

Change ID		Issue ID	
Requestor:			
Name & Surname	Lucky Murovhi	Date:	23 August 2023
Project Name:	CIM Interface (SOAP to REST)		
Submission Date:	23 August 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. The transition from SOAP to REST involves modernizing the communication protocol for customer information management. SOAP, known for its rigid structure and XML-based messaging, is being replaced by REST, which leverages HTTP methods and JSON format to offer greater flexibility and ease of integration. 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 CIM 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. This is especially crucial for CIM interfaces that require rapid data exchange.

2. PROPOSED CHANGE/REQUIREMENT

The proposed change or requirement for migrating the SOAP-based CIM Interface service to REST with functions (DOI Accepted, DOI Rejected, DOI IN, SMS Notification, Stop and Welcome Notification) 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 Vodacom recommended 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, 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 (DOI Accepted, DOI Rejected, DOI IN, SMS Notification, Stop and Welcome Notification) 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. SAMPLES

Endpoint: <https://fusion-test.vodacom.co.za:11443/ci/interface>

3.1 Request Parameters Definition

Parameter Name	Mandatory / Optional	Format	Parameter Value Description
msisdn	Conditional	String	This is mandatory if subscriber Id. Subscriber's MSISDN e.g. 0829805010 (10 digit MSISDN) or 27821234567 (11 digit MSISDN) or 279612312345678 (15 Digit MSISDN) Note: The 15 Digit MSISDN format is used for the 14 Digit length MSISDN, may be extended to all MSISDN's

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topicCode	Conditional	String	Topic Code e.g. 'Just For You' – This is a free text field currently CSS subscribers should use interaction Type and not topicCode. Mandatory if no interaction Type.
comment	Conditional	String	Mandatory if no message. Detail of the Scratchpad e.g. "Customer phoned in to complain about the bill – he was out of the country when calls were made." This field is the concatenation of Comment Lines 1, 2 and 3. CSS subscribers should use message and not comment.
interactionDate	Mandatory	String	The date and time the interaction request was logged. The format is 'YYYY-MM-DD HH24:MI:SS'
interactionType	Conditional	String	The interaction type. Mandatory if no topic Code. Recommended to use for CSS subscribers.
interactionId	Optional	String	An ID identifying related SMS's. It will be used to update the delivery receipt column when receiving confirmations. This is currently limited to SMS interactions
subscriberId	Conditional	String	Mandatory if msisdn is not provided. For CSS CIM interactions, Asset Integration ID shall be sent and ICAP ID shall be sent for ICAP subscribers.
srId	Optional	String	The SR ID
originId	Optional	String	The origin ID of the external client. Example 'FX', 'US', 'BH'
destinationType	Optional	String	Defaults to 'SMS' if not provided. P
subject	Optional	String	The subject of the email message.
message	Conditional	String	Mandatory if no comment. The interaction message. E.g. "the SMS sent to the subscriber", "MSISDN forwarding denied by subscriber", etc. Recommended to use for CSS subscribers.
origination	Optional	String	The origin of the interaction. E.g. Flex, SMS Centre, ICAP, USSD.
destination	Optional	String	MSISDN or email of the subscriber of the interaction.
altnum	Optional	String	Alternate MSISDN
response	Optional	String	The response (if any) to a SMS.

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direction	Optional	String	Defaults to 'Outbound' if not provided.
waspld	Optional	String	The WASP identifier for which the service applies. This parameter is required if the interaction type is listed in the 'Double Opt-In' or 'MSISDN Forwarding'
waspname	Optional	String	The WASP Name
serviceId	Optional	String	The WASP service identifier. This parameter is required if the interaction type is listed in the 'Double Opt-In' interaction table in 7.3
serviceName	Optional	String	The WASP service name in full
sentYN	Optional	String	Interaction sent confirmation
sentDate	Optional	String	Format e.g. 2020-06-29 17:40:32.
deliveredYN	Optional	String	Interaction delivery receipt confirmation.
deliveredDate	Optional	String	Format e.g. 2020-06-29 17:40:32.
frequency	Optional	String	The frequency of the WASP Service – Daily, Weekly, Monthly
price	Optional	String	The Price of the WASP service in Cents (.e.g. 599)
hashValue	Optional	String	The Hash Value for the WASP Service
reference	Optional	String	The WASP reference for the service
triggerUrl	Optional	String	The requested / trigger URL.
destinationUrl	Optional	String	The destination URL.
sourceIpAddress	Optional	String	The source IP address. This parameter is optional.
consentStartDate	Optional	String	The start date of the consent. This parameter is required if the interaction type is Fwd 30 Days Accept. E.g. "2011-03-09 07:56:00"
consentEndDate	Optional	String	The end date of the consent. This parameter is required if the interaction type is Fwd 30 Days Accept. E.g. "2011-03-09 07:56:00"
channelId	Optional	String	The Channnel ID is an indicator of the channel which is making the request, e.g. USS-001. Refer to Table 418 for possible values.

			The Channel ID will be supplied as a 7-digit alphanumeric code.
revenueOriginId	Optional	String	The Revenue Orig ID is a campaign specific numeric identifier e.g 1000006 for Double your Data. Refer to Table 419 for possible values. The Revenue Orig ID will be supplied as a 7-digit numeric code.
failureReason	Optional	String	Failure Reason as supplied by Notifications manager

3.1 Sample Request

3.1.1 DOI Accepted Request

Accepted Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:int="http://localhost/ci/interface">
  <soapenv:Header/>
  <soapenv:Body>
    <int:InteractionRequest>
      <interactionType>DOI/Double OPT In Accepted</interactionType>
      <interactionDate>2020-07-26 13:10:00</interactionDate>
      <direction>Inbound</direction>
      <waspid>Basebone</waspid>
      <waspname>Basebone</waspname>
      <serviceId>Stylix</serviceId>
      <serviceName>Stylix</serviceName>
      <frequency>Once off</frequency>
      <price>8059</price>
      <sentDate>2020-07-26 13:08:00</sentDate>
      <msisdn>0825524266</msisdn>
      <message>Customer accepted Double OPT In request for Stylix</message>
      <origination>USSD</origination>
      <originId>E0</originId>
    </int:InteractionRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

3.1.2 DOI Rejected Request

DOI Rejected Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:int="http://localhost/ci/interface">
  <soapenv:Header/>
  <soapenv:Body>
    <int:InteractionRequest>
      <interactionType>DOI/Double OPT In Rejected</interactionType>
      <interactionDate>2020-07-26 13:15:00</interactionDate>
```

```

<direction>Inbound</direction>
<waspid>worldplay</waspid>
<waspname>worldplay</waspname>
<serviceid>Zonechoc</serviceid>
<servicename>BeFit</servicename>
<sendedate>2020-07-26 13:14:30</sendedate>
<msisdn>0825524266</msisdn>
<message>Customer rejected Double OPT In request for Yoga4Health</message>
<origination>USSD</origination>
<originid>E0</originid>
</int:InteractionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

3.1.3 DOI IN Request

Double OPT In Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:int="http://localhost/ci/interface">
  <soapenv:Header/>
  <soapenv:Body>
    <int:InteractionRequest>
      <interactionType>DOI/Double OPT In</interactionType>
      <interactionDate>2020-08-26 13:10:00</interactionDate>
      <direction>Outbound</direction>
      <waspid>Basebone</waspid>
      <waspname>Basebone</waspname>
      <serviceid>Mydownlow</serviceid>
      <frequency>Once off</frequency>
      <price>8059</price>
      <servicename>Backgrounds for WhatsApp</servicename>
      <sendedate>2020-08-26 13:08:00</sendedate>
      <msisdn>0825524266</msisdn>
      <message>You're about to subscribe to OnGames FREE for 1 day thereafter R10.0
0 per day. Reply '1' to accept or '2' to decline.test1</message>
      <origination>USSD</origination>
      <originid>E0</originid>
    </int:InteractionRequest>
  </soapenv:Body>
</soapenv:Envelope>

```

3.1.4 SMS Notification Request

SMS Notification Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:int="http://localhost/ci/interface">
  <soapenv:Header/>

```

```

<soapenv:Body>
  <int:InteractionRequest>
    <interactionType>SMSNOTIFICATION</interactionType>
    <interactionDate>2020-09-01 13:10:00</interactionDate>
    <msisdn>0825524266</msisdn>
    <message>SMS text here</message>
    <origination>USSD</origination>
    <originId>E0</originId>
  </int:InteractionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

3.1.5 Stop Request

Stop Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:int="http://localhost/ci/interface">
  <soapenv:Header/>
  <soapenv:Body>
    <int:InteractionRequest>
      <interactionType>Stop</interactionType>
      <interactionDate>2020-07-26 13:10:00</interactionDate>
      <direction>Inbound</direction>
      <wasId>Basebone</wasId>
      <wasName>Basebone</wasName>
      <serviceId>Stylis</serviceId>
      <serviceName>Stylis</serviceName>
      <frequency>Once off</frequency>
      <price>89</price>
      <sentDate>2020-07-26 13:08:00</sentDate>
      <msisdn>0825524266</msisdn>
      <message>Welcome Notification e.g. congratulation on your ...</message>
      <origination>USSD</origination>
      <originId>E0</originId>
    </int:InteractionRequest>
  </soapenv:Body>
</soapenv:Envelope>

```

3.1.6 Welcome Notification Request

Welcome Notification Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:int="http://localhost/ci/interface">
  <soapenv:Header/>
  <soapenv:Body>
    <int:InteractionRequest>
      <interactionType>Welcome Notification</interactionType>

```

```

<interactionDate>2020-07-26 13:10:00</interactionDate>
<direction>Inbound</direction>
<wasId>Basebone</wasId>
<wasName>Basebone</wasName>
<serviceId>Stylix</serviceId>
<serviceName>Stylix</serviceName>
<frequency>Once off</frequency>
<price>8059</price>
<sentDate>2020-07-26 13:08:00</sentDate>
<msisdn>0825524266</msisdn>
<message>Customer accepted Double OPT In request for Stylix</message>
<origination>USSD</origination>
<originId>E0</originId>
</int:InteractionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

3.2 Sample Response

3.2.1 Successful Response

NOTE: No attributes are returned on a successful response

Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soap-env:Header xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/" />
  <env:Body xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
    <ns2:InteractionResponse xmlns:ns2="http://localhost/ci/interface/" />
  </env:Body>
</soapenv:Envelope>

```

3.2.2 Failure Response

Parameter Name	Format	Parameter Value description
group	String	'APPLICATION_ERROR'
code	String	Failure code
message	String	The reason for the failure

Failure Response:

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soap-env:Header xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/" />

```



```

<env:Body xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <S:Fault xmlns:ns4="http://www.w3.org/2003/05/soap-envelope">
    <faultcode>S:Server</faultcode>
    <faultstring>[cii1@BETEIS05]:Invalid MSISDN provided.</faultstring>
    <detail>
      <ns2:InterfaceError xmlns:ns2="http://localhost/ci/interface">
        <group>APPLICATION_ERROR</group>
        <code>1</code>
        <message>[cii1@BETEIS05]:Invalid MSISDN provided.</message>
      </ns2:InterfaceError>
    </detail>
  </S:Fault>
</env:Body>
</soapenv:Envelope>

```

Project Manager

Name		Date Received:	
Approved for Investigation?	<div>YES <input type="checkbox"/></div> <div>NO <input type="checkbox"/></div>		
Project Sponsor Signature			
Date Approved			
Comments:			

Project Sponsor/Owner

Name	Hazel Mokoto	Date Received:	
Approved for Investigation?			

Change Request

	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Authors Signature		
Date Approved		
Comments:		