



airtel money E-PAY

Via TST SWITCH

Integration guide

Airtel Congo

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1. Document Information

1.1. Document History

Release	Date	Author	Comments
Revision 1	May 2015	Jean-Louis N'SITOU	1st Working Version
Revision 2	Dec. 2017	Jean-Louis N'SITOU	Addition of call back
Revision 3	April 2019	Jean-Louis N'SITOU	Withdrawal
Revision 4	June 2020	Jean-Louis N'SITOU	Withdrawal response parameters and exit codes

1.2. Document Conventions

N/A

1.3. Related Documents

None.

1.4. Glossary

API	Application Programmer Interface
ARPCE	Communications Authority of Congo
HTTP	Hyper Text Transfer Protocol
AM.....	Airtel Money
MO	Mobile Originated SMS
MSISDN	Mobile Subscriber Number
MT	Mobile Terminated SMS
PRSP	Premium Rate Services Provider
SLA	Service Level Agreement

2. Introduction

TST Switch is an online equipment fully of Application Programmer Interfaces, belonging to Trace Service Technology Company, which allow three carriers of payment based on mobile banking and mobile money. The current document is intended for use by merchant's integrators to connect any web or mobile APP based interface to Airtel Money Platform.

This can work with any web business in Republic of Congo where Airtel Money payment is required. Thus Airtel subscriber will be able to pay any product online via a web merchant client interface or offline via an USSD code. The current release can be extended in other countries covered by Airtel.

3. API Design Overview

The communication between client and server is synchronous. There are a variety of conditions to be determined before a transaction to be completed. For example, the sender msisdn must be a valid mobile number and the total amount held by the sender must not be less than 50 CFA or exceed the network allowed amount. The server attempts to finish all of these within a socket connection.

Communication between client and server utilizes HTTPs. HTTPs is widely adopted for providing a secure tunnel for client-server communication over the Internet.

The web service API utilizes a RESTful approach. Specifically POST with JSON body or POST only.

The web portal allows for merchants to view their account activity, transaction details, including account balance. For security reasons, transaction records can neither be created nor altered from the web portal.

4. Web Based Services Interaction

The following section details the commands used to interact with the system. The Switch provides three ways of calling from client interface, and one methods of checking transaction status checkValidationStatus as in the following URL scheme:

```
{ baseURL } / { applicationPG } {method} {  
merchantID &merchantPWD&transID&amount&request }/
```

Where:

baseURL = <https://www.tstcgb.com/switch/>

applicationPG = [epay.php](#) for merchant Mobile APP interface

applicationPG = [tst-switch-payee.php](#) for merchant Web APP interface

applicationPG = [tst_switch_paie_check_validation.php](#) when check transaction status

request=action=getID

The parameters in { } should be replaced with the correct values. The baseURL parameter depends on the server where the Switch is deployed while the applicationPG is the name of application to call. The method call is an HTTP request. The body of the request must contain PHP/JSON formatted data with the parameters of the method call. The content type in the request must be set to UTF-8 encoding. Each Switch application must be called as a specific HTTP method (Table 1). All successful requests should return HTTP 200 OK response except in cases when the server hosting the application experiences an error.

Switch Application	HTTP Methods
tst-switch-payee.php	HTTP POST
epay.php	HTTP POST
tst_switch_paie_check_validation.php	HTTP POST

Table 1: Switch HTTP Applications and methods

4.1 Parameters

Each parameters values, length, should be correct as the same registered or filled in the merchant form:

Calling Request

Parameter	value	Length	Description
merchantID	VarChar	>10 (characters)	Merchant username and ID in Switch table (provided by the merchant)
merchantPWD	VarChar	<17 (characters)	Merchant password (provided by the switch)
transID	Varchar	>5 (characters)	Randomly generated Varchar at merchant end , that is used by the client for transaction identification (This should be unique for every request and provided by the merchant)
amount	Numeric	50 <= amount <= 2Million	Client total amount to pay
CC	Numeric	= 3 (digits)	Country code of the client msisdn e.g 242 for Congo RC
msisdn	Numeric String	9 <= msisdn <= 11 (digits)	Mobile station number initiating payment. e.g 056545858
request	CONS	-getID -CheckTransSTATUS	Merchant request type or action
callBackURL	vchar	< 60 (characters)	Merchant dynamic callback url

Table 2: Airtel API calling request parameters

4.2 Deposit/cashout

Called address will be different when calling from web or mobile APP and each parameters values, length, should be correct as the same registered or filled in the merchant form.

4.2.1 Calling Web APP API

Each access to airtel API require a unique transaction key « token » witch is obtained by sending within GET methods your merchant parameters and request type “action”

Connectivity:

URL : <https://www.tstcgb.com/switch/tst-switch-payee.php>

Parameters :

1. merchantID
2. merchantPWD
3. transID
4. amount
5. action

Variables	Description
merchantID	Merchant company's name or ID in Switch data base , also used as a merchant username
merchantPWD	Merchant password provided at switch end
transID	Unique ID for each transaction from merchant site , must contain merchant initials (Example : APOLO-245111447)
amount	Client amount
action	Fixed value and equal to getID /checkSTATUS

Call example

<https://www.tstcgb.com/switch/tst-switch-payee.php?merchantID=ApoloCenter&merchantPWD=6541!23@987&transID=APOLO-0001250&amount=50&action=getID>

Airtel money switch response will be a token with a status « 0 » witch means that the token has been successfully

Response example

0,0x32ab3ff65cf86430de144d4f3e2d64e1

Possible status or error code

Réponses	Description
0,0x32ab3ff65cf86430de144d4f3e2d64e1	Connectivity established and token generated successfully
1, Error check the parameters	One or several merchant parameters are wrong
2, Merchant not listed	Merchant account doesn't exist , check merchant ID or PWD
3, Duplicated transaction	Transaction ID not unique or already used, change transID's value

Transaction Validation

For validation your web interface should make a second call by using received token within the same method:

<https://www.tstcgb.com/switch/tst-switch-payee.php?token=0x32ab3ff65cf86430de144d4f3e2d64e1>

And follow bellow virtual POS procedure :



1. Enter client number and then click on « suivant » button
2. A validation USSD code will be generated in red
3. Dial it on client Airtel money handset and follow the push menu
4. Client will be redirected to your web interface after a successful payment

4.2.2 Calling hybrid API

hybrid API is more flexible, faster and can be used when calling from either a mobile or web APP, for any client experience that required to stay on merchant interface during payment operation without redirecting client to Airtel money payment interface, where everything happens in the back end. This brings a great advantage in response time and client experience simplification. Only one request is needed, including merchant parameters, client MSISDN, request type and merchant callbackUrl (dynamic/static) ended by a question mark (?)

Connectivity:

URL : <https://www.tstcgb.com/switch/epay000.php>

Parameters :

1. merchantID
2. merchantPWD
3. transID
4. amount
5. action
6. msisdn
7. CC
8. callbackUrl

Variables	Description
CC	Country Code =242 (Republic of Congo)
msisdn	Airtel money Client mobile number in local format
callbackUrl	* Dynamic or static url where Airtel server will return pending transaction information *https url without port is required

Call example

<https://www.tstcgb.com/switch/epay000.php?merchantID=ApoloCenter&merchantPWD=mysecret&transID=Apolo-CG-0001250&amount=50&action=getID&msisdn=CCmsisdn&callbackUrl=merchantcallbackurl?>

Possible status or error code

Response / error code	Description
0,*128*128*\$VC*PIN# , token, callbackurl	Connectivity established and token generated successfully
1, Error check the parameters	One or several parameters are wrong
2, Merchant not listed	Merchant account doesn't exist , check merchant ID or PWD
3, Duplicated transaction	La transaction ID not unique or already used

For a successful connection, Airtel money provides two different instants responses:

- Client end response : a push prompt to client mobile phone inviting to confirm current transaction by entering the PIN
- Merchant end response : a string in the back end composed of connection status , rescue USSD validation code and the callback url entered and merchant end , as in this example ,
0,*128*128*3148*PIN#, dff8c172d68711ea89d9002590edc1ca, [merchantcallbackurl?](#)

Response example

0,*128*128*3148*PIN#, dff8c172d68711ea89d9002590edc1ca,
<https://www.santyalibota.com/ws/validation.php?>

Transaction Validation

For validation merchant APP doesn't need to make a second call **client just enter his/her PIN; once USSD prompt received on the mobile phone or dial the rescue USSD code to validate the payment according the following rule**

1. Client Dial ***128*128*\$VC*PIN#** on handset and follow the menu
2. Client will be notified by a SMS whether transaction is successful or not including the reason

4.3 Server Call back

Merchant provides to Airtel money switch team an URL that will be used during the callback process to feedback transaction information including status.

Each call back will be send within RESTful / POST with JSON body method.

Parameters :

1. transaction_id
2. status
3. transaction_date
4. amount
5. currency
6. msisdn
7. paymentID

Variables	Description
transaction_id	Transaction ID equal to merchant transID
status	Status of payment
transaction_date	Date of transaction
amount	Payed amount by client
currency	Equal to CFA (local currency)
msisdn	Client AM msisdn in international format
paymentID	AM payment ID received at client SMS end

Call back log example: (merchantID = Apollo_Center)

```
2019-12-10 17-20-  
04|Apollo_Center|1530690785|500|9627aa941b6f11ea81b3002590edc1ca|500|MP191210.1805.A80105.|  
https://apoloserv-  
api.com/payment/notification/deposit/airtel?transaction_id=1530690785&status=200&transaction_date=2  
019-12-10&msisdn=242053361663&amount=500&currency=CFA&paymentID=MP191210.1805.A80105.|1
```

Possible methods to get return values ("GET") :

```
if(isset($_GET['status']))  
{  
  
    $status = $_GET['status'];  
    $transaction_id = $_GET['transaction_id'];  
    $currency = $_GET['currency'];  
    $transaction_date = $_GET['transaction_date'];  
    $msisdn = $_GET['msisdn'];  
    $paymentID = $_GET['paymentID'];  
    $amount = $_GET['amount'];  
  
}
```

Possible errors codes

Error Code	Code Reason
200	Transaction successful
0	Transaction aborted or unfinished
60019	Insufficient found
60011	Sender has reached your maximum count of transactions for the day
60014	Sender has reached your maximum transaction amount for the day.
00017	PIN or validation code is wrong
01035	There is a problem in service so merchant can configure a generic message
00317	
01056	Re-imbusement of a client has been rejected
99046	Transaction amount is less than the minimum
400	Transaction was not found in the receiving country
404	Application interface not found
410	Transaction amount is more than the allowed value.
450	Transaction not found in the switch
250	Undefined response received from destination country

Table 9: Possible exit code

4.4 checkValidationStatus

This method is used to check transaction status in case of network problems, the switch didn't respond in time or internet connection timed out. The transaction ID generated at merchant end and the token generated by the switch during the same transaction are used for the query. The table below shows parameters expected by *checkValidationStatus*.

Request

Authentication	merchantID	
	merchantPWD	
Message	transID	
	token	

Sample Request.

https://www.tstcgb.com/switch/tst_switch_paie_check_validation.php?merchantID=ApoloCenter&merchantPWD=6541!23987&transID=FP-AC-0001250&action=checkSTATUS

Response

Parameter	value	compulsory	Description
status	string	yes	200 is returned when transaction is successful. Other values are in table 9 below
sourceMSISDN	string	yes	Client misdn
datetime	String	no	Date and time of transaction

Sample Response

[200, 242056548789, 2019-12-05 14:50:46](#)

4.5 Withdrawal / Cashin

Withdrawal is triggered from merchant end by the mean of a simple request based on **merchantID** , **merchantPWD** , withdrawal **transID** and **destinationMSISDN**

4.5.1 Parameters

Each parameters values, length, should be correct as the same registered or filled in merchant form:

Calling Request

Parameter	value	Length	Description
merchantID	VarChar	>10 (characters)	Merchant username and ID in Switch table , same as in cashout transaction
merchantPWD	VarChar	<17 (characters)	Merchant password (provided by the switch) , , same as in cashout operations
transID	Varchar	>5 (characters)	New transaction ID different from cashout one
amount	Numeric	50 <= amount <= 2 Million	Client amount to withdraw
Destination MSISDN	Numeric	= 12 (digits)	Client Airtel money number to withdraw

Call example:

<https://www.tstcgb.com/switch/tst-switch-cashin.php?merchantID=ApoloCenter&merchantPWD=mysecret&transID=COGELLO-1250&amount=50&destinationMSISDN=242057891245>

Possible error code

Response / error code	Description
1, Error check the parameters	One or several parameters are wrong based on length or format
2, Merchant not allowed	Merchant account doesn't exist , check merchant ID or PWD
3, Duplicated transaction ID	Transaction ID not unique or already used

Whether transaction is successful Airtel money response will be sent in the back end within XML format

Response example

```
<?xml version="1.0"?>
  <COMMAND>
    <TYPE> MERHCASHIN </TYPE>
    <TXNID>CI200409.1950.A57560</TXNID>
    <TXNSTATUS>200</TXNSTATUS>
    <MESSAGE> Trans. ID:CI200409.1950.A57560 Vous avez envoyé 100.00CFA à 055009511. Le
      Solde de votre compte Airtel Money est de 2290.08 CFA. Votre commission est 000CFA
    </MESSAGE>
    <EXTTRID>A00008</EXTTRID>
    <TRID>044008144202004091950A63248</TRID>
  </COMMAND>
```

Response parameters description

Field	Description	Example	
TYPE	Service type	MERHCASHIN	Merchant cashin
TXNID	Transaction or Cashin ID at AM end	CI200409.1950.A57560	Cash In number 200409...
EXTTRID	External Transaction Reference Number	A00008	
TXNSTATUS	Transaction Status	200	Successful transaction if else failed
EXTTXNID	3 rd party transaction ID	EMP12234	
MESSAGE	Description message for transaction status	Vous avez envoyé 100.00CFA ...	
TRID	Transaction reference number	044008144202004091950A63248	

4.6 Merchant Admin Interface

Once integration completed and contract signed, Airtel Congo will provide as a bonus a merchant **Admin interface**. With credentials and the link to the graphical interface

Here is admin interface appearance:

ChanName : MIKALA OPCHECKER | Network : CG | Page Code : ALL | Account : NWADM | Time : 10/12/19 14:33:06 | Last Login: 10/12/19 14:32:58

Channel User Management

Bulk User Registration and Modification

Stock Management

Subscriber Information

Audit Trail

Enquiries

- ➡ View details
- ➡ Channel User/Subscriber Enquiry
- ➡ Transaction Details
- ➡ Reset PIN

Reconciliation

Access Management

Transaction Correction

Channel Category Change Approval

Resend SMS

Enquiries

• User Not Found

All fields marked * are mandatory.

Mobile Number*:	<input type="text" value="057715556"/>		<input type="button" value="Submit"/>
User Information			
First Name:		Last Name:	
NickName:		Address:	
Date of Birth:		Geography Details:	
Category Code:		Gender:	
Identification Number:		ID Number:	
Created On:		User status:	