SARIS / SIMS GATEWAY INTEGRATION API DOCUMENT DETAILS

Version 1.8

VERSION CONTROL

Date/Time	Version	Changes
03/04/2017	1	Initial draft
10/10/2017	1.1	Added Section 2.1.3. Validate reference number remote (Client Server) if not found in a gateway
20/10/2017	1.2	api_key and api_secret added to all request initiated by gateway to Client server. These fields will be used by Clients side for authentication on their end
24/11/2017	1.3	Invoice Update & Cancel function added.
22/02/2018	1.4	Add status field in section 2.1.3.2
01/05/2018	1.5	Reconciliation function added
21/06/2018	1.6	Add allow_partial field in invoice details. This field will enable to identify if the invoice allow partial payment or not
07/09/2020	1.7	Add option to verify invoice information
05/02/2021	1.8	Add option to query payment for specific reference/invoice number

INTRODUCTION

This document defines interface supported by the SIMS GATEWAY API as means of data exchange with SIMS GATEWAY and third-party systems. Also it includes some message samples that will be produced during actual data transfer.

This document assumes a third-party or Client has an account with NMB Bank, SIMS GATEWAY and his/her account configured with link to forward the collection transactions.

SIMS/SARIS GATEWAY uses first six(6) character of the reference number to identify client account.

1   Communication Protocol

The transport protocol of this interface is JSON over HTTPS.
The expected HTTPS method is always POST.

2 API Requests specifications

In this version the following Request are used

2.1.1   Generate Access Token Service

The Generate Access Token Service is used to get a valid access token. The access token has to be specified in each request as described in the sub paragraphs below.

The validity of the access token is time limited and after each session the token is invalidated irrespective whether the service call resulted in a positive result or a failure. The access token will expire after 2 minutes if there is not used.

2.1.1.1   Request

URL : *<domain>/v2/auth*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"username" : "xxxxxxxxx",
"password" : "xxxxxxx"
}
```

JSON Field(s) Description

Attribute	Type	Description
username	String	A unique token generated by gateway and

		used as Client Username
password	String	Random token generated by gateway and used as Client password.

2.1.1.2   Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description"
"token" : "xxxxxxxxx",
}
```

JSON Field(s) Description

Attribute	Type	Description
status	int	1 = Success, 0 = Fail
description	String	Status description
token	String	Random unique string generated by gateway to be used in the next request.

2.1.2   Sending Invoice Number

With this method Client or third-party system will use access token obtained [**refer 2.1.1**] to send student/customer Invoice (Reference Number) to a GATEWAY. This request will be validated against token generated.
Note : Token must be unique for each request.

2.1.2.1   Request

URL : *<domain>/v2/invoice_submission*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reference" : "SAS777XXX",
"student_name" : "Miltone Urassa",
"student_id" : "ICT/2017/001",
"amount" : "100000",
"type" : "School Fee",
"code" : "10",
"allow_partial" :" TRUE",
"callback_url" : "http://callback_url",
"token" : "xxxxxxxxxxxxx"
}
```

JSON Field(s) Description

Attribute	Type	Description
reference	String	Unique invoice number generated by Client
student_name	String	Student/Customer Name e.g Miltone Urassa
student_id	String	Student/Customer Registration Number
amount	double	Amount Required to pay
type	String	Invoice Name (School Fee)
code	int	10 - Charging Matrix
allow_partial	Boolean	Notify gateway if partial payment allowed or not. The values are : TRUE – Allow Partial payment FALSE – Partial payment not allowed
callback_url	String	Callback URL for final transaction
token	String	Token generated by Gateway

2.1.2.2　　Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description"
}
```

JSON Field(s) Description

Attribute	Type	Description
status	int	1= Success, 0= Fail
description	String	Status description

2.1.3　Validate Reference Number Remote

In case the reference/Invoice number not exist in a gateway (not pushed), Gateway will send request to client server for validation.

2.1.3.1　　Request

URL : *Gateway use URL provided during Client Account Service Registration*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reference" : "SAS777XXX",
"token" : "xxxxxxxxxxxxx",
"api_key" : "",
"api_secret" : "",
}
```

JSON Field(s) Description

Attribute	Type	Description
reference	String	Unique invoice number generated by Client
token	String	Unique string obtained from gateway
api_key	String	[Optional] Key supplied by Client for request validation in their side
api_secret	String	[Optional] Key supplied by Client for request validation in their side

2.1.3.2   Response

Average response time: < 1 seconds

Maximum response time : < 5 seconds

Sample of the response JSON

```
{
"status" : "1",
"reference" : "SAS777XXX",
"student_name" : "Miltone Urassa",
"student_id" : "ICT/2017/001",
"amount" : "100000",
"type" : "School Fee",
"code" : "10",
"allow_partial" :" TRUE",
"callback_url" : "http://callback_url",
"token" : "xxxxxxxxxxxxx"
}
```

JSON Field(s) Description

Attribute	Type	Description
status	int	1 for success, 0 for invalid reference
reference	String	Unique invoice number generated by Client
student_name	String	Student/Customer Name e.g Miltone Urassa
student_id	String	Student/Customer Registration Number
amount	double	Amount Required to pay
type	String	Invoice Name (School Fee)
code	int	10 - Charging Matrix
allow_partial	Boolean	Notify gateway if partial payment allowed or not. The values are : TRUE – Allow Partial payment FALSE – Partial payment not allowed
callback_url	String	Callback URL for final transaction

token	String	Token generated by Gateway

2.1.4 Payment Status Callback – Final Transaction

After Student/Customer complete payment via any NMB channel (Eg: NMB Branch, NMB Mobile Banking, NMB Wakala, NMB App, Internet Banking etc), then the status is reported back through Callback URL provided during invoice validation process.

2.1.4.1 Request

URL : *Callback URL*

Method : *POST*

Headers : *Content-Type:application/json*

Body:

```
{
"reference" : "SAS7771",
"timestamp" : "2017-03-01 12:22:01",
"receipt" : "XCDSFF",
"customer_name" : "Miltone Urassa",
"account_number" : "2233333",
"token" : "1234567789",
"amount" : 10000,
"api_key" : "xxx",
"api_secret" : "xxx",
}
```

JSON Field(s) Description

Attribute	Type	Description
reference	String	Student/Customer reference/Invoice number
receipt	long	Unique NMB transaction number
amount	double	Amount Paid by Student/Customer
timestamp	timestamp	Timestamp of the transaction [Format]: YYYY-MM-DD HH:mm:ss
customer_name	String	Customer who deposit amount
account_number	long	Client Collection Account Number
token	String	Unique number generated by gateway at the initial stage
api_key	String	[Optional] Key supplied by Client for request validation in their side
api_secret	String	[Optional] Key supplied by Client for request validation in their side

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status":1,
"description":"success"
}
```

JSON Field(s) Description

Attribute	Type	Description
status	int	1 = Success, 0 = Fail
description	String	Response Description

2.1.5   Update Invoice

Gateway allow Clients to update their invoices if there is needed. Under this action client should generate access token first (**refer 2.1.1**) and use it in the request.

2.1.5.1   Request

URL : *<domain>/v2/invoice_update*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reference" : "SAS777XXX",
"student_name" : "Miltone Urassa",
"student_id" : "ICT/2017/001",
"amount" : "100000",
"type" : "School Fee",
"code" : "10",
"callback_url" : "http://callback_url",
"token" : "xxxxxxxxxxxxx"
}
```

Attribute	Type	Description
reference	String	Unique invoice number generated by Client
student_name	String	Student/Customer Name e.g Miltone Urassa
student_id	String	Student/Customer Registration Number
amount	double	Amount Required to pay
type	String	Invoice Name (School Fee)
code	int	10 - Charging Matrix
callback_url	String	Callback URL for final transaction
token	String	Token obtained from generated

2.1.5.2　　Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description"
}
```

JSON Field(s) Description

Attribute	Type	Description
status	int	1= Success, 0= Fail
description	String	Status description

2.1.6　　Cancel Invoice

Gateway allow Clients to update their invoices if there is needed. Under this action client should generate access token first (**refer 2.1.1**) and use it in the request.

2.1.6.1　　Request

URL : *<domain>/v2/invoice_cancel*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reference" : "SAS777XXX",
"token" : "xxxxxxxxxxxxx",
}
```

JSON Field(s) Description

Attribute	Type	Description
reference	String	Unique invoice number generated by Client
token	String	Unique string obtained from gateway

2.1.6.2 Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description"
}
```

JSON Field(s) Description

Attribute	Type	Description
status	int	1= Success, 0= Fail
description	String	Status description

2.1.7 Reconciliation

Gateway allow Clients to query all transaction processed per specific date. Under this action client should generate access token first (**refer 2.1.1**) and use it in the request.

2.1.7.1 Request

URL : *<domain>/v2/reconcilliation*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reconcile_date" : "DD-MM-YYYY",
"token" : "xxxxxxxxxxxxx"
}
```

JSON Field(s) Description

Attribute	Type	Description
reconcile_date	Date	Date of the transaction [Format]: DD-YY-YYYY
token	String	Unique string obtained from gateway

2.1.7.2 Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description",
"transactions":[
                {
                 "reference":"SASXXX",
                 "timestamp":"2018-01-23 10:47:31",
                 "receipt":"XXXXX",
                 "customer_name":"xxxx",
                 "account_number":"xxx",
                 "token":"xxxx",
                 "amount":"5000.00",
                  "channel":"NMB"
                },
                {
                 "reference":"SASYYY",
                 "timestamp":"2018-01-23 10:48:02",
                 "receipt":"xxxx",
                  "customer_name":"xxxxxx",
                  "account_number":"xxxx",
                  "token":"xxxxxxxxxx",
                 "amount":"140000.00",
                 "channel":"NMB"
               }
           ]
     }
```

2.1.7.3 JSON Field(s) Description

Attribute	Type	Description
reference	int	1= Success, 0= Fail
description	String	Status description
transactions	JSON	List of all transactions received in gateway based on date requested.

2.1.8 Check Invoice

Gateway allow clients to check the information of the specific invoice submitted. This will help to cross check the information submitted and verify against client side.

2.1.8.1 Request

URL : *<domain>/v2/check_invoice*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reference" : "SAS999XXXX",
"token" : "xxxxxxxxxxxxx"
}
```

JSON Field(s) Description

Attribute	Type	Description
reference	String	Student/Customer reference/Invoice number
token	String	Unique string obtained from gateway

2.1.8.2 Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description",
"data" : {
        "reference" : "SAS777XXX",
        "student_name" : "Miltone Urassa",
        "student_id" : "ICT/2017/001",
        "amount" : "100000",
        "type" : "School Fee",
        "code" : "10",
        "allow_partial" :" TRUE",
        "callback_url" : "http://callback_url",
        "token" : "xxxxxxxxxxxxx"
    }
}
```

2.1.9　　Check Payment

Gateway allow client to query payment status or transaction(s) for specific/single reference/control number. This will help client to pull payment for specific reference/invoice number if the callback not hitted by any reason such as timeout etc

2.1.9.1　　Requests

URL : *<domain>/v2/check_payment*
Method : *POST*
Headers : *Content-Type:application/json*
Body:

```
{
"reference" : "SAS999XXXX",
"token" : "xxxxxxxxxxxxx"
}
```

JSON Field(s) Description

Attribute	Type	Description
reference	String	Student/Customer reference/Invoice number
token	String	Unique string obtained from gateway

2.1.9.2　　Response

Average response time: < 1 seconds
Maximum response time : < 5 seconds
Sample of the response JSON

```
{
"status" :1,
"description" : "Code Description",
"transactions":[
            {
             "reference":"SASXXX",
             "timestamp":"2018-01-23 10:47:31",
             "receipt":"XXXXX",
             "customer_name":"xxxx",
             "account_number":"xxx",
             "token":"xxxx",
             "amount":"5000.00",
              "channel":"NMB"
            }
        ]
}
```