INSIGHT PAYMENT GATEWAY - SPECIFICATION DOCUMENT

C2B Wrapper

Version 1.2

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Version History

Version	Date	Changed By	Change summary
1.0.	17-Jul-18	Christian Belewete	Initial draft
1.1.	17-Jul-18	Christian Belewete	Adding Test details
1.2.	20-Aug-18	Christian Belewete	Updating Service flow section

Contents

1   Introduction

The iNSight Payment Gateway sits in front of G2 which manages a customer's wallet. This wallet, in the case of mobile network operators, the "Mobile Money Platform" is physically separated from the payment gateway (sometimes also referred to as a "Broker" or an "Orchestration Layer") providing the benefit of a simplified interface and abstraction of both function and security.

1.1   Prerequisites

In order to issue any query against the iNSight Payment Gateway, a valid session token is required

The following data must be supplied by the owner of the system in order to be able to communicate with iNSight Payment Gateway.

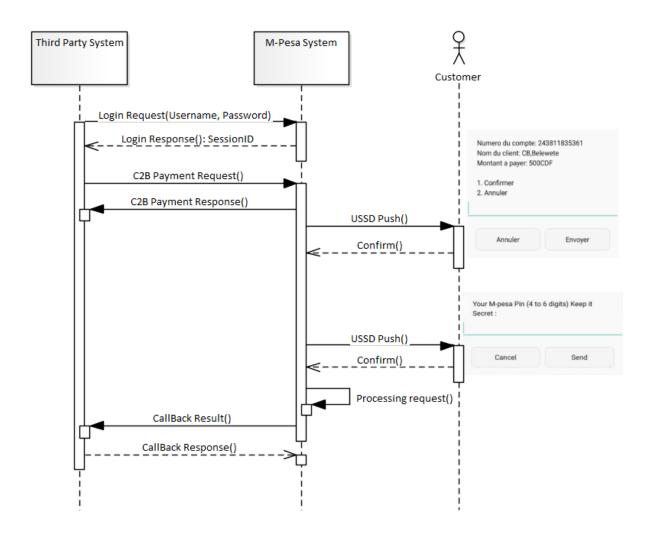- Username
- Password

Requests must be posted to iNSight Payment Gateway via the SOAP web service. The web service will be accessible via HTTPs only. The operation will be either Synchronous or Asynchronous depending on what is exposed by the Mobile Money platform (a platform that employs a Synchronous approach could be exposed via iNSight Payment Gateway as either Synchronous or Asynchronous.

2   Service flow

Login in API call in synchronous mode:
1. 3rd party will login into the iPG using shared credentials
   a. iPG will determine if the 3rd party is registered to use the service.
2. When the iPG receives the request for the login, the iPG will send a session Token to a registered 3rd party in synchronous mode.

C2B payment API call in asynchronous mode :
3. The 3rd party will then initiate a C2B payment using the token received in the login event
4. iPG will receive the C2B request and send a response acknowledging the request was received

5. iPG will then initiate a USSD PUSH to the customer with the 3rd party transaction details, and prompt them to confirm the transaction, or cancel the transaction
   a. On cancellation, an error will be sent to the 3rd party via chosen channel (Email/SMS/HTTP POST).
6. Should the customer confirm the transaction, the iPG will request the customer to enter their PIN
7. iPG will encrypt the PIN and use the PIN in conjunction with gathered information from 3rd party to initiate a C2B paybill request to G2. The iPG will receive a response with a conversationID which is the primary key and awaits the result which will be asynchronous.
8. iPG will then receive a result from G2 asynchronously.
   a. If the transaction fails an SMS will be sent to the customer alerting them of the failure and an error will be returned to the 3rd party via chosen channel (Email/SMS/HTTP POST).
9. If the transaction is successful, an SMS will be sent to the Customer alerting them of the successful transaction and a success response will be sent to the 3rd party via chosen channel (Email/SMS/HTTP POST).

3   Test details

URL	https://uatipg.m-pesa.vodacom.cd:8091/insight/SOAPIn
Internal IP	10.90.104.50
Public IP	41.78.195.169
Event ID Login	2500
Evenit ID C2B Payment	80049
CommandID	InitTrans_oneForallC2B
ShortCode/ServiceProviderCode	8337

4   API Calls Parameters

4.1   Login

4.1.1   Request Parameters

Name	Notes	Type
Header		
`EventID`	*ID of the event to be actioned on Transaction Switch. This is a fixed value for Login of 2500*	Integer **Required**
Request Data Items		
`Username`	*Username to validate*	String **Required**
`Password`	*Password of the user to validate*	String **Required**

4.1.2   Response Parameters

Name	Notes	Type	Sample Values
Event Info			
`code`	*iNSight process status code*	Integer	`3, 4`
`description`	*Description of the **iNSight** process status code*	String	`Processed, Error`
`detail`	*Additional information about **iNSight** process*	String	`Processed, Authentication Failed`
Request Data Items			
`Username`	*Username that was evaluated*	String	`Same as value sent in request`
`Password`	*Password of the user that was evaluated*	String	`Same as value sent in request`
Response Data Items			
`SessionID`	*In the case of a valid login, the session id to be used as the Token ID for future event calls*	String	`da6be0443e53411ebd90 ad0aec7a97ab`

4.2 C2B Payment

4.2.1 Request Parameters

Name	Notes	Type
Header		
Token	Token received from a Login request	String **Required**
EventID	ID of the event to be actioned on Transaction Switch. This a fixed value of 80049	Integer **Required**
Request Data Items		
ServiceProviderName	Name of the service provider. For example: THIRDPARTY Name	String **Required**
CustomerMSISDN	MSISDN of the customer	String **Required**
Currency	Currency Code for the transaction. For example: CDF or USD	String **Required**
Amount	Amount of the said currency to transfer from the Third-Party to the customer	String **Required**
TransactionDateTime	Date of the transaction. Format YYYYMMDD HH24MiSS.	Date **Optional**
Shortcode	Shortcode of the Third-Party in M-Pesa where funds will move from.	String **Required**
CustomerAccountNumber	Customer's Third-Party account number.	String **Optional**
Language	Customer's language choice.	String **Required**
ThirdPartyReference	The Third-Party's Transaction ID.	String **Required**
CallBackChannel	The channel used to send the results of the transaction to the third party. 1. Synchronous (default and only available if Mobile Money system is synchronus) 2. Async HTTP Post 3. Async SMS 4.Async eMail	String **Required**
CallBackDestination	Dependant on CallBackChannel Should be populated with relevant URL, MSISDN (format example 243821111111) or email address	String **Required**
CommandID	M-Pesa CommandID. M-Pesa team to provide.	String **Required**
InitiatorIdentifier	Third-Party's Identifier. M-Pesa team to provide.	String **Required**
SecurityCredential	Third-Party's Password. M-Pesa team to provide.	String **Required**

4.2.2   Response Parameters

Name	Notes	Type	Sample Values
Event Info			
`Code`	*iNSight process status code*	Integer	`3, 4`
`Description`	*Description of the **iNSight** process status code*	String	`Processed, Error`
`Detail`	*Additional information about **iNSight** process*	String	`Authentication Failed, Session Expired`
`TransactionID`	*Transaction ID from the payment gateway*		String
Request Data Items			
`ServiceProviderName`	String		`Same as value sent in request`
`CustomerMSISDN`	String		`Same as value sent in request`
`Currency`	String		`Same as value sent in request`
`Amount`	String		`Same as value sent in request`
`TransactionDateTime`	Date		`Same as value sent in request`
`Shortcode`	String		`Same as value sent in request`
`CustomerAccountNumber`	String		`Same as value sent in request`
`Language`	String		`Same as value sent in request`
`ThirdPartyReference`	String		`Same as value sent in request`
`ServiceProviderName`	String		`Same as value sent in request`
`CallBackChannel`	String		`Same as value sent in request`
`CallBackDestination`	String		`Same as value sent in request`
`CommandID`	String		`Same as value sent in request`
`InitiatorIdentifier`	String		`Same as value sent in request`
`SecurityCredential`	String		`Same as value sent in request`
Response Data Items			
`Insight_txid`	*The unique transaction ID from iPG*	String	`12sdxq3634dadsas242`
`ResponseCode`	*Code indicating the result of the transaction. 0 –Received request successfully. -1 – Transaction will not be processed. Try again later.*	String	`0, -1, -2`

5 API Calls Samples

5.1 Login

5.1.1 Request

```xml
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:soap="http://www.4cgroup.co.za/soapauth"
        xmlns:gen="http://www.4cgroup.co.za/genericsoap">
        <soapenv:Header>
                <soap:EventID>2500</soap:EventID>
        </soapenv:Header>
        <soapenv:Body>
                <gen:getGenericResult>
                        <Request>
                                <dataItem>
                                        <name>Username</name>
                                        <type>String</type>
                                        <value>{{ USERNAME  }}</value>
                                </dataItem>
                                <dataItem>
                                        <name>Password</name>
                                        <type>String</type>
                                        <value>{{ PASSWORD  }}</value>
                                </dataItem>
                        </Request>
                </gen:getGenericResult>
        </soapenv:Body>
</soapenv:Envelope>
```

5.1.2 Response

```xml
<?xml version='1.0' encoding='UTF-8'?>
<S:Envelope
        xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
        <S:Header>
                <ns3:eventid
                        xmlns:ns2="http://www.4cgroup.co.za/genericsoap"
                        xmlns:ns3="http://www.4cgroup.co.za/soapauth">2500
                </ns3:eventid>
        </S:Header>
        <S:Body>
```

```xml
                    <ns2:getGenericResultResponse
                            xmlns:ns2="http://www.4cgroup.co.za/genericsoap"
                            xmlns:ns3="http://www.4cgroup.co.za/soapauth">
                            <SOAPAPIResult>
                                    <eventInfo>
                                            <code>3</code>
                                            <description>Processed</description>
                                            <detail>Processed</detail>
                                            <transactionID>0c49ec4bbebe44b082aa24e5f548b514</transactionID>
                                    </eventInfo>
                                    <request>
                                            <dataItem>
                                                    <name>Username</name>
                                                    <type>String</type>
                                                    <value>thirdpartyc2bw</value>
                                            </dataItem>
                                            <dataItem>
                                                    <name>Password</name>
                                                    <type>String</type>
                                                    <value>thirdpartyc2bw</value>
                                            </dataItem>
                                    </request>
                                    <response>
                                            <dataItem>
                                                    <name>SessionID</name>
                                                    <type>String</type>
                                                    <value>dbcb63a40afd4191a990d66ed9cb62f7</value>
                                            </dataItem>
                                    </response>
                            </SOAPAPIResult>
                    </ns2:getGenericResultResponse>
            </S:Body>
</S:Envelope>
```

5.2   C2B Payment

5.2.1   Request

```xml
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:soap="http://www.4cgroup.co.za/soapauth"
        xmlns:gen="http://www.4cgroup.co.za/genericsoap">
        <soapenv:Header>
                <soap:Token
                        xmlns:soap="http://www.4cgroup.co.za/soapauth">{{ TOKEN  }}</soap:Token>
                <soap:EventID>80049</soap:EventID>
        </soapenv:Header>
        <soapenv:Body>
                <gen:getGenericResult>
                        <Request>
                                <dataItem>
                                        <name>CustomerMSISDN</name>
                                        <type>String</type>
                                        <value>{{ MSISDN  }}</value>
                                </dataItem>
                                <dataItem>
                                        <name>ServiceProviderCode</name>
                                        <type>String</type>
                                        <value>{{ SHORTCODE  }}</value>
                                </dataItem>
                                <dataItem>
                                        <name>Currency</name>
                                        <type>String</type>
                                        <value>{{ CURRENCY  }}</value>
                                </dataItem>
                                <dataItem>
                                        <name>Amount</name>
                                        <type>String</type>
                                        <value>{{ AMOUNT  }}</value>
                                </dataItem>
                                <dataItem>
                                        <name>Date</name>
                                        <type>String</type>
                                        <value>20170901155250</value>
                                </dataItem>
                                <dataItem>
                                        <name>ThirdPartyReference</name>
                                        <type>String</type>
                                        <value>Test100</value>
                                </dataItem>
                                <dataItem>
                                        <name>CommandId</name>
```

```
                            <type>String</type>
                            <value>{{ COMMAND_ID }}</value>
                    </dataItem>
                    <dataItem>
                            <name>Language</name>
                            <type>String</type>
                            <value>EN</value>
                    </dataItem>
                    <dataItem>
                            <name>CallBackChannel</name>
                            <type>String</type>
                            <value>4</value>
                    </dataItem>
                    <dataItem>
                            <name>CallBackDestination</name>
                            <type>String</type>
                            <value>https://urlCallback</value>
                    </dataItem>
                    <dataItem>
                            <name>Surname</name>
                            <type>String</type>
                            <value>Surname</value>
                    </dataItem>
                    <dataItem>
                            <name>Initials</name>
                            <type>String</type>
                            <value>Initials</value>
                    </dataItem>
            </Request>
        </gen:getGenericResult>
    </soapenv:Body>
</soapenv:Envelope>
```

5.2.2 Response

```xml
<?xml version='1.0' encoding='UTF-8'?>
<S:Envelope
        xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
        <S:Header>
                <ns3:eventid
                        xmlns:ns2="http://www.4cgroup.co.za/genericsoap"
                        xmlns:ns3="http://www.4cgroup.co.za/soapauth">80049
                </ns3:eventid>
        </S:Header>
        <S:Body>
                <ns2:getGenericResultResponse
                        xmlns:ns2="http://www.4cgroup.co.za/genericsoap"
                        xmlns:ns3="http://www.4cgroup.co.za/soapauth">
                        <SOAPAPIResult>
                                <eventInfo>
                                        <code>3</code>
                                        <description>Processed</description>
                                        <detail>Processed</detail>
                                        <transactionID>80db41ffab3c4b88ab7f937f9fd7ccc9</transactionID>
                                </eventInfo>
                                <request>
                                        <dataItem>
                                                <name>CustomerMSISDN</name>
                                                <type>String</type>
                                                <value>243811835361</value>
                                        </dataItem>
                                        <dataItem>
                                                <name>ServiceProviderCode</name>
                                                <type>String</type>
                                                <value>8337</value>
                                        </dataItem>
                                        <dataItem>
                                                <name>Currency</name>
                                                <type>String</type>
                                                <value>CDF</value>
                                        </dataItem>
                                        <dataItem>
                                                <name>Amount</name>
                                                <type>String</type>
                                                <value>10</value>
                                        </dataItem>
                                        <dataItem>
                                                <name>Date</name>
                                                <type>String</type>
                                                <value>20170901155250</value>
                                        </dataItem>
```

```
<dataItem>
        <name>ThirdPartyReference</name>
        <type>String</type>
        <value>Test100</value>
</dataItem>
<dataItem>
        <name>CommandId</name>
        <type>String</type>
        <value>InitTrans_oneForallC2B</value>
</dataItem>
<dataItem>
        <name>Language</name>
        <type>String</type>
        <value>EN</value>
</dataItem>
<dataItem>
        <name>CallBackChannel</name>
        <type>String</type>
        <value>4</value>
</dataItem>
<dataItem>
        <name>CallBackDestination</name>
        <type>String</type>
        <value>Christian.Belewete@vodacom.cd</value>
</dataItem>
<dataItem>
        <name>Surname</name>
        <type>String</type>
        <value>Surname</value>
</dataItem>
<dataItem>
        <name>Initials</name>
        <type>String</type>
        <value>Initials</value>
</dataItem>
</request>
<response>
        <dataItem>
                <name>InsightReference</name>
                <type>String</type>
                <value>7272C194D0B50616E054002128FBA42E</value>
        </dataItem>
        <dataItem>
                <name>ResponseCode</name>
                <type>String</type>
                <value>0</value>
        </dataItem>
        <dataItem>
                <name>CustomerMSISDN</name>
                <type>String</type>
```

```
                                        <value>243811835361</value>
                                    </dataItem>
                                </response>
                            </SOAPAPIResult>
                    </ns2:getGenericResultResponse>
            </S:Body>
</S:Envelope>
```

5.2.3   A-Sync Response /Callback Result

To receive the result of an Asynchronous event call via an HTTP post, the CallBackChannel must be set to "2". The CallBackDestination should also carry the URL that should be posted to from iNSight (it is important that iNSight can access this URL). The envelope posted will be a SOAP envelope. iNSight must be able to post without needing to authenticate or needing to perform any preliminary steps. The Third-Party must reply with the specified Response packet.

Request sent to the third party

```
<soapenv:Envelope
        xmlns:soapenv='http://schemas.xmlsoap.org/soap/envelope/'
        xmlns:soap='http://www.4cgroup.co.za/soapauth'
        xmlns:gen='http://www.4cgroup.co.za/genericsoap'>
        <soapenv:Body>
                <gen:getGenericResult>
                        <Request>
                                <dataItem>
                                        <name>ResultType</name>
                                        <value>0</value>
                                        <type>String</type>
                                </dataItem>
                                <dataItem>
                                        <name>ResultCode</name>
                                        <value>0</value>
                                        <type>String</type>
                                </dataItem>
                                <dataItem>
                                        <name>ResultDesc</name>
                                        <value>Process service request successfully.</value>
                                        <type>String</type>
                                </dataItem>
                                <dataItem>
                                        <name>OriginatorConversationID</name>
                                        <value>9f76049816424eb293e24f67b6146622</value>
                                        <type>String</type>
                                </dataItem>
                                <dataItem>
                                        <name>ConversationID</name>
                                        <value>AG_20180802_00007447cd58aee5d918</value>
                                        <type>String</type>
                                </dataItem>
                                <dataItem>
                                        <name>ThirdPartyReference</name>
                                        <value>Test100</value>
                                        <type>String</type>
```

```
                        </dataItem>
                        <dataItem>
                                <name>Amount</name>
                                <value>10</value>
                                <type>String</type>
                        </dataItem>
                        <dataItem>
                                <name>TransactionTime</name>
                                <value>-1</value>
                                <type>String</type>
                        </dataItem>
                        <dataItem>
                                <name>InsightReference</name>
                                <value>727668AD2A2C389EE054002128FBA42E</value>
                                <type>String</type>
                        </dataItem>
                        <dataItem>
                                <name>TransactionID</name>
                                <value>5H275YKJEP</value>
                                <type>String</type>
                        </dataItem>
                </Request>
        </gen:getGenericResult>
    </soapenv:Body>
</soapenv:Envelope>
```

Response expected from the thirdparty

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<response>
  <dataItem>
    <name>ResponseCode<</name>
    <type>String</type>
    <value>200</value>
  </dataItem>
</response>
```