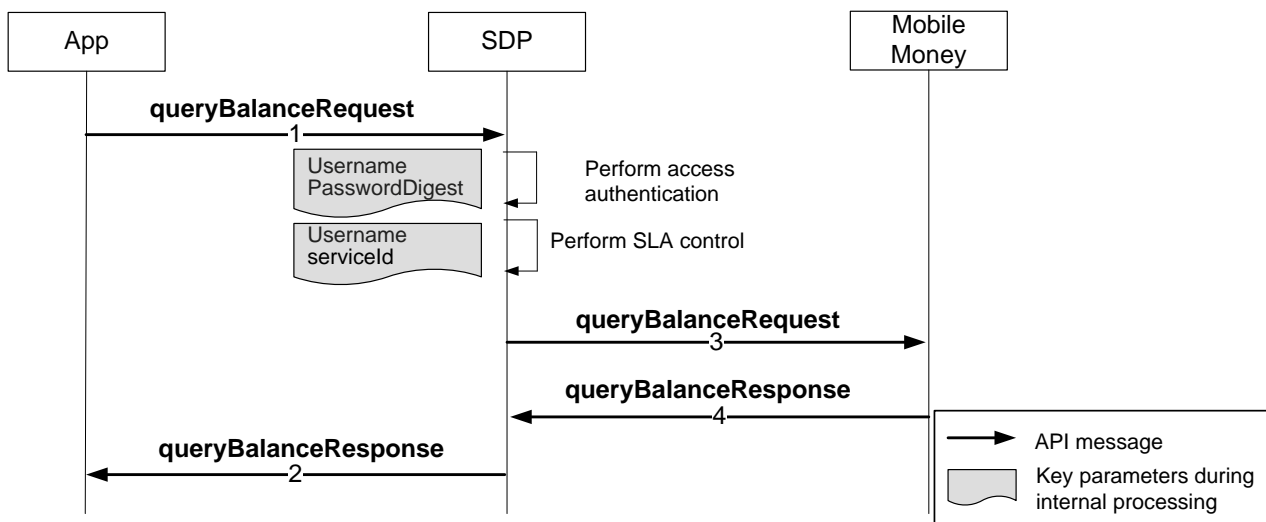
Function

Obtain the balance for a specific account

Request URI

The request URI is the destination URI of queryBalance messages sent by the App to the SDP. The URI is provided by the SDP in the following format:

http://IP:Port/mom/mt/queryBalance

In the format, IP and Port indicate the service IP address and HTTP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/queryBalance HTTP/1.1
Content-Type:text/xml
Content-Length:569
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
```

```
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2
Signature:43AD232FD45FF

<?xml version="1.0" encoding="UTF-8"?>
<v1_0:getbalancerequest xmlns:ns1="urn:iso:std:iso:20022:tech:xsd"
 xmlns:op="http://www.ericsson.com/em/emm/v1_0/common"
 xmlns:v1_0="http://www.ericsson.com/em/emm/financial/v1_0" version="1.0">
   <fri>fri0</fri>
   <quoteid>quoteid0</quoteid>
</v1_0:getbalancerequest>
```

Message Body Parameters

Table 2-56 describes parameters in a queryBalance message body.

Table 2-56 Parameters in a queryBalance message body

Parameter	Type	Length	Level of Requirement	Description
fri	string		Optional	Used for a specific account, for example commissioning account balance.
quoteid	string		Optional	The ID of the quote to use.

Response

A success response example:

```
<?xml version="1.0" encoding="UTF-8"?>
<v1_0:getbalanceresponse xmlns:ns1="urn:iso:std:iso:20022:tech:xsd"
 xmlns:op="http://www.ericsson.com/em/emm/v1_0/common"
 xmlns:v1_0="http://www.ericsson.com/em/emm/financial/v1_0">
   <balance>
       <amount>0</amount>
       <currency>currency0</currency>
   </balance>
   <loyalty>
       <generated>0</generated>
       <consumed>0</consumed>
       <newbalance>0</newbalance>
   </loyalty>
</v1_0:getbalanceresponse>
```

Table 2-57 describes parameters in a queryBalance response message body.

Table 2-57 Parameters in a queryBalance response message body

Parameter	Type	Length	Level of Requirement	Description
balance	long	-	Optional	Account holder's available account balance. Refer to Table-51
loyalty	loyalty	-	Optional	The loyalty information for the sender. Refer to Table-52

Error Codes

For details about the error codes, see 2.7 API Error Response.

2.6.3 validatePayee

Process

Figure 2-23 Process of validatePayee
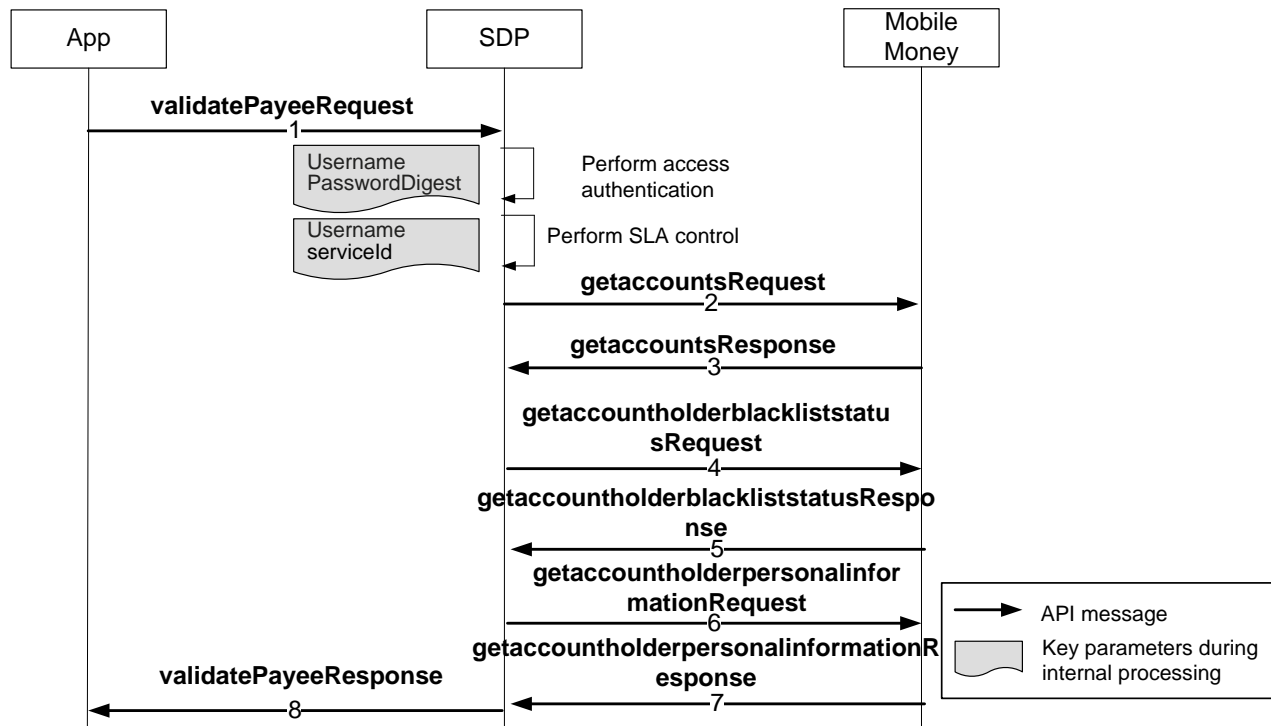
3rd Party invokes the validatePayee interface towards SDP to validate if customer account is registered, active and can transact. SDP will then invoke multiple APIs towards ECW, consolidate its responses and send validatePayee response to partner.

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Function

Validate the account holder information from 3rd party providers before executing a deposit or debiting customer account.

Request URI

The request URI is the destination URI of validatePayee messages sent by the App to the SDP. The URI is provided by the SDP in the following format:
http://IP:Port/mom/mt/validatePayee
In the format, IP and Port indicate the service IP address and HTTP port number of the API provided by the SDP. Contact carriers to obtain the IP address and port number.

Request Message Body Example

```
POST /mom/mt/validatePayee HTTP/1.1
Content-Type:text/xml
Content-Length:569
Host:127.0.0.1
Authorization: WSSE realm="SDP", profile="UsernameToken"
X-WSSE: UsernameToken Username="bob", PasswordDigest=" weYI3nXd8LjMNVksCKFV8t3rgHh3Rw==", Nonce="
WScqanjCEAC4mQoBE07sAQ==", Created="2012-07-26T11:31:26Z"
X-RequestHeader: request ServiceId="35000001000012", TransId=" 20090324123045100000123456789" ,
LinkId="A15Y89Z32T99", FA="8613912345678"
Cookie: sessionid=default8fcee064690b45faa9f8f6c7e21c5e5a
Msisdn: 861111111
X-HW-Extension: k1=v1;k2=v2

<?xml version="1.0" encoding="UTF-8"?>
<v1_0:validatepayeerequest xmlns:ns1="http://www.ericsson.com/em/emm/v1_0/common"
 xmlns:prc="http://www.ericsson.com/em/emm/provisioning/v1_0/common"
 xmlns:ns2="urn:iso:std:iso:20022:tech:xsd"
 xmlns:v1_0="http://www.ericsson.com/em/emm/provisioning/v1_0">
   <identity>identity0</identity>
   <extension>
   </extension>
</v1_0:validatepayeerequest>
```

Message Body Parameters

Table 2-58 describes parameters in a validatePayee message body.

Table 2-58 Parameters in a validatePayee message body

Parameter	Type	Length	Level of Requirement	Description
identity	string		Mandatory	A valid identity associated with the account holder.
extension	extensiontype	-	Optional	Used for sending any additional

Parameter	Type	Length	Level of Requirement	Description
				information to Partner. For details about extensiontype, see Table 2-29.

Response

A success response example:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<v1_0:validatepayeeresponse xmlns:ns1="http://www.ericsson.com/em/emm/v1_0/common"
 xmlns:prc="http://www.ericsson.com/em/emm/provisioning/v1_0/common"
 xmlns:ns2="urn:iso:std:iso:20022:tech:xsd"
 xmlns:v1_0="http://www.ericsson.com/em/emm/provisioning/v1_0">
   <transactionStatus>false</transactionStatus>
   <accountslist>
      <account>
         <accountstatus>ACTIVE</accountstatus>
         <accounttype>MOBILE_MONEY</accounttype>
         <profilename>profilename0</profilename>
         <description>description0</description>
      </account>
      <account>
         <accountstatus>ACTIVE</accountstatus>
         <accounttype>MOBILE_MONEY</accounttype>
         <profilename>profilename1</profilename>
         <description>description1</description>
      </account>
   </accountslist>
   <blackliststatus>BLACKLISTED</blackliststatus>
   <information>
      <birth>
         <date>2006-05-04</date>
      </birth>
   </information>
   <extension>
   </extension>
</v1_0:validatepayeeresponse>
```

Table 2-59 describes parameters in a validatePayee response message body.

Table 2-59 Parameters in a validatePayee response message body

Parameter	Type	Length	Level of Requirement	Description
transactionStatus	boolean	-	Mandatory	True/False based on overall response.

Parameter	Type	Length	Level of Requirement	Description
accountslist	accountslist	-	Conditional	Returns all accounts connected to a specific account holder. Mandatory for true/success response. For details about accountslist, see Table 2-60.
blackliststatus	blackliststatus	-	Conditional	Returns the black list status of the identity sent in the request. Mandatory for true/success response. String based enumeration, Possible values are: • BLACKLISTED • WHITELISTED • NONE
information	personalinformation	-	Conditional	Returns personal information connected to the identity sent in the request. Mandatory for true/success response. For details about personalinformation, see Table 2-62.
extension	extensiontype	-	Optional	Used for sending any additional information to Partner. For details about extensiontype, see Table 2-29.

Table 2-60 describes parameters in an accountslist type.

Table 2-60 Parameters in in an accountslist type

Parameter	Type	Length	Level of Requirement	Description
account	accountdetailstype[0…unbouned]	-	Optional	Contains information about the account and its balance. For details about accountdetailstype, see Table 2-61.

Table 2-61 describes parameters in an accountdetailstype type.

Table 2-61 Parameters in in an accountdetailstype type

Parameter	Type	Length	Level of Requirement	Description
accountstatus	accountstatus		Optional	The status of the account. accountstatus is string based enumeration, Possible values are: • ACTIVE • BLOCKED • CLOSED • UNAVAILABLE
accounttype	accounttype		Optional	The type of account. accounttype is string based enumeration, Possible values are: • MOBILE_MONEY • COMMISSIONING • LOYALTY_POINTS • TAX • LOAN • UNKNOWN
profilename	xs:string		Optional	The name of the profile of the account.
description	xs:string		Optional	Description of the account.

Table 2-62 describes parameters in a personalinformation type.

Table 2-62 Parameters in in a personalinformation type

Parameter	Type	Length	Level of Requirement	Description
birth	birthinformation		Optional	The account holder's birth information. For details about birthinformation, see Table 2-63.

Table 2-63 describes parameters in a birthinformation type.

Table 2-63 Parameters in in a birthinformation type

Parameter	Type	Length	Level of Requirement	Description
date	xs:date	-	Optional	The account holder's birth date. minDate=1890-01-01

Error Codes

For details about the error codes, see 2.7 API Error Response.

2.7 API Error Response

When an error occurs, the server sends an error response to the client. This topic provides an error response example and describes parameters in the response.

Example

```
<tns:errorResponse xmlns:tns="http://www.ericsson.com/lwac" errorcode="errorcode0">
    <arguments name="name0" value="value0"/>
    <arguments name="name1" value="value1"/>
</tns:errorResponse>
```

Error Code List

Table 2-64 defines the error code.

Table 2-64 Parameters in error response message body

errorCode	arguments.name	arguments.value	Exception Scene
SYSTEM_OVERLOAD	resource_name	Name of the resource with dynamic flow control errors, such as CPU, memory, and queue.	Dynamic flow control error
SYSTEM_OVERLOAD	item_name	Name of the item with static flow control errors, such as SMS and MMS.	Static flow control error
EXCEED_LICENSE	item_name	Name of the item with license control errors, such as SMS and MMS.	License control error
SYSTEM_ERROR	connection	Error details, such as **internal connection broken** or **waiting response timeout**.	Internal message interaction error, such as disconnection or timeout
AUTHORIZATION_FAILED	SPID	SP ID, which is the value of **UserName** in the X-WSSE header.	Access authentication failure
NOT_AUTHORIZED	SPID ServiceID	SP ID, service ID, or API name.	Capability authentication failure

errorCode	arguments.name	arguments.value	Exception Scene
	ApiName		
MANDATORY_FIELD_MISSING	Parameter_name	Name of a parameter that fails to be verified.	Parameter verification failure due to mandatory parameter missing
INVALID_PARAMETER	Parameter_name	Name of a parameter that fails to be verified.	Parameter verification failure due to incorrect format
VIOLATE_SLA	SPID ServiceID SLAID	SP ID, service ID, or SLA ID.	SLA control failure
NO_ROUTE	route	Route information not found.	Route query failure
CONNECTION_ERROR	connection	External connection error details, such as **connection broken** or **waiting response timeout**.	External message interaction error, such as disconnection or timeout
ACCOUNTHOLDER_NOT_FOUND	-	-	Account holder could not be found.
ACCOUNTHOLDER_WITH_FRI_NOT_FOUND	-	-	Account holder with given FRI could not be found.
ACCOUNTHOLDER_WITH_MSISDN_NOT_FOUND	-	-	Account holder with given MSISDN could not be found.
AMOUNT_INVALID	-	-	Either amount and currency are incompatible or currency is invalid.
AUTHORIZATION_ACCOUNT_NOT_ALLOWED_TO_PERFORM_ACTION	-	-	Account holder is not allowed to perform this operation.
AUTHORIZATION_ACCOUNTHOLDER_NOT_ACTIVE	-	-	Account holder is not active.

errorCode	arguments.name	arguments.value	Exception Scene
AUTHORIZATION_FAILED	-	-	Authorization failed.
AUTHORIZATION_INVALID _ACCOUNT _TYPE_COMBINATION	-	-	Performing this operation with this account type combination is not allowed.
AUTHORIZATION_SENDE R_ACCOUNT _NOT_ACTIVE	-	-	Senders account is not active.
COULD_NOT_PERFORM_ OPERATION	-	-	Could not perform the operation. Additional reason attached.
COULD_NOT_PERFORM_ TRANSACT ION	-	-	Transaction could be performed.
CURRENCY_NOT_SUPPO RTED	-	-	Given currency is not supported in the system.
DATEFORMAT_INVALID	-	-	Date string could not be parsed.
EXPIRED_OR_INVALID_T RANSACTIO N_ID	-	-	Transaction id is either invalid or this transaction has expired.
FIELD_TOO_LONG	-	-	Data in element is too long.
FRI_INVALID	-	-	FRI string is incorrectly formatted.
INCORRECT_PASSWORD	-	-	Incorrect password.
INVALID_CURRENCY	-	-	Currency is either not valid or used incorrectly.
INVALID_FIELD_VALUE	-	-	Element has invalid format.
MANDATORY_FIELD_MIS SING	-	-	Mandatory element is missing.
NOT_AUTHORIZED	-	-	The logged in user does not have sufficient permissions to perform this operation.
NOT_ENOUGH_FUNDS	-	-	Not enough funds to perform operation.
OTHER_FINANCIAL_ERR OR	-	-	Other financial error.

errorCode	arguments.name	arguments.value	Exception Scene
PREAPPROVAL_NOT_FOUND	-	-	The pre-approval with given id could not be found.
REFERENCE_ID_ALREADY_IN_USE	-	-	This client reference id is already used.
REFERENCE_ID_NOT_FOUND	-	-	A client reference with this id could not be found.
REQUIRED_FIELD_MISSING	-	-	Element needed for this invocation is missing.
RESOURCE_NOT_ACTIVE	-	-	Required resource is not active.
RESOURCE_NOT_FOUND	-	-	FRI not found.
SERVICE_TEMPORARILY_UNAVAILABLE	-	-	The operation could not be performed right now but might succeed later.
SESSION_INVALID	-	-	The session has timed out.
SOURCE_AND_TARGET_ARE_THE_SAME	-	-	Source is the same as the target.
SOURCE_NOT_FOUND	-	-	Source FRI not found.
TARGET_NOT_FOUND	-	-	Target FRI not found.
TRANSACTION_ID_OR_ORIGINAL_TRANSACTION_ID_MISSING	-	-	Neither transaction id nor original transaction id was given.
TRANSACTION_NOT_COMPLETED	-	-	Transaction has not been completed and its state is either Pending or Failed.
TRANSFER_TYPE_AND_ACCOUNT_DO_NOT_MATCH	-	-	Receiving account is invalid for this type of transaction.

03

3.1 The Currency and Atomic Charging Unit of each OpCo country

Country Name	Currency	Atomic Charging Unit
Afghanistan	AFN	pul
Benin	XOF	N/A
Bissau	CFA	N/A
Cameroon	XAF	XAF
Cote d'Iviore	XOF	XOF
Cyprus	EUR	cent
Ghana	GHS	Pesewa (1GHS = 100Pesewa)
Guinea	GNF(Guinea Franc)	N/A
Liberia	LRD(Liberia Dollar)	N/A
N Sudan	SDG	Piaster
Nigeria	NGN	Kobo
Rwanda	Rwandan Franc (RWF)	RWF
SA	ZAR	N/A
Swaziland	SZL	cent
Uganda	Ugandan shilling (Code UGX)	UGX
Yemen	Yemeni Riyal	Fils (1 Riyal = 100 Fils)
Zambia	ZMK	ngwee, 1ZMK = 100Ngwee

3 Appendix

3.2 ISO 4217 Codes for the representation of currencies and funds

ENTITY	CURRENCY	ALPHABETI CCODE	NUMERI CCODE
Afghanistan	Afghani	AFA	4
Benin	CFA Franc BCEAO	XOF	952
Botswana	Pula	BWP	72
Cameroon	CFA Franc BEAC	XAF	950
Congo	CFA Franc BEAC	XAF	950
Cyprus	Cyprus Pound	CYP	196
Ethiopia	Ethiopian Birr	ETB	230
Ghana	Cedi	GHC	288
Guinea	Guinea Franc	GNF	324
Guinea-Bissau	Guinea-Bissau Peso	GWP	624
	CFA Franc BCEAO	XOF	952
Liberia	Liberian Dollar	LRD	430
Nigeria	Naira	NGN	566
Rwanda	Rwanda Franc	RWF	646
South Africa	Rand	ZAR	710
Sudan	Sudanese Dinar	SDD	736
Swaziland	Lilangeni	SZL	748
Uganda	Uganda Shilling	UGX	800
Yemen	Yemeni Rial	YER	886
Zambia	Kwacha	ZMK	894

3 Appendix

3.3 OpCoID List

MTN OpCo Name	OpCoID Value
Afghanistan	9301
Benin	22901
Bissau	24501
Botswana	26701
Cameroon	23701
Congo	24201
CoteD'Ivoire	22501
Cyprus	35701
Ghana	23301
Guinea Republic	22401
Liberia	23101
Nigeria	23401
Rwanda	25001
South Africa	2701
Sudan North	21101
Sudan South	24901
Swaziland	26801
Syria	96301
Uganda	25601
Yemen	96701
Zambia	26001