



SOA SERVICE SPECIFICATION

Payments_3_0

Service Id: 2005

Version 1.0

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1 Business Context

Payments_3_0 service would be used by the consuming application to initiate payment of consumers using their e-money account.

It provides for payments from a Merchant's wallet to a consumer's wallet or between wallets.

The service will be exposed on AirtelTigo middleware platform for it to be used by the consuming applications.

2 Abbreviations & Definitions

Term	Definition
SOA	Service Oriented Architecture.
SOAP	Simple Object Access Protocol
OSB	Oracle Service Bus
OWSM	Oracle Web Service Manager
API	Application Program Interface
CBS	Convergent Billing System
DRC	Democratic Republic of Congo
1..1	Mandatory element
0..1	Optional element

3 Service Overview

Payments_3_0 service provides for the payment of consumers using their e-money account.

The service houses the Paybill operation and sends a callback with the transaction results to the calling application after updating the Middleware DB.

3.1 Namespaces

Namespace URI	Prefix
http://xmlns.tigo.com/MFS/PaymentsRequest/V1	ns1
http://xmlns.tigo.com/MFS/PaymentsResponse/V1	ns2
http://xmlns.tigo.com/MFS/Payments/V1	pss
http://www.w3.org/2001/XMLSchema	xsd

http://xmlns.tigo.com/RequestHeader/V3	hdr
http://xmlns.tigo.com/ParameterType/V2	par
http://xmlns.tigo.com/ResponseHeader/V3	hdr
http://xmlns.tigo.com/CoreData/V1	cor
http://xmlns.tigo.com/MFS/PaymentsFault/V1	pyf

3.2 PayBill

PayBill operation will be used to initiate payment from an e-money account.

3.2.1 Input Message: PayBillRequest request

Element	Element Type	Occurrence	Description
PayBillRequest	ns1: PayBillRequest	1..1	The details containing the parameters expected by the backend API.

3.2.2 Output Message: PayBillResponse response

Element	Element Type	Occurrence	Description
PayBillResponse	ns2: PayBillResponse	1..1	Response from the backend.

3.2.3 Referenced Fault

Element	Element Type	Occurrence	Description
generalResponseMsg	hdr:ResponseHeader	0..1	Backend and service fault is wrapped into SOAP fault.

3.2.4 Message/Data Security

SSL/TLS Security and Consumer authentication will be used to ensure service security.

3.2.5 Service Security

The Consuming Applications must authenticate against the OSB layer using OWSM-Security by providing their username and password. The password is in plain text format. The username and password are issued by the Service Factory team to the consuming application.

The authentication credentials (OWSM - Security username and password) must be stored in a secure manner and encrypted whilst stored on the consuming application platform.

Username and password have to be sent as part of SOAP Header while invoking this service. Sample SOAP Header is as follows:

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope"
xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-secext-1.0.xsd">

  <soapenv:Header>

    <wsse:Security>

      <wsse:UsernameToken>

        <wsse:Username>username</wsse:Username>

        <wsse:Password>password</wsse:Password>

      </wsse:UsernameToken>

    </wsse:Security>

  </soapenv:Header>

  <soapenv:Body>

    <request body>

  </soapenv:Body>

</soapenv:Envelope>

```

3.2.6 Success Codes

On receiving the success response from backend, the PayBill API will return a success response code.

Code	Description
payments-2005-0000-S	The Payment Is Done successfully.

3.2.6 Error Codes

This operation returns errors or failures in the standard SOAP format as per the xsd. The error codes and short descriptions are listed below.

Error No	Error Description	Error Category
payments-2005-4501-V	Invalid Request. Please check the input and resubmit.	OSB Validation Error
payments-2005-3001-E	<Backend error description> or Request was not successful. Backend error has occurred.	Backend Error. Any unmapped backend error would be returned under this error code.
payments-2005-2501-F	One or more back ends may be down. Please try again later.	Connection Error.

payments-2005-2502-F	Service call has timed out. Please resubmit your request later.	Timeout error.
payments-2005-2505-F	Service Authentication Failed.	OWSM Authentication Failure.
payments-2005-3602-E	Internal service error.	Internal service error.
payments-2005-3999-E	Unknown/Uncaught error has occurred.	To be mapped in unknown section. The failure reason is not defined.
payments-2005-4502-V	Invalid ISD code passed in the MSISDN	When an invalid ISD (Country) code is sent in the MSISDN.
payments-2005-4503-V	Web service implementation is not available for this country.	When the country in the request is other than GHA
payments-2005-4504-V	Required additional parameters are not passed in the request.	When required additional parameters are not passed in the request
payments-2005-4003-V	CompanyId and consumerId does not match	When companyID and consumerID for the consuming application do not match.
payments-2005-4002-V	ProductId not passed in additionalParameters in the request.	When Product id is not passed in the additional parameters
payments-2005-4511-V	Username cannot be passed in the request.	When username is passed in the request instead of MSISDN
payments-2005-4505-V	Duplicate additional parameters passed in the request.	When duplicate additional parameters passed in the request
payments-2005-4506-V	Invalid consumerId passed in the request.	When consumerID passed in the request is other than the defined values.
payments-2005-2506-F	Consumer is not authorized to use the service.	When a valid consumer is trying to access this API for whom there is no authorization

payments-2005-3014-V	Profile does not exist.	When the calling Merchant's Profile does not exist in the config file
payments-2005-3120-E	DB Insertion failed.	Failure when updating the transaction record in Middleware DB
payments-2005-4017-V	Duplicate Paymentreference passed in the request	When an already used payment reference is passed in the request by the same Merchant.
payments-2005-4508-V	Please pass PIN in the request.	When Payer's PIN is not passed in the request.
payments-2005-4516-V	Invalid Amount passed in the request.	When invalid amount passed in the request
payments-2005-4517-V	Invalid AuthorizationCode passed in the request.	When invalid AuthorizationCode is passed in the request
payments-2005-4518-V	Invalid source wallet passed in the request.	Invalid source wallet passed in the request.

3.2.8 Sample Messages

Sample Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://xmlns.tigo.com/MFS/ReverseTransactionRequest/V1"
xmlns:v3="http://xmlns.tigo.com/RequestHeader/V3"
xmlns:v2="http://xmlns.tigo.com/ParameterType/V2"
xmlns:cor1="http://soa.mic.co.af/coredata_1">
  <soapenv:Header xmlns:wss="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wsssecurity-secext-1.0.xsd">
    <cor1:debugFlag>true</cor1:debugFlag>
    <wss:Security>
      <wss:UsernameToken>
        <wss:Username>test_mw</wss:Username>
        <wss:Password>tinds34</wss:Password>
      </wss:UsernameToken>
    </wss:Security>
  </soapenv:Header>
  <soapenv:Body>
    <v1:payBillRequest xmlns:v1="http://xmlns.tigo.com/MFS/PaymentsRequest/V1">
      <v3:RequestHeader>
```



```

    <v3:GeneralConsumerInformation>
      <v3:consumerID>AIRTELTIGO</v3:consumerID>
      <!--Optional:-->
      <v3:transactionID>123334</v3:transactionID>
      <v3:country>GHA</v3:country>
      <v3:correlationID>432331</v3:correlationID>
    </v3:GeneralConsumerInformation>
  </v3:RequestHeader>
  <v1:requestBody>
    <v1:paymentreference>301545001108885</v1:paymentreference>
    <v1:sourceWallet>
      <!--You have a CHOICE of the next 2 items at this level-->
      <v1:msisdn>233512340159</v1:msisdn>
    </v1:sourceWallet>
    <v1:targetWallet>
      <!--You have a CHOICE of the next 2 items at this level-->
      <v1:msisdn>233271234444</v1:msisdn>
    </v1:targetWallet>
    <!--Optional:-->
    <v1:pin>xxxx</v1:pin>
    <!--Optional:-->
    <v1:companyId>TEST1234</v1:companyId>
    <v1:authorizationcode>dGVzdF9wasd19vc2l6dGlnbzMzQ=</v1:authorizationcode>
    <v1:amount>1</v1:amount>
  </v1:requestBody>
</v1:payBillRequest>
</soapenv:Body>
</soapenv:Envelope>

```

Sample Response

```

<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header xmlns:wss="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wsssecurity-secext-
1.0.xsd" xmlns:cor1="http://soa.mic.co.af/coredata_1" xmlns:v1="http://xmlns.tigo.com/MFS/Paym
entsRequest/V1" xmlns:v3="http://xmlns.tigo.com/RequestHeader/V3" xmlns:v2="http://xmlns.tigo
.com/ParameterType/V2">
    <cor1:SOATransactionID>d1f2eec9-6508-413b-a912-3397fda2002b</cor1:SOATransactionID>
  </soapenv:Header>
  <soapenv:Body xmlns:cor1="http://soa.mic.co.af/coredata_1" xmlns:v1="http://xmlns.tigo.com/
MFS/PaymentsRequest/V1" xmlns:v3="http://xmlns.tigo.com/RequestHeader/V3" xmlns:v2="http://
xmlns.tigo.com/ParameterType/V2">
    <v11:payBillResponse xmlns:v11="http://xmlns.tigo.com/MFS/PaymentsResponse/V1">
      <v31:ResponseHeader xmlns:v31="http://xmlns.tigo.com/ResponseHeader/V3">

```

```

    <v31:GeneralResponse>
      <v31:correlationID>1111</v31:correlationID>
      <v31:status>OK</v31:status>
      <v31:code>payments-2005-0000-S</v31:code>
      <v31:description>The Payment Is Done successfully</v31:description>
    </v31:GeneralResponse>
  </v31:ResponseHeader>
  <v11:responseBody>
    <v11:transactionId>BM200623.1305.D00284</v11:transactionId>
  </v11:responseBody>
</v11:payBillResponse>
</soapenv:Body>
</soapenv:Envelope>

```

Sample Fault

```

<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-secext-
1.0.xsd" xmlns:cor1="http://soa.mic.co.af/coredata_1" xmlns:v1="http://xmlns.tigo.com/MFS/Paym
entsRequest/V1" xmlns:v3="http://xmlns.tigo.com/RequestHeader/V3" xmlns:v2="http://xmlns.tigo
.com/ParameterType/V2">
    <cor1:SOATransactionID>869c0f0c-c985-492a-9688-c69eef058267</cor1:SOATransactionID>
  </soapenv:Header>
  <soapenv:Body xmlns:cor1="http://soa.mic.co.af/coredata_1" xmlns:v1="http://xmlns.tigo.com/
MFS/PaymentsRequest/V1" xmlns:v3="http://xmlns.tigo.com/RequestHeader/V3" xmlns:v2="http://
xmlns.tigo.com/ParameterType/V2">
    <soapenv:Fault>
      <faultcode xmlns:env="http://schemas.xmlsoap.org/soap/envelope">env:Server</faultcode>
      <faultstring>Duplicate Paymentreference passed in the request.</faultstring>
      <detail>
        <ns1:PaymentsFault xmlns:ns1="http://xmlns.tigo.com/MFS/PaymentsFault/V1" xmlns:cm
n="http://xmlns.tigo.com/ResponseHeader/V3">
          <cmn:ResponseHeader>
            <cmn:GeneralResponse>
              <cmn:correlationID>1111</cmn:correlationID>
              <cmn:status>ERROR</cmn:status>
              <cmn:code>payments-2005-4017-V</cmn:code>
              <cmn:description>Duplicate Paymentreference passed in the request.</cmn:descript
ion>
            </cmn:GeneralResponse>
          </cmn:ResponseHeader>
        </ns1:PaymentsFault>

```

```

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

```

3.3 XML Schema Data Type Definition

3.3.1 Input message: PayBillRequest Structure

Element	Type	Occurrence	Description
RequestHeader	hdr:RequestHeader	1..1	This group of data contains information about the system that needs to consume the exposed service by the OSB.
requestBody	py1:requestBody	1..1	Identifies the request elements related to the functionality of the service

3.3.2 Output message: PayBillResponse Structure

Element Name	Element Type	Occurrence	Description
ResponseHeader	hdr:ResponseHeader	1..1	This group of data contains information about the status of the service call along with transaction id
responseBody	py2: responseBody	1..1	Identifies the response of the service to the calling application

3.3.3. RequestHeader Structure

Element	Type	Occurrence	Description
GeneralConsumerInformation	Cmn:GeneralConsumerInfoType	1..1	Request header details.

3.3.4 ResponseHeader Structure

Element Name	Element Type	Occurrence	Description
GeneralResponse	Cmn:GeneralResponseHeaderType	1..1	Response Header details.

3.3.5 GeneralConsumerInfoType Structure

Element Name	Element Type	Occurrence	Description
consumerID	xsd:string	1..1	It is a unique identifier of the consumer of the service.
transactionID	xsd:string	0..1	Identifies the kind or type of transaction or operation that is undertaken in the consuming application.
country	cmn:CountryContent	1..1	International country code (ISO 3166-1 alpha-3 format). Please refer to Appendix for the supported countries.
correlationID	xsd:string	1..1	Unique identifier of the transaction by the calling application.

3.3.6 GeneralResponseHeaderType Structure

Element Name	Element Type	Occurrence	Description
correlationID	xsd:string	0..1	Unique identifier of the transaction.
status	cmn:StatusContent	0..1	State of the transaction Enumeration values OK ERROR.
code	xsd:string	0..1	Code number agreed to identify the success or fail event in the transaction
codeType	xsd:string	0..1	Identifier of the type code agreed under the catalog (It could be on a database level or confluence documentation defined).
description	xsd:string	0..1	Technical and brief description of the error.
additionalInfo	Xsd:string	0..1	This element is used in case of backend error to return any additional information about the error. In this service, backend service name would be returned in this element.

3.3.7 RequestBody Structure

PayBillRequest

Element	Type	Occurrence	Description
paymentReference	xsd:string	1..1	Unique identifier sent from the calling application to track the transaction.
sourceWallet	tns:userwalletType	1..1	Payer username/MSISDN
targetWallet	tns:userwalletType	1..1	Payee username/MSISDN
password	xsd:string	1..1	The PIN/password of the payer.
companyId	xsd:string	1..1	companyId of the calling application. To be provided by the service factory team.
amount	xsd:double	1..1	Payment amount
AuthorizationCode		1..1	Unique Authorizationcode of merchant.
additionalParameters	par:ParameterType	0..n	Additional parameters are optional and reserved for any further use.

3.3.8 ParameterType Structure

Element	Type	Occurrence	Description
parameterName	xsd:string	1..1	The name of the parameter.
parameterValue	xsd:string	1..1	Value of the parameter.

3.3.9 userwalletType

Element	Type	Occurrence	Description
msisdn	cor:msisdnType	1..1	The Payer/Payee MSISDN in 12 digits to format to be passed in the request. Format: For Ghana – 233123456789.
username	xsd:string	0..1	Username

3.3.10 ResponseBody Structure

PayBillResponse

Element	Type	Occurrence	Description
transactionId	xsd:string	1..1	Unique ID of the payment transaction from the MFS platform.
additionalResults	par:ParameterType	0..n	Any additional results. Reserved for any future use.

4 Appendix

4.1 Country codes

Country code	Country name
TCD	Chad
COD	Democratic Republic of Congo
GHA	Ghana
MUS	Mauritius
RWA	Rwanda
SEN	Senegal
TZA	Tanzania

4.1 MSISDN format

Country name	MSISDN format	Sample
Ghana	Format	233123456789
Tanzania	International format	255123456789

4.2 Country Currency

Country name	Currency	ISO Code	Fractional Unit	Amount Denomination to be used	Number to basic
Democratic Republic of Congo	Congolese franc	CDF	Unit		1000
Senegal	West African CFA franc	XOF	Centime		100
Ghana	Ghana Cedi	GHS	Pesewa	Ghana Cedi	100
Tanzania	Tanzanian shilling	TZS	Cent		100