

**Interface Specification (Swagger)**

**Engineering Fusion FI API**

**Financial Institutions**

Just4You Offers Query &Purchase

|  |  |
| --- | --- |
| Group**: Engineering** | Version: Eng. Fusion Integration Spec V4.3.1 |
| Division  **NSD: Network Service Development** | Department:  Business Support Systems |
| Author: SD- BSS: Patrick Maloma |  |

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| **DISTRIBUTION LIST** | | |
| Copy Number | Name | Group/ Division/Organisation |
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| 2 | Nozipho Nyandoro | Manager: NSD BSS |
| 3 | SD-BSS | Engineering: Network Service Development |
| 4 | Renier Ukena | PM: Engineering |
| 5 | SD INT | SD INT |

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| **ABBREVIATION LIST** | |
| iCAP | Integrated Customer Administration and Provisioning |
| PPFE | Pre-paid Front End |
| USSD | Unstructured Supplementary Service Data |
| CCS | Converged Charging Service |
| Eng. | Engineering |
| CRM | Customer Relationship Management |
| CDR | Call Data Record |
| PPFE | Prepaid Front End |
| PAMS | Provisioning Administration Management System |

# Introduction

Engineering fusion will manage, maintain and orchestrate all FI recharge transactions from mainly third party systems. The FI interface is compartmentalised into three separate services namely, eligibility for customer validation, account adjustment for airtime recharges and subscription for bundle purchases. This document defines an application programming interface (API) for the financial institution (FI) purchases of personalised Just4You bundles. These bundles are tailor-made offers for customers based on their recharge propensity.

The service will be invoked by various systems to obtain the offers and subsequently purchase these Just4You bundles.

The API contains multiple auxiliary functions exposed as a REST web service in JSON to allow the web service client to do the purchases. These functions include *eligibility* to get the Just4Youoffers that the customer qualifies for and *servicesubscription* to purchase the redeemed offer.

## Authentication and Authorization

***Authentication***

The consumer of the Web service needs to be registered and be provided with the username and password. TLS v1.2 will be utilised to authenticate the service provider to the service consumer which will verify the following concerning the server certificate:

* is issued by a trusted provider (i.e. CA)
* is not expired
* is not revoked
* matches the domain name of the service
* The server has proven that it has the private key associated with the public key certificate (by properly signing something or successfully decrypting something encrypted with the associated public key).

***Invalid Credentials***

Authenticating with invalid credentials will result in HTTP error code 401 Unauthorized:

HTTP/1.0 401 Unauthorized

***Base64 encryption applies, single authentication string (User name and PWD)***

***Authorization***

In addition to the service consumer being authenticated, the user need to be authorized to call a specific service or operation. An error response will be return if the authenticated user is not allowed to invoke the operation.

The following info concerning the server certificate has to be verified:

* is issued by a trusted provider (i.e. CA)
* is not expired
* is not revoked
* matches the domain name of the service
* The server has proven that it has the private key associated with the public key certificate (by properly signing something or successfully decrypting something encrypted with the associated public key).

## Validation

The Financial institution should ensure the following info is sent correctly.

* Valid Financial Institution ID code
* Valid Channel ID
* Unique Transaction ID
* Valid Recharge Amount (This is optional)

The financial institution should verify that an MSISDN is an active Vodacom pre-paid/hybrid subscriber number (MSISDN) before sending a purchase request. The subscriber profile lookup will be used for this customer verification

# Retries

Financial institution should retry a transaction after 5 seconds, with a maximum of three retries, if they don’t get a successful response from fusion. If a retry is sent, same Transaction ID (Conversation ID) must sent. FMW will first perform a query against CCS to check if the transaction ID is the same, if the transaction ID is the same an error 26 response (Duplicate transaction) is returned.

## Duplicate Transactions

Financial institution receives a time out or no response from Eng. Fusion (FMW). The FI can retry the transaction using the same transaction ID. For a retry or duplicate transaction, the Trans ID must be the same as the previous transaction.

## No response

If no response is received for any of the messages, the exact same message must be repeated using the same TID, MSISDN, amount, etc. A response will be returned showing the request as duplicate and what the current status of the transaction is.

## Error codes

Return codes indicate the result of the attempted operation. The following return codes are possible.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Return code** | **Eligibility request** | **Adjustment request** | **Bundle Purchase** |
| Approved validation  Or Recharge completed successfully | 200 | X | X | X |
| Delay in processing the recharge | 10 |  | X | X |
| Invalid Recharge (e.g. Recharge attempt without activation, Business rule violation) | 12 |  | X |  |
| Invalid Recharge Denomination | 13 |  | X |  |
| Invalid Financial Institution Id | 15 | X | X | X |
| Vodacom related problem  This response code indicates that the transaction was not successfully processed due to a problem on the back-end system.  For single occurrences, the financial institution may re-submit the transaction with a **new** transaction id. For multiple occurrences in succession, the financial institution must report the problem to Vodacom by following the fault reporting procedure as specified in the SLA. | 22 | X | X | X |
| Duplicate transaction (Mess ID 001 same Trans ID)) | 26 |  | X | X |
| No. of retries exceeded. Max (3) retries |  |  | X | X |
| Invalid MSISDN | 42 | X | X | X |
| Vodacom related problem  This response code indicates that the back-end system is either unavailable or did not respond in time.  For single occurrences, the financial institution may re-submit the transaction with the **same** transaction id. For multiple occurrences in succession, the financial institution must report the problem to Vodacom by following the fault reporting procedure as specified in the SLA. | 500 | X | X | X |

# oPERATIONS

## eligibility – Just4You get offer request

This operation allows a web server client to get Just4You offers against a valid Vodacom customer number (MSISDN). This is a mandatory operation that the FI must call before making a purchase. Engineering Fusion will return a list of eligible Just4You offers that are redeemable for which the customer qualifies for. The eligibility check/operation will in addition be used by Vodacom for the customer verification to ensure it is an active and valid Vodacom number, a check is also made for a valid source IP address and a valid FI.

### Header parameters

The following header parameters is to identify the system or department making the call. It will be presumable to be static information based on the system used. ConversationID/UID however will be systems generated and must be unique to identify each transaction.

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Mandatory/Optional** | **Description/Possible Values** |
| Authorization | String | Mandatory | Base64 value of username:password |
| CountryCode | String | Mandatory | Defined as “ZA”, length of 2 |
| LanguageCode | String | Optional | Defined as “en” length of 2 |
| Operator | String | Mandatory | Example “Vodacom” or “ABSA” |
| Division | String | Optional | Defined as “Channels Division ” e.g. telecommunications |
| MessID | String | Mandatory | Applicable only for purchase request. Either 000 for initial purchase or 001 for retransmission |
| System | String | Mandatory | Defined as the systems using the service length of 6, e.g. FI\_FNB |
| X-Correlation-ConversationID | String | Mandatory | The Unique ID generated by a 3rd party conforming to the following format:  YYMMDDHHMMSSabcde  with abcde a random generated number. |

### Request body/payload parameters1

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Mandatory/Optional** | **Description/Possible Values** |
| $.parts.customerAccount.id[\*].value | String | Mandatory | Identifier value used for query eg 27829809910 |
| $.parts.subscription[\*].eligibilitySpecification.category.id[\*].value | String | Mandatory | J4U |
| Sorting | String | Mandatory | The returned response payload is sorted based on "-$.createdDate" |
| Pagination | String | Mandatory | The maximum number of transactions to be returned |
| Filter | String | Mandatory | Filter specific transactions |
| $.channel.id[\*].value | String | Mandatory | FI Code value assigned to the FI eg 878888 |
| "$.parts.subscription[\*].eligibilitySpecification.characteristics[\*].characteristicName=CampaignIdentifier & $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].value | String | Optional | Campaign\_Identifier eg CC |
| **"$.parts.subscription[\*].eligibilitySpecification.characteristics[\*].characteristicName=SponsorMSISDN & $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].value** | **String** | **Mandatory** | **27760000000** |
| $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].characteristicName=OfferValidity & $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].value | String | Optional | OfferValidity.  Validity/expiry of bundle offer. The value is string in any of the 2 formats:  PxD – for number of days  PTxH- for number of hours  PTxM – for number of minutes.  P0YxM – for number of months  PxY – for number of years  For example for 1 day and 30 day bundle, it is P1D and P30D respectively. For hourly bundles such as 1 hour bundle, it will be PT1H. |

### Sample request

|  |
| --- |
| ***Request: eligibility –get offer request* URI: /ServiceCustomerEligibilityAPI/v2/customerEligibility/search** |
| {  "queryOptions": {  "filter": "",  "pagination": {  "count": 0,  "limit": 3  },  "sorting": "-$.created"  },  "queries": [  {  "operator": "ADD",  "query": "$.parts.customerAccount.id[\*].value=27829804976 & $.parts.customerAccount.id[\*].schemeName=MSISDN"  },  {  "operator": "ADD",  "query": "$.parts.subscription[\*].eligibilitySpecification.category.id[\*].value=J4U & $.channel.id[\*].value=930626 & $.parts.channel.id[\*].schemeName=FI Code"  },  {  "operator": "ADD",  "query": "$.parts.subscription[\*].eligibilitySpecification.characteristics[\*].characteristicName=CampaignIdentifier & $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].value=CC\_J4U"  },  {  "operator": "ADD",  "query": "$.parts.subscription[\*].eligibilitySpecification.characteristics[\*].characteristicName=OfferValidity & $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].value=P30D"  }**,**  **{**  **"query": "$.parts.subscription[\*].eligibilitySpecification.characteristics[\*].characteristicName=SponsorMSISDN & $.parts.subscription[\*].eligibilitySpecification.characteristics[\*].value=27763210001",**  **"operator": "AND"**  }  ],  } |

### Response body/payload parameters

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Data Type** | **Description/Possible Values** |
| Subscription ID | String | MSISDN value eg 27829800000 |
| ProductOfferingID | String | Product code used in the charging system |
| eligibilityPrice | String | Cost of bundle in Rands |
| Duration | String | Validity/expiry of bundle offer. The value is string in any of the 2 formats:  PxD – for number of days  PTxH- for number of hours  PTxM – for number of minutes.  P0YxM – for number of months  PxY – for number of years  For example for 1 day and 30 day bundle, it is P1D and P30D respectively. For hourly bundles such as 1 hour bundle, it will be PT1H. |
| OFFER\_CODE | String | J4U offer code eg 00004545 |
| Campaign\_Identifier | String | Identifier of the campaign offer |
| SessionID | String | Transaction id from which the offer was obtained |
| Allocation | String | Allocation/amount/size of bundle. Possible values:  Data unitCodes: either KB or MB or GB eg 10GB or 500MB  Voice unitCodes: Minutes eg 500Minutes  SMS unitCode: units eg 200units |
| Description | String | Bundle description eg PROMO: 500MB + 500MB FREE (TODAY) |
| OLD\_PRICE | String | Price in Rands eg 99 |
| PRICE\_PER\_MB | String | Price in cents eg 33c |
| Promotion\_Type | String | Type of promotion |
| Validity\_Copy | String | Validity message |
| Revenue\_ID | String | Revenue origin ID |
| TreatmentCode | String | Treatment id |
| Payment\_Method | String | Payment method type |
| Subscription\_Type | String | Allocation type eg recurring or once-off |

### Sample responses – success and failure

|  |
| --- |
| ***Successful Response: eligibility –get offer response with 2 Offers*** |
| [  {  "id": [  {  "schemeName": "Subscription ID",  "value": "27829809912",  "schemeAgencyName": "Vodafone"  }  ],  "status": "true",  "parts": {  "subscription": [  {  "eligibilitySpecification": {  "id": [  {  "value": "D276",  "schemeName": "ProductOfferingId",  "schemeAgencyName": "Vodacom"  }  ],  "type": "Data",    "eligibilityIndicator": {  "indicator": true  },  "eligibilityPrice": {  "value": "20.00",  "currencyID": "ZAR"  },  "characteristics": [  {  "characteristicName": "Duration",  "value": "P1D"  },  {  "characteristicName": "OFFER\_CODE",  "value": "00004078"  },  {  "characteristicName": "Campaign\_Identifier",  "value": "CC\_J4U"  },  {  "characteristicName": "SessionID",  "value": "2938YYYYYYYmm8"  },  {  "characteristicName": "TreatmentCode",  "value": "293-ujuu9-YYYYYYmm8"  },  {  "characteristicName": "Payment\_Method",  "value": "CC"  },  {  "characteristicName": "Allocation",  "value": "1GB"  },{  "characteristicName": "OLD\_PRICE",  "value": "99"  },{  "characteristicName": "PRICE\_PER\_MB",  "value": "3c"  },  {  "characteristicName": "Promotion\_Type",  "value": "Save:70%"  },  {  "characteristicName": "Validity\_Copy",  "value": "use within 30 days"  },  {  "characteristicName": "REVENUE\_ID",  "value": "500007"  },  {  "characteristicName": "Subscription\_Type",  "value": "Once"  },  {  "characteristicName": "Description",  "value": "PROMO: 500MB + 500MB FREE (TODAY)"  }  ]  }  },  {  "eligibilitySpecification": {  "id": [  {  "value": "D272",  "schemeName": "ProductOfferingId",  "schemeAgencyName": "Vodacom"  }  ],  "type": "Data",    "eligibilityIndicator": {  "indicator": true  },  "eligibilityPrice": {  "value": "200.00",  "currencyID": "ZAR"  },  "characteristics": [  {  "characteristicName": "Duration",  "value": "P1D"  },  {  "characteristicName": "OFFER\_CODE",  "value": "00004078"  },  {  "characteristicName": "Campaign\_Identifier",  "value": "CC\_J4U"  },  {  "characteristicName": "SessionID",  "value": "2938YYYYYYYmm8"  }, {  "characteristicName": "TreatmentCode",  "value": "293-ujuu9-YYYYYYmm8"  },  {  "characteristicName": "Payment\_Method",  "value": "CC"  },  {  "characteristicName": "Allocation",  "value": "10GB"  },{  "characteristicName": "OLD\_PRICE",  "value": "99"  },{  "characteristicName": "PRICE\_PER\_MB",  "value": "3c"  },  {  "characteristicName": "Promotion\_Type",  "value": "Save:70%"  },  {  "characteristicName": "Validity\_Copy",  "value": "use within 30 days"  },  {  "characteristicName": "REVENUE\_ID",  "value": "500007"  },  {  "characteristicName": "Subscription\_Type",  "value": "Once"  },  {  "characteristicName": "Description",  "value": "PROMO: 500MB + 500MB FREE (TODAY)"  }  ]  }  }  ]  }  }  ] |

|  |
| --- |
| ***Response: Failed response* URI: /ServiceCustomerEligibilityAPI/v2/customerEligibility/search** |
| {  "severity": "Critical",  "failure": [  {  "code": "42",  "text": "Invalid MSISDN",  "dataRef": {  "pathName": "/CustomerEligibilityVBO/Parts/Subscriptions/Subscription/ID",  "pathValueText": "27yyyyyyyyyyy"  }  }  ],  "errorCode": [  {  "dialect": "Vodacom",  "value": "500"  }  ],  "description": [  {  "lang": "en",  "value": "Business Validation Error/s"  }  ],  "category": "Business",  "timestamp": "2020-11-16T13:05:14.554+02:00"  } |

## Purchase – Just4You redeem offer request

This operation allows a web server client to purchase/provision Just4You offers against a valid Vodacom customer number (MSISDN) **after** a successful eligibility response. Engineering Fusion will allocate the bundle to customer and an SMS notification delivery to customer.

**NB. The offer details ProductOfferingID, Duration, SessionID, Offer\_Code, Campaign\_Identifier and Allocation returned in the eligibility request should be used in the subsequent purchase request to ensure successful provisioning as these parameters are validated upon the reception of the provisioning request.**

### Header parameters

The header parameters for this operation is similar to those discussed in section 2.1.1.

### Body/payload parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Mandatory/Optional** | **Description/Possible Values** |
| Subscription ID | String | Mandatory | MSISDN value eg 27829809910 |
| Dealer ID | String | Optional | Dealer ID eg 77888. Reserved only for FI channels who have been allocated Dealer ID. If not, please do not use the field |
| FI Code | String | Mandatory | FI identifier eg 605033 |
| ChannelId | String | Optional | Reporting ID for a channel eg US-001 |
| RevenueOriginId | String | Optional | Reporting ID for revenue stream eg 100001 |
| SOID | String | Mandatory | ProductOfferingID eg D001 |
| Duration | String | Mandatory | Validity/expiry of bundle offer. The value is string in any of the below formats:  PxD – for number of days  PTxH- for number of hours  PTxM – for number of minutes.  P0YxM – for number of months  PxY – for number of years  For example for 1 day and 30 day bundle, it is P1D and P30D respectively. For hourly bundles such as 1 hour bundle, it will be PT1H. |
| OFFER\_CODE | String | Mandatory | J4U offer code eg 00004545 |
| Campaign\_Identifier | String | Mandatory | Identifier of the campaign offer |
| SessionID | String | Mandatory | Transaction id from which the offer was obtained |
| price | String | Mandatory | Cost of bundle in rands |
| allowance | String | Mandatory | Allocation/amount/size of bundle. Possible values:  Data unitCodes: either KB or MB or GB  Voice unitCodes: Minutes  SMS unitCode: units |
| TreatmentCode | String | Optional | Treatment id of the offer |
| Payment\_Method | String | Optional | Payment\_method |
| Description | String | Optional | Description of the offer |

### Sample request

|  |
| --- |
| ***Request: purchase –redeem offer request* URI: /subscriptionAPI/v2/subscription** |
| {  "id": [  {  "value": "27768870468",  "schemeName": "Subscription ID",  "schemeAgencyName": "Vodacom"  }  ],  "roles": {  "agent": {  "id": [  {  "value": "01414",  "schemeName": "Dealer ID",  "schemeAgencyName": "Vodacom"  },  {  "value": "904003",  "schemeName": "FI Code",  "schemeAgencyName": "Vodacom"  },  {  "value": "US6667",  "schemeName": "ChannelId",  "schemeAgencyName": "Vodacom"  },  {  "value": "188899",  "schemeName": "RevenueOriginId",  "schemeAgencyName": "Vodacom"  }  ],  "name": "Name of Financial Institution"  }  },  "lineItem": [  {  "productElement": {  "customerProduct": {  "id": [  {  "value": "D036",  "schemeName": "SOID",  "schemeAgencyName": "Vodacom"  }  ]  },  "specification": {  "characteristicsValue": [  {  "characteristicName": "Duration",  "value": "P1D"  },  {  "characteristicName": "OFFER\_CODE",  "value": "000003345"  },  {  "characteristicName": "Campaign\_Identifier",  "value": "CC\_J4U"  },  {  "characteristicName": "TreatmentCode",  "value": "kkjuj-liku777766-ujhy666"  },  {  "characteristicName": "Payment\_Method",  "value": "CC"  },  {  "characteristicName": "Description",  "value": " PROMO: 500MB + 500MB FREE"  },  {  "characteristicName": "SessionID",  "value": "8837663yyyyyyy"  }  ]  }  },  "price": [  {  "type": "Financial Institution",  "amount": {  "value": "100.00",  "currencyID": "ZAR"  }  }  ],  "allowance": {  "value": "3",  "unitCode": "GB"  }  }  ]  } |

### Sample response – Success and Fail

|  |
| --- |
| ***Response: sucessful response*** |
| {"id": [{  "schemeName": "X-Correlation-ConversationID",  "value": "9877223asaddWE32",  "schemeAgencyName": "Vodacom"  }]} |

|  |
| --- |
| ***Response: failed response*** |
| {  "severity": "Critical",  "failure": [  {  "code": "42",  "text": "Invalid MSISDN",  "dataRef": {  "pathName": "/CustomerEligibilityVBO/Parts/Subscriptions/Subscription/ID",  "pathValueText": "27yyyyyyyyyyy"  }  }  ],  "errorCode": [  {  "dialect": "Vodacom",  "value": "500"  }  ],  "description": [  {  "lang": "en",  "value": "Business Validation Error/s"  }  ],  "category": "Business",  "timestamp": "2020-11-16T13:05:14.554+02:00"  } |

# endpointS

The endpoint for this service.

|  |
| --- |
| *Endpoints : https://fusionfi-test.vodacom.co.za:11443* |
| /ServiceCustomerEligibilityAPI/v2/customerEligibility/search  /subscriptionAPI/v2/subscription |

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