Change ID		Issue ID	
Requestor:			
Name & Surname	Lucky Murovhi	Date:	26 July 2023
Project Name:	Variable Voucher Interface (SOAP to REST)		
Submission Date:	26 July 2023		
Priority:	High **Medium** Low		

1. CONTEXT

The SDBSS is undertaking an initiative to migrate from SOAP to REST, embracing a modern and lightweight communication approach. This migration aims to enhance performance, simplify integration, and align with industry standards for seamless data exchange. The migration from SOAP to REST for a variable voucher interface offers several advantages. Firstly, REST is inherently more lightweight compared to SOAP. It has a simpler structure and a smaller message footprint, resulting in faster transmission and reduced overhead. The change to REST will not affect the functionality of the Variable Voucher interface. However, it is important to update any client applications that are currently using the SOAP interface.
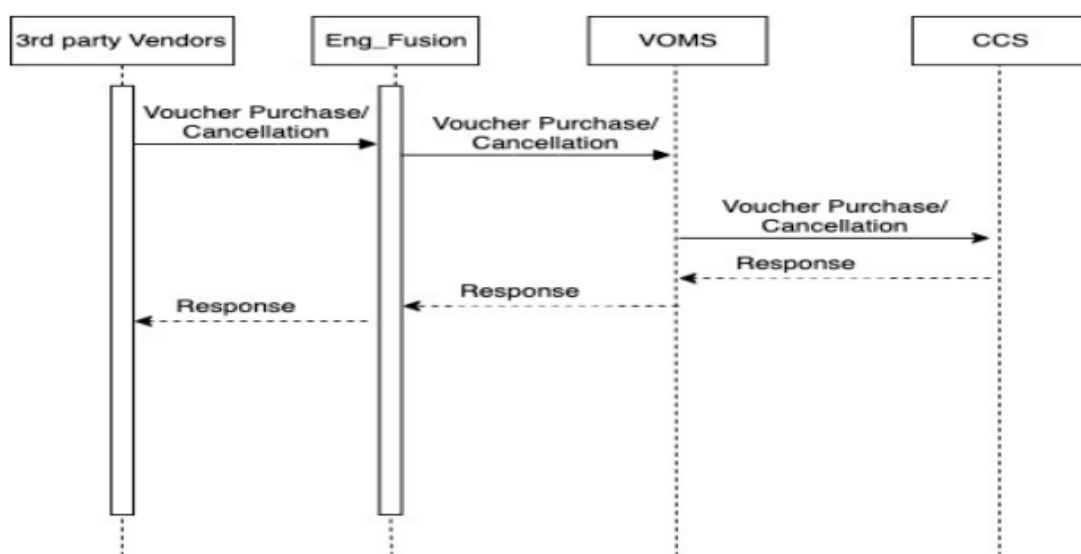
2. PROPOSED CHANGE/REQUIREMENT

The proposed change or requirement for migrating the SOAP-based Variable Voucher Interface service to REST with functions (Create voucher and Cancel voucher) should cater for the following development considerations:

- **Endpoint Design:** The RESTful architecture should include well-defined endpoint for each function, ensuring that the URL structure and resource naming are intuitive and aligned with the purpose of each operation. The endpoint should be designed to be easily understandable and discoverable by developers and clients consuming the API.
- **HTTP Methods:** The RESTful API should utilize appropriate HTTP methods to correspond with the desired actions. For example, the Execute and Perform functions, which involve performing specific actions, can be mapped to HTTP POST or PUT methods. The Query function, which involves retrieving data, can be associated with the HTTP GET method.
- **Request and Response Formats:** The migration should consider the request and response formats compatible with REST. JSON (JavaScript Object Notation) is commonly used in RESTful APIs due to its lightweight and widely supported nature. The development should cater for transforming the SOAP-based request and response structures to JSON format, ensuring compatibility with the RESTful architecture.

- **Authentication and Authorization:** The migration should address the authentication and authorization mechanisms required for accessing the RESTful API. It should include considerations for implementing secure authentication methods such as OAuth or token-based authentication to ensure proper access control and protection of sensitive data.
- **Error Handling:** The development should incorporate appropriate error handling mechanisms in the RESTful API to provide clear and informative error responses. This includes defining error codes, error messages, and providing guidance on handling exceptions and errors in a consistent and standardized manner.
- **Documentation and API Design Standards:** The migration should include comprehensive documentation for the RESTful API, describing the available endpoints, their expected behaviors, input parameters, and response formats. It is important to adhere to API design standards and best practices according to Vodacom CSM, such as using meaningful resource names, consistent naming conventions, and providing clear examples for developers to consume the API effectively.
- **Testing and Validation:** The development should cater for thorough testing and validation of the RESTful API to ensure that the migrated functions (Create voucher and Cancel voucher) behave as expected and meet the requirements. This includes functional testing, integration testing, and performance testing to validate the functionality and performance of the API.

During the migration process, it is crucial to ensure that the functionality provided by these SOAP functions is maintained in the RESTful architecture. Careful analysis and consideration should be given to the specific requirements and behaviors of each function, and suitable RESTful design patterns and practices should be applied to achieve the equivalent functionality in a RESTful manner.

3. ARCHITECTURAL LAYOUT

Figure 1 - Architectural Overview

4. SAMPLES

Endpoint: http://10.115.243.142:7003/generic/variable-voucher/v1

4.1 Create Voucher Function

The following parameters are expected for a voucher request.

Parameter Name	Parameter Value	Mandatory
100	Request Id	N
Context	VariableAirtimeRequest	N
DNIS	260	N
ORIGINATOR	FUSION	Y
MESSAGE_ID	6503	Y
SERVICE_ID	99 *From Checkers	Y
partnerID	007 *From Checkers	Y
Product	60011464253 *From Checkers	Y
creationDate	2020-01-15 09:45:52.000 *From Checkers	Y
mmTransactionGuid	335j9347-8o5k-8b9c-85d2-80icbd6996k6 *From Checkers	Y
mmTransactionID	2007483200 *From Checkers	Y
Amount	9.7999999 *From Checkers	Y
branchCode	050356 *From Checkers	Y
ticketNumber	12345 *From Checkers	Y
sessionID	50 *From Checkers	Y
terminalID	95 *From Checkers	Y
operatorID	66 *From Checkers	Y
transactionType	ISSUE *From Checkers	Y
transactionSource	POS *From Checkers	Y
Provider	VODACOM *From Checkers	Y

4.1.1 Variable Voucher Request

Sample

Request sample
```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://www.shoprite.co.za/MoneyMarket/Vendors/Schemas/v1.0">
  <soapenv:Header/>
  <soapenv:Body>
    <v1:Request>
      <v1:partnerID>007</v1:partnerID>
      <v1:product>60011464253</v1:product>
      <v1:creationDate>${=new java.text.SimpleDateFormat("yyyy-MM-dd'T'HH:mm:ss.SSS").format(new Date())}</v1:creationDate>
      <v1:mmTransactionGuid>${=java.util.UUID.randomUUID()}</v1:mmTransactionGuid>
      <v1:mmTransactionID>${=String.format("%05d", new Random().nextInt(99999))}</v1:mmTransactionID>
      <v1:amount>200</v1:amount>
      <v1:branchCode>050356</v1:branchCode>
      <v1:ticketNumber>>${=String.format("%04d", new Random().nextInt(9999))}</v1:ticketNumber>
      <v1:sessionID>${=String.format("%04d", new Random().nextInt(9999))}</v1:sessionID>
      <v1:terminalID>99</v1:terminalID>
      <v1:operatorID>65</v1:operatorID>
      <v1:transactionType>ISSUE</v1:transactionType>
      <v1:transactionSource>POS</v1:transactionSource>
    </v1:Request>
  </soapenv:Body>
</soapenv:Envelope>
```

4.1.2 Variable Voucher Response

Sample

Response Sample

```<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">```
``` <soap:Body xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">```
```   <vvp:Response responseCode="0" responseDescription="Success"```
```xmlns:vvp="http://www.shoprite.co.za/MoneyMarket/Vendors/Schemas/v1.0">```
```   <vvp:partnerID>007</vvp:partnerID>```
```   <vvp:creationDate>2021-07-09T13:42:42.465</vvp:creationDate>```
```   <vvp:mmTransactionGuid>cc572320-2be7-47a2-85ef-00bb96a6563c</vvp:mmTransactionGuid>```
```   <vvp:mmTransactionID>82740</vvp:mmTransactionID>```
```   <vvp:amount>200</vvp:amount>```
```   <vvp:branchCode>050356</vvp:branchCode>```
```   <vvp:ticketNumber>>8370</vvp:ticketNumber>```
```   <vvp:sessionID>2953</vvp:sessionID>```
```   <vvp:terminalID>99</vvp:terminalID>```
```   <vvp:transactionType>ISSUE</vvp:transactionType>```
```   <vvp:transactionSource>POS</vvp:transactionSource>```
```   <vvp:Message>```
```   <vvp:vendorReference>XP6YDM8H5HELAY</vvp:vendorReference>```
```   <vvp:VariableAirtimeResponse responseCode="0" responseDescription="Success">```
```   <vvp:voucherNumber>16797819451</vvp:voucherNumber>```
```   <vvp:pinNumber>661623E84FB4EF8679786B2DE07B3C75F9193923EA7F3DE37DED5007CD4BC12132C7F30CF5``` ```F21F0CBAF3482725E2928401D8FA2E177B327254C614E97FC640BD</vvp:pinNumber>```
```   <vvp:instructions>```
```   <vvp:line>To recharge your account</vvp:line>```
```   <vvp:line>Please dial *136*01*PIN#</vvp:line>```
```   <vvp:line>For queries dial 135</vvp:line>```
```   </vvp:instructions>```
```   </vvp:VariableAirtimeResponse>```
```   </vvp:Message>```
```   </vvp:Response>```
``` </soap:Body>```
```</soapenv:Envelope>```

RESPONSE RETURN CODE ERRORS

SUCCESS Issued voucher	0
INVALID amount requested	1
Duplicate request	2
Voucher status incorrect	3
Transaction not found	4
Internal database / technical error	5
Dealer not authorized	6
Voucher canceled	99

4.2 Variable Voucher cancellation Function

The following parameters are expected for a voucher request.

Parameter Name	Parameter Value	Mandatory
100	Request Id	N
Context	VariableAirtimeCancelReq	N
DNIS	260	N
ORIGINATOR	FUSION	Y
MESSAGE_ID	6513	Y
SERVICE_ID	99 *From Checkers	Y
partnerID	001 *From Checkers	Y
product	6001001464253 *From Checkers	Y
creationDate	2011-11-15 09:45:52.000 *From Checkers	Y
mmTransactionGuid	335j9347-8o5k-8b9c-85d2-80icbd6996k6 *From Checkers	Y
mmTransactionID	2147483648 *From Checkers	Y
amount	65.90 *From Checkers	Y
branchCode	050356 *From Checkers	Y
ticketNumber	12345 *From Checkers	Y
sessionID	50 *From Checkers	Y
terminalID	95 *From Checkers	Y
operatorID	66 *From Checkers	Y
transactionType	CANCEL *From Checkers	Y
transactionSource	POS *From Checkers	Y
provider	VODACOM *From Checkers	Y
referenceNumber	23613RJJI7ERY8 *From Checkers	Y

4.2.1 Variable Voucher Cancellation Request

Sample

Request Sample
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:v1="http://www.shoprite.co.za/MoneyMarket/Vendors/Schemas/v1.0">   <soapenv:Header/>   <soapenv:Body>   <v1:Request>   <v1:partnerID>007</v1:partnerID>   <v1:product>60011464253</v1:product>   <v1:creationDate>${=new java.text.SimpleDateFormat("yyyy-MM-dd'T'HH:mm:ss.SSS").format(new Date())}</v1:creationDate>   <v1:mmTransactionGuid>a27ebc90-6109-48da-97fc-f871e56ec767</v1:mmTransactionGuid>   <v1:mmTransactionID>82740</v1:mmTransactionID>   <v1:amount>200</v1:amount>   <v1:branchCode>050356</v1:branchCode>   <v1:ticketNumber>8370</v1:ticketNumber>   <v1:sessionID>2953</v1:sessionID>   <v1:terminalID>99</v1:terminalID>   <v1:operatorID>65</v1:operatorID>   <v1:transactionType>CANCEL</v1:transactionType>   <v1:transactionSource>POS</v1:transactionSource>   <v1:Message>   <v1:VariableAirtimeRequest>   <v1:OriginalTransactionDetails>   <v1:referenceNumber>XP6YDM8H5HELAY</v1:referenceNumber>   </v1:OriginalTransactionDetails>   </v1:VariableAirtimeRequest>   </v1:Message>   </v1:Request>

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

4.2.2   *Variable Voucher Cancellation Response*

Sample

Response Sample
| ```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <vvp:Response responseCode="0" responseDescription="Success"
xmlns:vvp="http://www.shoprite.co.za/MoneyMarket/Vendors/Schemas/v1.0">
      <vvp:partnerID>007</vvp:partnerID>
      <vvp:creationDate>2021-07-09T14:24:25.257</vvp:creationDate>
      <vvp:mmTransactionGuid>a27ebc90-6109-48da-97fc-f871e56ec767</vvp:mmTransactionGuid>
      <vvp:mmTransactionID>82740</vvp:mmTransactionID>
      <vvp:amount>200</vvp:amount>
      <vvp:branchCode>050356</vvp:branchCode>
      <vvp:ticketNumber>8370</vvp:ticketNumber>
      <vvp:sessionID>2953</vvp:sessionID>
      <vvp:terminalID>99</vvp:terminalID>
      <vvp:transactionType>CANCEL</vvp:transactionType>
      <vvp:transactionSource>POS</vvp:transactionSource>
      <vvp:Message>
        <vvp:vendorReference>INDMYZFBR72KIR</vvp:vendorReference>
        <vvp:VariableAirtimeResponse responseCode="0" responseDescription="Success">
          <vvp:instructions/>
        </vvp:VariableAirtimeResponse>
      </vvp:Message>
    </vvp:Response>
  </soap:Body>
</soapenv:Envelope>
``` |

RESPONSE RETURN CODE ERRORS

SUCCESS Issued voucher	0
INVALID amount requested	1
Duplicate request	2
Voucher status incorrect	3
Transaction not found	4
Internal database / technical error	5
Dealer not authorized	6
Voucher canceled	99

Project Manager

Name		Date Received:	
Approved for Investigation?			

	YES ☐	**NO** ☐	
Project Sponsor Signature			
Date Approved			
Comments:			

Project Sponsor/Owner

Name	Hazel Mokoto	**Date Received:**	
Approved for Investigation?	**YES** ☐	**NO** ☐	
Authors Signature			
Date Approved			
Comments:			