



Interface Specification

Perfect Balance



Group: Engineering	Version: 0.7
Division NSD: Network Service Development	Department: Business Support Systems
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Table 1: Document History

Version	Description	Author	Date
0.1	Draft version of document	Yolanda Nkosi	03/08/2018
0.2	Draft version of document	Yolanda Nkosi	12/08/2018
0.3	Draft version of document	Yolanda Nkosi	03/10/2018
0.4	Draft version of document	Yolanda Nkosi	10/01/2019
0.5	Updated Document	Yolanda Nkosi	09/04/2019
0.6	Final Draft	Yolanda Nkosi	15/08/2019
0.7	Updated Document	Yolanda Nkosi	23/06/2020

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
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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.fromDate.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 type = Used
	.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



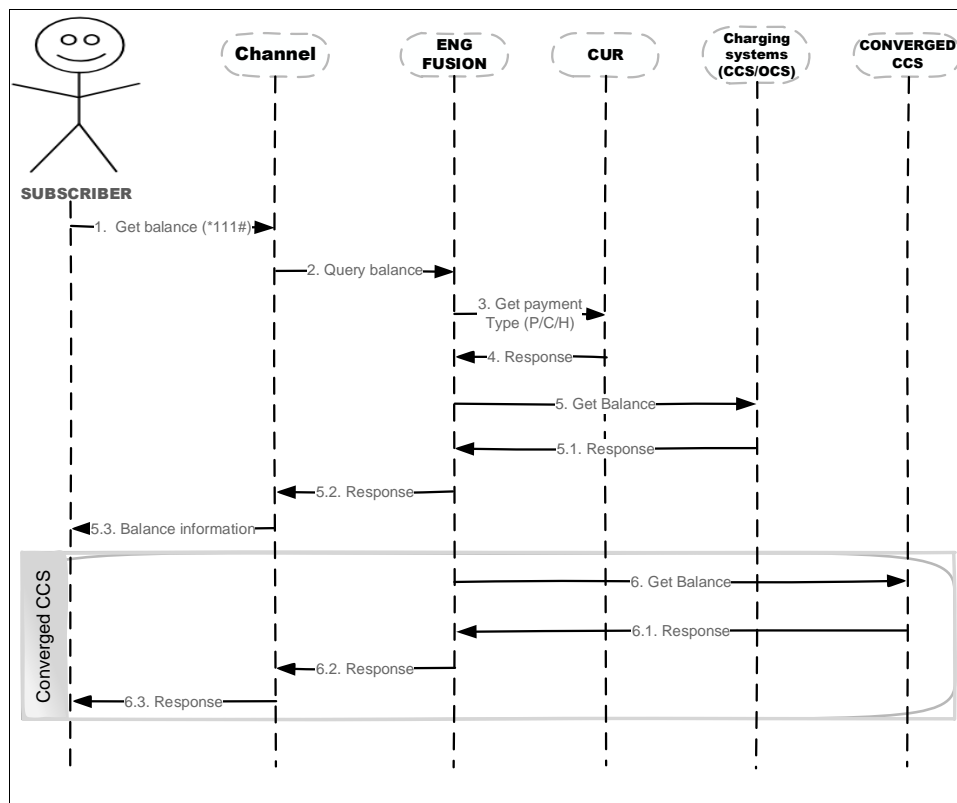
	.details.balanceAllowance.allowance.unitCode	string		Unitcode = Kilobytes Type = Total allocated
	.details.balanceAllowance.type	String		
Total Unconstrained Allocated	.details.balanceAllowance.allowance	decimal	O	Sum of total allocated for a particular bundle type that has restrictions in use. E.g.: 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		
FairUsageThreshold	.details.balanceAllowance.allowance	string	O	FairUsageThreshold will be displayed as "Limitless", once bundle has reached the set threshold, the remaining value will be shown in the balances.
	.details.balanceAllowance.allowance.unitCode			
	.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		

4. PERFECT BALANCES

There are many channels in which balances can be retrieved, however, at this point, balances are misaligned and are not displayed correctly throughout the different channels and this causes customer distrust and confusion. The time and display of bundles is the reason for the misalignment as each channel within Vodacom is currently aggregating values independently rather displaying the balances to the customers from a single source system.

The purpose of this document is to outline the specific requirements that must align balances across customer segments that enquire on balance viewthroughs to be transparent as the billing systems and ensure that all rules are controlled by a single source rather than various channels as it is done currently.

4.1. BALANCE VIEW THROUGH DIAGRAM:



4.1.1. 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": "-$.createdAt"
  },
  "queries": [
    {
      "query": "$.serviceIdentifier.value=27828811551 & $.serviceIdentifier.schemeName=MSISDN"
    }
  ]
}
```

4.1.2. 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

```
[
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringFormat": "ISO8601",
          "value": "2019-08-15T04:43:21"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringFormat": "ISO8601",
          "value": "2019-08-17T23:59:59"
        }
      }
    },
    "name": "Data3Days",
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "unitCode": "KB",
            "value": "0"
          },
          "type": "Allocated"
        },
        {
          "allowance": {
            "unitCode": "KB",
```

```

        "value": "0"
      },
      "type": "Remaining"
    },
    {
      "allowance": {
        "unitCode": "KB",
        "value": "0"
      },
      "type": "Used"
    }
  ]
},
"id": [
  {
    "schemeName": "offeringKey",
    "value": "609236"
  },
  {
    "schemeName": "offeringCode",
    "value": "D238"
  },
  {
    "schemeName": "freeUnitInstanceID",
    "value": "701000000000139129"
  },
  {
    "schemeName": "packageName",
    "value": "Data3Days"
  }
],
"categories": [
  {
    "listHierarchyId": "billingCycle",
    "value": "once-off"
  }
],
"type": "data",
"desc": "General Data once-off 3 days"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-15T04:43:17"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-17T23:59:59"
      }
    }
  },
  "name": "Data3Days",
  "details": {
    "balanceAllowance": [
      {
        "allowance": {
          "unitCode": "KB",
          "value": "0"
        },
        "type": "Allocated"
      },
      {
        "allowance": {
          "unitCode": "KB",
          "value": "0"
        },
        "type": "Remaining"
      }
    ]
  }
}

```

```

        "allowance": {
          "unitCode": "KB",
          "value": "0"
        },
        "type": "Used"
      }
    ],
    "id": [
      {
        "schemeName": "offeringKey",
        "value": "609236"
      },
      {
        "schemeName": "offeringCode",
        "value": "D238"
      },
      {
        "schemeName": "freeUnitInstanceID",
        "value": "701000000000139128"
      },
      {
        "schemeName": "packageName",
        "value": "Data3Days"
      }
    ],
    "categories": [
      {
        "listHierarchyId": "billingCycle",
        "value": "once-off"
      }
    ],
    "type": "data",
    "desc": "General Data once-off 3 days"
  },
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-08-15T04:43:16"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-08-17T23:59:59"
        }
      }
    },
    "name": "Data3Days",
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "unitCode": "KB",
            "value": "0"
          },
          "type": "Allocated"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "0"
          },
          "type": "Remaining"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "0"
          },
          "type": "Used"
        }
      ]
    }
  }
}

```

```

    }
  ],
  "id": [
    {
      "schemeName": "offeringKey",
      "value": "609236"
    },
    {
      "schemeName": "offeringCode",
      "value": "D238"
    },
    {
      "schemeName": "freeUnitInstanceID",
      "value": "701000000000139127"
    },
    {
      "schemeName": "packageName",
      "value": "Data3Days"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "billingCycle",
      "value": "once-off"
    }
  ],
  "type": "data",
  "desc": "General Data once-off 3 days"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-15T04:43:04"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-17T23:59:59"
      }
    }
  },
  "name": "Data3Days",
  "details": {
    "balanceAllowance": [
      {
        "allowance": {
          "unitCode": "KB",
          "value": "0"
        },
        "type": "Allocated"
      },
      {
        "allowance": {
          "unitCode": "KB",
          "value": "0"
        },
        "type": "Remaining"
      },
      {
        "allowance": {
          "unitCode": "KB",
          "value": "0"
        },
        "type": "Used"
      }
    ]
  },
  "id": [
    {

```

```

        "schemeName": "offeringKey",
        "value": "609236"
    },
    {
        "schemeName": "offeringCode",
        "value": "D238"
    },
    {
        "schemeName": "freeUnitInstanceID",
        "value": "701000000000139126"
    },
    {
        "schemeName": "packageName",
        "value": "Data3Days"
    }
],
"categories": [
    {
        "listHierarchyId": "billingCycle",
        "value": "once-off"
    }
],
"type": "data",
"desc": "General Data once-off 3 days"
},
{
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "dateStringformat": "ISO8601",
                "value": "2019-08-13T10:57:17"
            }
        },
        "toDate": {
            "dateString": {
                "dateStringformat": "ISO8601",
                "value": "2019-09-11T23:59:59"
            }
        }
    },
    "name": "CVMDData30Days",
    "details": {
        "balanceAllowance": [
            {
                "allowance": {
                    "unitCode": "KB",
                    "value": "350"
                },
                "type": "Allocated"
            },
            {
                "allowance": {
                    "unitCode": "KB",
                    "value": "350"
                },
                "type": "Remaining"
            },
            {
                "allowance": {
                    "unitCode": "KB",
                    "value": "0"
                },
                "type": "Used"
            }
        ]
    },
    "id": [
        {
            "schemeName": "offeringKey",
            "value": "609265"
        },
        {
            "schemeName": "offeringCode",

```

```

        "value": "D241"
      },
      {
        "schemeName": "freeUnitInstanceID",
        "value": "701000000000138680"
      },
      {
        "schemeName": "packageName",
        "value": "CVMDData30Days"
      }
    ],
    "categories": [
      {
        "listHierarchyId": "billingCycle",
        "value": "once-off"
      }
    ],
    "type": "data",
    "desc": "General Data once-off 30 days"
  },
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-08-13T10:32:18"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-09-11T23:59:59"
        }
      }
    },
    "name": "DataPromoMeg250",
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "unitCode": "KB",
            "value": "256000"
          },
          "type": "Allocated"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "256000"
          },
          "type": "Remaining"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "0"
          },
          "type": "Used"
        }
      ]
    },
    "id": [
      {
        "schemeName": "offeringKey",
        "value": "606672"
      },
      {
        "schemeName": "offeringCode",
        "value": "D040"
      },
      {
        "schemeName": "freeUnitInstanceID",
        "value": "701000000000138667"
      }
    ]
  }

```

```

    },
    {
      "schemeName": "packageName",
      "value": "DataPromoMeg250"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "billingCycle",
      "value": "once-off"
    }
  ],
  "type": "data",
  "desc": "Data 250 MB"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-15T00:00:00"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-15T23:59:59"
      }
    }
  },
  "name": "NightShiftPromo",
  "details": {
    "balanceAllowance": [
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "3600"
        },
        "type": "Allocated"
      },
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "3600"
        },
        "type": "Remaining"
      },
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "0"
        },
        "type": "Used"
      }
    ]
  },
  "id": [
    {
      "schemeName": "offeringKey",
      "value": "1446524"
    },
    {
      "schemeName": "offeringCode",
      "value": "V058"
    },
    {
      "schemeName": "freeUnitInstanceID",
      "value": "701000000000138868"
    },
    {
      "schemeName": "packageName",
      "value": "NightShiftPromo"
    }
  ]
}

```



```

    },
    "categories": [
      {
        "listHierarchyId": "billingCycle",
        "value": "every-day"
      }
    ],
    "type": "Voice",
    "desc": "Night shift 7 days promo"
  },
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-08-15T15:07:16"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-09-30T13:59:59"
        }
      }
    },
    "name": "BigBonus",
    "details": {
      "balanceAmount": [
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "50"
          },
          "type": "Remaining"
        },
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "205.01"
          },
          "type": "Total"
        }
      ]
    },
    "id": [
      {
        "schemeName": "packageName",
        "value": "Bigbonus"
      }
    ],
    "categories": [
      {
        "listHierarchyId": "Product",
        "value": "Airtime"
      }
    ],
    "type": "Airtime",
    "desc": "BigBonus"
  },
  {
    "name": "Recharge Airtime",
    "details": {
      "balanceAmount": [
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "50"
          },
          "type": "Remaining"
        },
        {
          "amount": {
            "currencyID": "ZAR",

```

```

        "value": "205.01"
      },
      "type": "Total"
    }
  ],
  "id": [
    {
      "schemeName": "packageName",
      "value": "MainAccount"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "Product",
      "value": "Airtime"
    }
  ],
  "type": "Airtime",
  "desc": "Recharge Airtime"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-15T15:07:55"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-09-30T13:59:59"
      }
    }
  },
  "name": "PPConnRecharge",
  "details": {
    "balanceAmount": [
      {
        "amount": {
          "currencyID": "ZAR",
          "value": "50"
        },
        "type": "Remaining"
      },
      {
        "amount": {
          "currencyID": "ZAR",
          "value": "205.01"
        },
        "type": "Total"
      }
    ]
  },
  "id": [
    {
      "schemeName": "packageName",
      "value": "PPConnRecharge"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "Product",
      "value": "Airtime"
    }
  ],
  "type": "Airtime",
  "desc": "PPConnRecharge"
},
{
  "validityPeriod": {
    "fromDate": {

```

```

        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-08-12T15:27:22"
        },
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2037-01-01T01:59:59"
        }
      }
    },
    "name": "AirtimeAdvance",
    "details": {
      "balanceAmount": [
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "0.01"
          },
          "type": "Remaining"
        },
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "205.01"
          },
          "type": "Total"
        }
      ]
    },
    "id": [
      {
        "schemeName": "packageName",
        "value": "AirtimeAdvance"
      }
    ],
    "categories": [
      {
        "listHierarchyId": "Product",
        "value": "Airtime"
      }
    ],
    "type": "Airtime",
    "desc": "AirtimeAdvance"
  },
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2019-08-12T12:40:23"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2037-01-01T01:59:59"
        }
      }
    },
    "name": "AirtimeAdvance",
    "details": {
      "balanceAmount": [
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "5"
          },
          "type": "Remaining"
        },
        {
          "amount": {

```

```

        "currencyID": "ZAR",
        "value": "205.01"
      },
      "type": "Total"
    }
  ],
  "id": [
    {
      "schemeName": "packageName",
      "value": "AirtimeAdvance"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "Product",
      "value": "Airtime"
    }
  ],
  "type": "Airtime",
  "desc": "AirtimeAdvance"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-08-15T15:08:33"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2019-09-30T13:59:59"
      }
    }
  },
  "name": "PrepaidPlanBonus",
  "details": {
    "balanceAmount": [
      {
        "amount": {
          "currencyID": "ZAR",
          "value": "50"
        },
        "type": "Remaining"
      },
      {
        "amount": {
          "currencyID": "ZAR",
          "value": "205.01"
        },
        "type": "Total"
      }
    ]
  },
  "id": [
    {
      "schemeName": "packageName",
      "value": "PrepaidPlanBonus"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "Product",
      "value": "Airtime"
    }
  ],
  "type": "Airtime",
  "desc": "PrepaidPlanBonus"
}
]

```

Query Cancellable Recurring bundles Sample Message

Request Message

```
{
  "queryOptions": {
    "filter": "",
    "pagination": {
      "count": 0,
      "limit": 100
    },
    "sorting": "-$.created"
  },
  "queries": [
    {
      "query": "$.serviceIdentifier.value=27608096179 & $.serviceIdentifier.schemeName=M
SISDN & $.categories[*].value=true & $.categories[*].listHierarchyId=cancellable"
    }
  ]
}
```

Response Message

```
[
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2020-06-23T11:51:32"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2020-06-29T23:59:59"
        }
      }
    },
    "name": "WklyRec60MB",
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "unitCode": "KB",
            "value": "61440"
          },
          "type": "Allocated"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "61440"
          },
          "type": "Remaining"
        }
      ]
    }
  }
]
```

```

    },
    {
      "allowance": {
        "unitCode": "KB",
        "value": "0"
      },
      "type": "Used"
    },
    {
      "allowance": {
        "unitCode": "KB",
        "value": "61440"
      },
      "type": "Total"
    }
  ]
},
"desc": [
  {
    "schemeName": "freeUnitInstanceID",
    "value": "701000000000786010"
  },
  {
    "schemeName": "purchaseSeq",
    "value": "900000019664008"
  },
  {
    "schemeName": "packageName",
    "value": "WklyRec60MB"
  },
  {
    "schemeName": "offeringKey",
    "value": "606531"
  },
  {
    "schemeName": "offeringCode",
    "value": "D003"
  }
],
"categories": [
  {
    "listHierarchyId": "cancelable",
    "value": "true"
  },
  {
    "listHierarchyId": "usage",
    "value": "unrestricted"
  },
  {
    "listHierarchyId": "billingCycle",
    "value": "recurring"
  }
],
"type": "data",
"desc": "D003",

```

```

    "status": "Inactive"
  },
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2020-06-23T11:49:30"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2020-07-22T23:59:59"
        }
      }
    },
    "name": "HIPPreCSMS100",
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "unitCode": "units",
            "value": "100"
          },
          "type": "Allocated"
        },
        {
          "allowance": {
            "unitCode": "units",
            "value": "100"
          },
          "type": "Remaining"
        },
        {
          "allowance": {
            "unitCode": "units",
            "value": "0"
          },
          "type": "Used"
        },
        {
          "allowance": {
            "unitCode": "units",
            "value": "100"
          },
          "type": "Total"
        }
      ]
    },
    "id": [
      {
        "schemeName": "freeUnitInstanceID",
        "value": "701000000000786008"
      }
    ]
  }
}

```

```

    {
      "schemeName": "purchaseSeq",
      "value": "900000019664006"
    },
    {
      "schemeName": "packageName",
      "value": "HIPPreSMS100"
    },
    {
      "schemeName": "offeringKey",
      "value": "1306372"
    },
    {
      "schemeName": "offeringCode",
      "value": "S004"
    }
  ],
  "categories": [
    {
      "listHierarchyId": "cancelable",
      "value": "true"
    },
    {
      "listHierarchyId": "billingCycle",
      "value": "recurring"
    }
  ],
  "type": "SMS",
  "desc": "S004",
  "status": "Active"
},
{
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2020-06-23T11:51:53"
      }
    },
    "toDate": {
      "dateString": {
        "dateStringformat": "ISO8601",
        "value": "2020-07-22T23:59:59"
      }
    }
  },
  "name": "RecPPMMS100",
  "details": {
    "balanceAllowance": [
      {
        "allowance": {
          "unitCode": "units",
          "value": "100"
        },
        "type": "Allocated"
      }
    ]
  }
}

```



```

    },
    {
      "allowance": {
        "unitCode": "units",
        "value": "100"
      },
      "type": "Remaining"
    },
    {
      "allowance": {
        "unitCode": "units",
        "value": "0"
      },
      "type": "Used"
    },
    {
      "allowance": {
        "unitCode": "units",
        "value": "100"
      },
      "type": "Total"
    }
  ]
},
"id": [
  {
    "schemeName": "freeUnitInstanceID",
    "value": "701000000000786011"
  },
  {
    "schemeName": "purchaseSeq",
    "value": "900000019664009"
  },
  {
    "schemeName": "packageName",
    "value": "RecPPMMS100"
  },
  {
    "schemeName": "offeringKey",
    "value": "1312920"
  },
  {
    "schemeName": "offeringCode",
    "value": "S520"
  }
],
"categories": [
  {
    "listHierarchyId": "cancelable",
    "value": "true"
  },
  {
    "listHierarchyId": "billingCycle",
    "value": "recurring"
  }
]

```

```

    },
    "type": "MMS",
    "desc": "S520",
    "status": "Inactive"
  },
  {
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2020-06-23T11:52:08"
        }
      },
      "toDate": {
        "dateString": {
          "dateStringformat": "ISO8601",
          "value": "2020-06-29T23:59:59"
        }
      }
    },
    "name": "NightRec1GB",
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "unitCode": "KB",
            "value": "1048576"
          },
          "type": "Allocated"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "1048576"
          },
          "type": "Remaining"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "0"
          },
          "type": "Used"
        },
        {
          "allowance": {
            "unitCode": "KB",
            "value": "1048576"
          },
          "type": "Total"
        }
      ]
    },
    "id": [
      {

```

```

        "schemeName": "freeUnitInstanceID",
        "value": "701000000000786012"
    },
    {
        "schemeName": "purchaseSeq",
        "value": "900000019664010"
    },
    {
        "schemeName": "packageName",
        "value": "NightRec1GB"
    },
    {
        "schemeName": "offeringKey",
        "value": "607935"
    },
    {
        "schemeName": "offeringCode",
        "value": "D133"
    }
],
"categories": [
    {
        "listHierarchyId": "cancelable",
        "value": "true"
    },
    {
        "listHierarchyId": "usage",
        "value": "restricted"
    },
    {
        "listHierarchyId": "billingCycle",
        "value": "recurring"
    }
],
"type": "data",
"desc": "D133",
"status": "Inactive"
},
{
    "validityPeriod": {
        "fromDate": {
            "dateString": {
                "dateStringformat": "ISO8601",
                "value": "2020-06-23T11:52:25"
            }
        },
        "toDate": {
            "dateString": {
                "dateStringformat": "ISO8601",
                "value": "2020-06-30T23:59:59"
            }
        }
    },
    "name": "OMVoiceRec3",
    "details": {

```

```

    "balanceAllowance": [
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "4000"
        },
        "type": "Allocated"
      },
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "4000"
        },
        "type": "Remaining"
      },
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "0"
        },
        "type": "Used"
      },
      {
        "allowance": {
          "unitCode": "seconds",
          "value": "4000"
        },
        "type": "Total"
      }
    ],
    "id": [
      {
        "schemeName": "freeUnitInstanceID",
        "value": "701000000000786014"
      },
      {
        "schemeName": "purchaseSeq",
        "value": "900000019664012"
      },
      {
        "schemeName": "packageName",
        "value": "OMVoiceRec3"
      },
      {
        "schemeName": "offeringKey",
        "value": "1261036"
      },
      {
        "schemeName": "offeringCode",
        "value": "R10S"
      }
    ],
    "categories": [
      {

```



```
        "listHierarchyId": "cancelable",
        "value": "true"
      },
      {
        "listHierarchyId": "billingCycle",
        "value": "recurring"
      }
    ],
    "type": "Voice",
    "desc": "R10S",
    "status": "Inactive"
  }
]
```

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&
    }
  ]
}
```

Commented [NYVSA1]: Filter Airtime only, Additional Requirement

Response Message

```
[
  {
    "name": "Recharge Airtime",
    "details": {
      "balanceAmount": [
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "15"
          },
          "type": "Remaining"
        },
        {
          "amount": {
            "currencyID": "ZAR",
            "value": "718.2"
          },
          "type": "Total"
        }
      ]
    },
    "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"
}
]

```

Recurring Bundles balances:

Request Message

```
{
  "queryOptions": {
    "filter": "$.categories[*].value=Recurring",
    "pagination": {
      "count": 0,
      "limit": 100
    },
    "sorting": "-$.createdDate"
  },
  "queries": [
    {
      "query": "$.serviceIdentifier.value=27829850005 & $.serviceIdentifier.schemeName=MSISDN"
    }
  ]
}
```

Response Message

```
[
  {
    "id": [
      {
        "value": "V059",
        "schemeName": "offeringCode"
      },
      {
        "value": "1446525",
        "schemeName": "offeringKey"
      },
      {
        "value": "NXTLVLNightShift",
        "schemeName": "packageName"
      }
    ],
    "name": "NXTLVLNightShift",
    "desc": "Next Level NightShift",
    "type": "Voice",
    "categories": [
      {
        "value": "recurring",
        "listHierarchyId": "billingCycle"
      }
    ],
    "validityPeriod": {
      "fromDate": {
        "dateString": {
          "value": "2019-03-15T09:59:14",
          "dateStringformat": "ISO8601"
        }
      }
    }
  },
]
```

```

    "toDate": {
      "dateString": {
        "value": "2019-03-22T05:00:00",
        "dateStringformat": "ISO8601"
      }
    },
    "details": {
      "balanceAllowance": [
        {
          "allowance": {
            "value": "90",
            "unitCode": "minutes"
          },
          "type": "Remaining"
        }
      ],
      "resetDate": {
        "value": "2019-03-19T05:00:00",
        "format": "ISO8601"
      }
    },
    {
      {
        "id": [
          {
            "value": "NC1",
            "schemeName": "offeringCode"
          },
          {
            "value": "30241",
            "schemeName": "offeringKey"
          },
          {
            "value": "SPNightOwl5GB",
            "schemeName": "packageName"
          }
        ],
        "name": "SPNightOwl5GB",
        "desc": "SP Incentive 5GB once-off",
        "type": "Data",
        "categories": [
          {
            "value": "recurring",
            "listHierarchyId": "billingCycle"
          }
        ],
        "validityPeriod": {
          "fromDate": {
            "dateString": {
              "value": "2019-03-15T09:24:08",
              "dateStringformat": "ISO8601"
            }
          },
          "toDate": {
            "dateString": {
              "value": "2019-04-01T00:00:00",

```



```

    "dateStringformat": "ISO8601"
  }
},
"details": {
  "balanceAllowance": [
    {
      "allowance": {
        "value": "3057.7421875",
        "unitCode": "MB"
      },
      "type": "Remaining"
    }
  ],
  "resetDate": {
    "value": "2019-04-01T00:00:00",
    "format": "ISO8601"
  }
},
{
  "id": [
    {
      "value": "S003",
      "schemeName": "offeringCode"
    },
    {
      "value": "1306371",
      "schemeName": "offeringKey"
    },
    {
      "value": "HIPRecSMS40",
      "schemeName": "packageName"
    }
  ],
  "name": "HIPRecSMS40",
  "desc": "HIPRecSMS40",
  "type": "SMS",
  "categories": [
    {
      "value": "recurring",
      "listHierarchyId": "billingCycle"
    }
  ],
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "value": "2019-03-15T10:09:20",
        "dateStringformat": "ISO8601"
      }
    },
    "toDate": {
      "dateString": {
        "value": "2019-04-14T00:00:00",
        "dateStringformat": "ISO8601"
      }
    }
  }
}

```

```

},
"details": {
  "balanceAllowance": [
    {
      "allowance": {
        "value": "256040"
      },
      "type": "Remaining"
    }
  ],
  "resetDate": {
    "value": "2019-04-14T00:00:00",
    "format": "ISO8601"
  }
},
{
  "id": [
    {
      "value": "BAD1",
      "schemeName": "offeringCode"
    },
    {
      "value": "526645",
      "schemeName": "offeringKey"
    },
    {
      "value": "SPVoice50Min",
      "schemeName": "packageName"
    }
  ],
  "name": "SPVoice50Min",
  "desc": "Monthly Recurring Bolt-on 50 Min Bundle",
  "type": "Voice",
  "categories": [
    {
      "value": "recurring",
      "listHierarchyId": "billingCycle"
    }
  ],
  "validityPeriod": {
    "fromDate": {
      "dateString": {
        "value": "2019-03-15T09:46:51",
        "dateStringformat": "ISO8601"
      }
    },
    "toDate": {
      "dateString": {
        "value": "2019-04-01T00:00:00",
        "dateStringformat": "ISO8601"
      }
    }
  }
},
"details": {
  "balanceAllowance": [
    {

```

```

        "allowance": {
            "value": "4294.1",
            "unitCode": "minutes"
        },
        "type": "Remaining"
    },
    "resetDate": {
        "value": "2019-04-01T00:00:00",
        "format": "ISO8601"
    }
}
]

```

RETRIES:

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

4.2. OUT OF BUNDLE USAGE:

When a balance query is made to CCS, CCS will return the out of bundle value field. As shown below:

```

{
  "id": [
    {
      "value": "Out-Off Bundle Usage",
      "schemeName": "packageName"
    }
  ],
  "name": "Out-Off Bundle Usage",
  "desc": "Out-Off Bundle Usage",
  "type": "Airtime",
  "categories": [
    {
      "value": "Airtime",
      "listHierarchyId": "Product"
    }
  ],
  "details": {
    "balanceAmount": [
      {
        "type": "Total",
        "amount": {
          "value": "-0.83",
          "currencyID": "ZAR"
        }
      }
    ]
  }
}
]

```

Airtime Mappings:

Engineering fusion currently maps the Airtime names that are returned by CCS to what is currently configured on OCS. The OCS airtime names is what should be displayed to the subscriber when performing a balance query.

OCS	CCS	MONETARY TYPE ID
MainAccount	C_VZA_PPS_MainAccount	10000
BigBonus	C_VZA_BigBonus	10012
PrepaidPlanBonus	C_VZA_PowerBonus	10113
TPMon14DR75	C_VZA_TalkingPoint	10011
SpendGetR2Bun	C_VZA_SpendandGet	10008
SpendGetR4Bun	C_VZA_SpendandGet	10008
SpendGetR8Bun	C_VZA_SpendandGet	10008
SpendGetR10Bun	C_VZA_SpendandGet	10008
SpendGetR12Bun	C_VZA_SpendandGet	10008
SpendGetR15Bun	C_VZA_SpendandGet	10008
SpendAndGetBundl	C_VZA_SpendandGet	10008
PPConnRecharge	C_VZA_BlueLabel	10004
BonAirtimeANAT	C_VZA_PromoAirtime	10005
BonAirtimeOnNet	C_VZA_PromoAirtime	10005
BonusRecharge1	C_VZA_PromoAirtime	10005
BonusRecharge2	C_VZA_PromoAirtime	10005
BonusRecharge3	C_VZA_PromoAirtime	10005
uChooseMonthly	C_VZA_Flexi Subscription	10001
AirtimeAdvance	C_VZA_AirtimeAdvance	10003

WS10AT	uChooseMonthly	C_VZA_Flexi Subscription
WO35AT	uChooseMonthly	C_VZA_Onbiller

Note that BigBonus and Legacy TopUp form a part of the recharge account on OCS. In future it will be:

VZA_BigBonus
VZA_LegacyTopUP



5. ERROR CODES

SEE ATTACHED DOCUMENTS.

6. APPENDIX

6.1. WSDL or Endpoint

<http://10.115.252.72:7003/ppd/serviceBalanceAPI/v2/serviceBalance/search>

6.2. Service Balance:



service_balance_01.zip

6.3. HIGH LEVEL DOCUMENT



G3.01 High Level
Design (HLD) for Perf

6.4. ERROR CODES.



OCS-SW
V500R006C50LG510



OCS-SW
V500R006C50LG510