

Interface Specification

Summer Balances



Group: Engineering	Version: 0.1
Division NSD: Network Service Development	Department: Business Support Systems
Author: SD BSS	

Table 1: Document History

Version	Description	Author	Date
0.1	Draft version of document	Yolanda Nkosi	07/09/2022

Table 2: List of Abbreviations / Acronyms / Definitions

Abbreviation	Description
Online	(Portal/App/Responsive Web)
USSD	Unstructured Supplementary Service Data
IVR	
Keyword SMS	
Siebel	
MII	
ICAP	
Eng. Fusion	Fusion Middleware

Table 3: List of key project stakeholders and contributors

Person(s)	Function	Area
Yolanda Nkosi	Specialist	Engineering
Nyandoro, Nozipho	Manager	Engineering

TABLE OF CONTENTS

2. AUTHENTICATION AND AUTHORIZATION	5
3 INTERFACE	5
3.1. HEADER PARAMETERS.....	5
3.2. BALANCE VIEW THROUGH DIAGRAM:	10
3.2.1. BALANCE QUERY SAMPLE REQUEST.....	11
3.2.2. BALANCE QUERY SAMPLE RESPONSE	11
4. ERROR CODES	22
SEE ATTACHED DOCUMENTS.....	22
5. APPENDIX	22

1 INTRODUCTION

Vodacom's prepaid and hybrid/TopUp subscriber base is currently hosted on Redknee's Online Charging Service (OCS), while the postpaid base is hosted on Huawei's Converged Charging Service (CCS). As part of Vodacom's convergence strategy, a decision has been made to migrate all subscriber's types to Huawei's CCS.

This Engineering Fusion spec aims to detail the specific technical requirements that will impact CRMs, and Channels in the provisioning of services to the Huawei CCS. This Spec will be a living document, and will be updated regularly as products and features are introduced during the Convergence Project cycle.

1.1 SCOPE

- i. Online and App Balance enquiries via Engineering Fusion.
- ii. USSD balance enquiries via Engineering Fusion.
- iii. IVR balance enquiries Engineering Fusion.
- iv. Keyword balance enquiries.
- v. Siebel balance enquiries.
- vi. ICAP balance enquiries.
- vii. MII balance enquiries.

1.2 ASSUMPTIONS

- i. Service would be exposed as an REST API.
- ii. Service spec would include all possible technical and business error codes to be consumed by channels.

1.3 REQUIREMENT

- i. Engineering Fusion to cater for all channels for Prepaid/TopUp and Postpaid subscribers. This will be realised by exposing different Vodafone CSM compliant API's which will be used for querying subscribers account balance.
- ii. Engineering Fusion will return balances in all different bundle sizes.
- iii. Engineering Fusion will

2. AUTHENTICATION AND AUTHORIZATION

Authentication

The consumer of the Web service needs to be registered and be provided a username and password.

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.

3 INTERFACE

The protocol used to communicate between the Fusion and the impacted systems is based on REST (Representational state transfer) over JSON.

3.1. HEADER PARAMETERS

The following header parameters is to identify the system, department making the call. It will presumable be static information based on the system used. Conversation ID/UID however will be systems generated and must be unique for easy identification.

Field Name	Json Type	M/O	Description/Possible Values
CountryCode	String	Mandatory	Defined as "ZA"
LanguageCode	String	Optional	Defined as "en"
Operator	String	Mandatory	Defined as "Vodacom"
Division	String	Optional	Defined as "Channels Division "
System	String	Mandatory	Defined as "Icap "
ConversationID	string	Mandatory	TID Prefixed Unique transaction Id

3.1.1. Service Request Parameters:

Field Name	Json Type	M/O	Description/Possible Values
.serviceIdentifier.value	String	M	Indicates a service identifier, which can be a MSISDN number
.serviceIdentifier.schemeName	String	M	Indicates whether the service identifier specified is an MSISDN number
Query.filter	String	O	Will allow filtering of bundles, to only view specific bundles.
Query.pagination	String	O	Will allow for paging to only view specific bundles.
Query.sorting	String	O	Will allow sorting of balances in a certain manner.

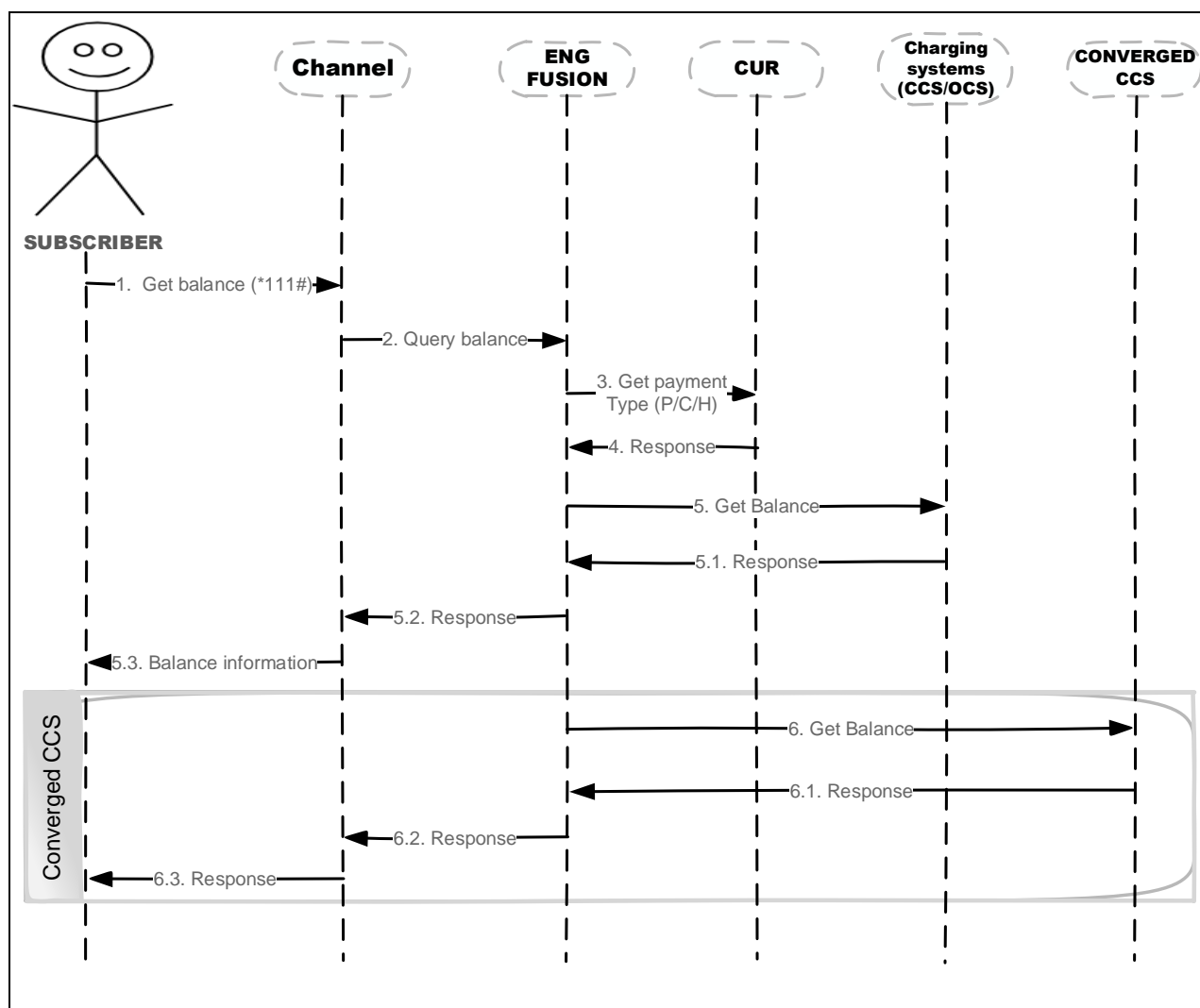
3.1.2. Service Response Parameters:

Original field Name	Field Name	Json Type	M/O	Description/Possible Values
Product ID	.id.value	String	M	The unique identifier of the product/service as described by the Charging system CCS and OCS e.g. Data1GB for prepaid and hybrid
Product ID name	.id.schemeName	token	M	The unique identifier of the product ID e.g. Package name
Bundle Name	.name	String	M	Same name that would be displayed on UI e.g. Gaming5
Bundle Description	.desc	String	M	Bundle description info e.g. Vodacom Ticket Gaming 30 days
Bundle Type	.type	String	M	Data/SMS/MMS/Airtime e.g. DATA
Category	"listHierarchyId": "mainCategory",	String	O	The bundle category in usage, main category and billing cycle e.g. Once off
	"listHierarchyId": "billingCycle",	String	M	
	"listHierarchyId": "Usage",	String	O	
Usage Restricted	.category.value	String	O	Is the bundle restricted in usage e.g. Night owl. E.g. Value = Limited Usage, listHierarchyId = Product
	.category.listHierarchyId			
Frequency	.category.value	String	O	Is it a Once- off /Recurring E.G. Value = Once off,
	.category.listHierarchyId			
Start Date	.validityPeriod.from Date.dateString	String	O	Start date of the bundle e.g. 2018-08-06T10:54:27.858+02:00 dateStringformat": "ISO8601"
Expiry Date	.validityPeriod.toDate.dateString	String	M	Expiry date of the bundle e.g. 2018-08-06T10:54:27.858+02:00 dateStringformat": "ISO8601"

Bundle Used	.details.balanceAllowance.allowance	decimal	O	Bundle consumed info. E.g. Value = 0 unitCode = Kilobytes = Used type
	.details.balanceAllowance.allowance.unitCode			
	.details.balanceAllowance.type	String		
Bundle Remaining	.details.balanceAllowance.allowance	decimal	O	Current bundle balance info. E.g. Value = 0 UnitCode = Kilobytes Type = Remaining
	.details.balanceAllowance.allowance.unitCode	string		
	.details.balanceAllowance.type	String		
Bundle Allocated	.details.balanceAllowance.allowance	decimal	O	Size of the allocation. E.g. Value = 3072000 Unitcode = Kilobytes Type = allocated
	.details.balanceAllowance.allowance.unitCode	string		
	.details.balanceAllowance.type	String		
Total Unconstrained Used	.details.balanceAllowance.allowance	decimal	O	Remaining Current bundle balance info. E.g. Value = 3072000 Unitcode = Kilobytes Type = Total allocated
	.details.balanceAllowance.allowance.unitCode	string		
	.details.balanceAllowance.type	String		
Total Unconstrained Allocated	.details.balanceAllowance.allowance	decimal	O	Sum of total allocated for a particular bundle type that has restrictions in use. E.g.: Sum of all extra or bonus airtime which has constraints in use. Value = 3072000 Unitcode = Kilobytes Type = Total constrained allocated
	.details.balanceAllowance.allowance.unitCode	string		
	.details.balanceAllowance.type	string		
Total Unconstrained Remaining	.details.balanceAllowance.allowance	decimal	O	Sum of total remaining for a particular bundle type. Would be shown as a summary to the user Ex: Sum of all other remaining bundles which have no usage restriction.
	.details.balanceAllowance.allowance.unitCode	string		
	.details.balanceAllowance.type	string		
	.details.balanceAllowance.allowance			FairUsageThreshold will be displayed as "Limitless", once bundle has reached

FairUsageThreshold	.details.balanceAllowance.allowance.unitCode	string	O	the set threshold, the remaining value will be shown in the balances.
	.details.balanceAllowance.type			
Out of bundle Usage	.details.balanceAllowance.allowance	string	O	Out of bundle usage will display a postpaid subscribers out of bundle usage. Once out of bundle, the value will return with a negative amount.
	.details.balanceAllowance.allowance.unitCode			
	.details.balanceAllowance.type			
Balance Amount	.details.balanceAmount.amount	string	O	Current Airtime balance info. E.g. Value = 0 CurrencyID = ZAR Type = Remaining / Total
	.details.balanceAmount.amount	string		
	.details.balanceAmount.amount	string		
Total	.details.balanceAllowance.total	string	O	Bundle Total per offering presented. E.g. Allocated; 51200 kb Used 25600 kb Remaining 25600kb Total 25600kb
	.details.balanceAllowance.allowance.unitCode	string		
	.details.balanceAllowance.type	string		

3.2. BALANCE VIEW THROUGH DIAGRAM:



3.2.1. BALANCE QUERY SAMPLE REQUEST

The bundle request for all prepaid, hybrid and postpaid subscriber to be sent to the Engineering Fusion system.

Sample Request

```
{
  "queryOptions": {
    "filter": "",
    "pagination": {
      "count": 0,
      "limit": 100
    },
    "sorting": "-$.createdDate"
  },
  "queries": [
    {
      "query": "$.serviceIdentifier.value=27828811551 & $.serviceIdentifier.schemeName=MSISDN"
    }
  ]
}
```

3.2.2. BALANCE QUERY SAMPLE RESPONSE

The bundle response for all prepaid, hybrid and postpaid subscriber will return purchased active bundles individually. I.e. every active bundle the subscriber purchased will be returned on the query.

Prepaid, Hybrid and Postpaid Sample;

Sample Response

```
[
  {
    "id": [
      {
        "value": "MainAccount",
        "schemeName": "packageName"
      }
    ],
    "name": "Recharge Airtime",
    "desc": "Recharge Airtime",
    "type": "Airtime",
    "categories": [
      {
        "value": "Airtime",
        "listHierarchyId": "Product"
      }
    ],
    "details": {
      "balanceAmount": [
        {

```

```

        "type": "Remaining",
        "amount": {
            "value": "0.0",
            "currencyID": "ZAR"
        }
    },
    {
        "type": "Total",
        "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
        }
    }
]
}
},
{
    "id": [
        {
            "value": "VZA_Voda_value",
            "schemeName": "packageName"
        }
    ],
    "name": "VZA_Voda_value",
    "desc": "VZA_Voda_value",
    "type": "Airtime",
    "categories": [
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-09-05T11:06:01",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {
                "value": "2022-09-30T23:59:59",
                "dateStringformat": "ISO8601"
            }
        }
    },
    "details": {
        "balanceAmount": [
            {

```

```

        "type": "Remaining",
        "amount": {
            "value": "15.0",
            "currencyID": "ZAR"
        }
    },
    {
        "type": "Total",
        "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
        }
    }
]
}
},
{
    "id": [
        {
            "value": "VZA_Smartcall",
            "schemeName": "packageName"
        }
    ],
    "name": "VZA_Smartcall",
    "desc": "VZA_Smartcall",
    "type": "Airtime",
    "categories": [
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-08-24T15:22:22",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {
                "value": "2036-12-31T23:59:59",
                "dateStringformat": "ISO8601"
            }
        }
    },
    "details": {
        "balanceAmount": [
            {

```

```

        "type": "Remaining",
        "amount": {
            "value": "20.0",
            "currencyID": "ZAR"
        }
    },
    {
        "type": "Total",
        "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
        }
    }
]
}
},
{
    "id": [
        {
            "value": "uChooseMonthly",
            "schemeName": "packageName"
        }
    ],
    "name": "RED Flexi",
    "desc": "RED Flexi",
    "type": "Airtime",
    "categories": [
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-09-01T00:00:00",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {
                "value": "2022-10-31T23:59:59",
                "dateStringformat": "ISO8601"
            }
        }
    },
    "details": {
        "balanceAmount": [
            {

```

```

        "type": "Remaining",
        "amount": {
            "value": "130.0",
            "currencyID": "ZAR"
        }
    },
    {
        "type": "Total",
        "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
        }
    }
]
}
},
{
    "id": [
        {
            "value": "uChooseMonthly",
            "schemeName": "packageName"
        }
    ],
    "name": "RED Flexi",
    "desc": "RED Flexi",
    "type": "Airtime",
    "categories": [
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-08-09T09:21:07",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {
                "value": "2036-12-31T23:59:59",
                "dateStringformat": "ISO8601"
            }
        }
    },
    "details": {
        "balanceAmount": [
            {

```

```

        "type": "Remaining",
        "amount": {
            "value": "103.55",
            "currencyID": "ZAR"
        }
    },
    {
        "type": "Total",
        "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
        }
    }
]
}
},
{
    "id": [
        {
            "value": "uChooseMonthly",
            "schemeName": "packageName"
        }
    ],
    "name": "RED Flexi",
    "desc": "RED Flexi",
    "type": "Airtime",
    "categories": [
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-08-09T09:20:52",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {
                "value": "2022-09-30T23:59:59",
                "dateStringformat": "ISO8601"
            }
        }
    },
    "details": {
        "balanceAmount": [
            {

```



```

        "type": "Remaining",
        "amount": {
            "value": "27.45",
            "currencyID": "ZAR"
        }
    },
    {
        "type": "Total",
        "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
        }
    }
]
}
},
{
    "id": [
        {
            "value": "886573",
            "schemeName": "offeringKey"
        },
        {
            "value": "J031",
            "schemeName": "offeringCode"
        }
    ],
    "name": "Summer Cashback Wallet",
    "desc": "Summer Cashback Wallet",
    "type": "Airtime",
    "categories": [
        {
            "value": "once-off",
            "listHierarchyId": "billingCycle"
        },
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-09-05T11:06:01",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {

```

```

        "value": "2022-09-30T23:59:59",
        "dateStringformat": "ISO8601"
      }
    },
    "details": {
      "balanceAmount": [
        {
          "type": "Remaining",
          "amount": {
            "value": "15.0",
            "currencyID": "ZAR"
          }
        },
        {
          "type": "Total",
          "amount": {
            "value": "311.0",
            "currencyID": "ZAR"
          }
        }
      ]
    }
  ]
}
]

```

Query Airtime Balance:

Request Message

```

{
  "queryOptions": {
    "filter": "$.categories[*].value=Airtime",
    "pagination": {
      "count": 0,
      "limit": 100
    },
    "sorting": "-$.createdDate"
  },
  "queries": [
    {
      "query":
$.serviceIdentifier.schemeName=MSISDN"                                "$.serviceIdentifier.value=27721529211&
    }
  ]
}

```

Response Message

```

[
  {
    "name": "Recharge Airtime",
    "details": {
      "balanceAmount": [

```

```

        {
            "amount": {
                "currencyID": "ZAR",
                "value": "15"
            },
            "type": "Remaining"
        },
        {
            "amount": {
                "currencyID": "ZAR",
                "value": "718.2"
            },
            "type": "Total"
        }
    ]
}
{
    "id": [
        {
            "value": "886573",
            "schemeName": "offeringKey"
        },
        {
            "value": "J031",
            "schemeName": "offeringCode"
        }
    ],
    "name": "Summer Cashback Wallet",
    "desc": "Summer Cashback Wallet",
    "type": "Airtime",
    "categories": [
        {
            "value": "once-off",
            "listHierarchyId": "billingCycle"
        },
        {
            "value": "Airtime",
            "listHierarchyId": "Product"
        }
    ],
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "value": "2022-09-05T11:06:01",
                "dateStringformat": "ISO8601"
            }
        },
        "toDate": {
            "dateString": {
                "value": "2022-09-30T23:59:59",
                "dateStringformat": "ISO8601"
            }
        }
    },
    "details": {
        "balanceAmount": [
            {
                "type": "Remaining",
                "amount": {
                    "value": "15.0",
                    "currencyID": "ZAR"
                }
            }
        ],
        {

```

```

    "type": "Total",
    "amount": {
      "value": "311.0",
      "currencyID": "ZAR"
    }
  },
  "id": [
    {
      "schemeName": "packageName",
      "value": "MainAccount"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "Product",
      "value": "Airtime"
    }
  ],
  "type": "Airtime",
  "desc": "Recharge Airtime"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-12T12:58:35"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-12-31T23:59:59"
      }
    }
  },
  "name": "PrepaidPlanBonus",
  "details": {
    "balanceAmount": [
      {
        "amount": {
          "currencyID": "ZAR",
          "value": "703.2"
        },
        "type": "Remaining"
      },
      {
        "amount": {
          "currencyID": "ZAR",
          "value": "718.2"
        },
        "type": "Total"
      }
    ]
  },
  "id": [
    {
      "schemeName": "packageName",
      "value": "PrepaidPlanBonus"
    }
  ],
  "categories": [

```

```
    {  
      "listHierarchyId": "Product",  
      "value": "Airtime"  
    },  
    {  
      "type": "Airtime",  
      "desc": "PrepaidPlanBonus"  
    }  
  ]  
}
```

RETRIES:

There will be no retries for balance enquiry, if a request fails the channel/user will have to retry the query.

4. ERROR CODES

SEE ATTACHED DOCUMENTS.

5. APPENDIX

5.1. *WSDL or Endpoint*

[http:// fusion-test.vodacom.co.za:7003/ppd/serviceBalanceAPI/v2/serviceBalance/search](http://fusion-test.vodacom.co.za:7003/ppd/serviceBalanceAPI/v2/serviceBalance/search)

5.2. Service Balance:



service-balance_01.zip

5.3. HIGH LEVEL DOCUMENT



G3.01 High Level
Design (HLD) for Perf

5.4. ERROR CODES.



OCS-SW
V500R006C50LG510



OCS-SW
V500R006C50LG510