Bill Avenue®

Bharat Bill Payment System
API Integration
Document

Version 1.4

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Document Control

Version History:

Date	Version	Description of change	Owner	Approved by
15-03-2017	1.0	Draft document - BBPS API Pilot functionality	Avenues	Hemangi Zope
17-03-2017	1.1	BBPS API Pilot functionality	Avenues	Hemangi Zope
18-05-2017	1.2	1. API Message Exchange - Parameter added 2. Bill Info Response - billAdhoc attribute value changed 3. Bill Fetch - Valid and Invalid response scenarios depicted. 4. Bill Payment - <amountTags> format changed to accept key - value pair. 5. Bill Payment - <paymentInfo> format changed to accept key - value pair.	Avenues	Hemangi Zope
08-06-2017	1.3	Biller Info Sample XML Request for	Avenues	Hemangi Zope
21-07-2017	1.4	Deposit Enquiry API request and response added.	Avenues	Hemangi Zope

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1.0 About the document

1.1 Purpose

This document will act as standard integration guide that would help Agent Institutions to integrate with Avenues Bill Payment System. The API serves as the bridge between Agent Institution (AI), Avenues as an Operating Unit (OU) and BBPS Central Unit (CU).

1.2 Scope

The scope of this document primarily encompasses the BBPS functionalities during the Pilot phase. However, it will undergo iterations over time in order to cater to the system requirements of BBPS envisaged for future enhancements in a post-Pilot scenario. The following sections cover the various considerations to be factored in preparing the application. Agent / Agent Institutions need to update their API's, as and when the changes are being delegated by the BBPS.

2.0 System Requirements

2.1 Network

The participating Agent Institution is recommended to process the API's over secure HTTPS protocol. This would help secure the packages in transmission. The API's are configured on TLS v1.2 and accepts request only in this format.

2.2 Application

The application connects with BBPS and in return the responses are delegated back to the Agent Institutions. As per BBPS suggestion the time out for API's has to be set at minimum of 300 seconds. To account for marginal difference, a tolerance of +/- 15 seconds has been provisioned. To secure the API communication the messages are set to be AES encrypted and encryption key will be provided to Agent Institutions once successfully on-boarded with Avenues.

3.0 API Message Exchange

All API's accept POST parameters, which are sent over HTTPS. To ensure data authenticity and prevent any kind of tampering, we accept data and send data in encrypted format. The encryption key is Agent Institution specific and each Agent Institution is requested to use the given set of access code and working key for API communication.

Agent Institution's needs to develop APIs in the suggested format and then post the following parameters:

1. accessCode (provided by Avenues)

2. requestId (Alphanumeric 35 characters Unique Id for each request)

3. encRequest (encrypted XML request)

4. ver (fixed version value 1.0)

5. instituteId (provided by Avenues)

encRequest=b86a68c3c2df5bda678f12f547d4e533bfa286cf6679ffb102e75580dd8f9abd2b4e68a9
305942ec074c59813623ec6e10a95d5c61bd33112c76cf3c3f4024ce8e239f5b5054b1372ad6fec624
507c224f3333bfbc43fd6743caa6279d48c81c091ca11eef8419bdbdeaa7995f0123982824bca6f138
2443f8193e4f270091dfb1f9d189d50911af921175f971338155573359a86f377dbb2af0768c8d9cfba
76bd9fdd2b5f3fcb8c61d013829684150707eaa7bb16fb8ff37946ff942c23a91ca9b41992dc75cba90
1f8799679d97439f7a9024a3c6ccaf93b2a7b47f325f1b0a3d0d4cd7a1e936ae20133541184b4f8135
47a2fd2f5c82291178d6e700b9c07c1ed44da53a4233fab6f9e3d3e980626e5c929fb9b7a836d10c71
e8969ecfef0b22c3be3acee46dd2d34d37f2a4de5f183abdf8a0e183cf18a48a8494588b031d19d588
1324c411308ee5738a3312b1

NOTE:
Any amount mentioned in the API request / response are in **paise** . So Agent Institutions are requested to pass the converted values accordingly.

4.0 Integration API's

4.1 Biller Info API

The API fetches information of Biller's that are registered under Bharat Bill Payment System. Agent Institutions are advised to design their front-end channels accordingly. Some key
information that are the part of response message are as follows :

1. Biller ID (Unique code of biller e.g. CCAV00000MAH01)

2. Biller category (e.g. Electricity, Mobile Postpaid, etc)

3. Biller name (e.g. Reliance Energy, Idea, etc)

4. Biller coverage (e.g. Mumbai, Delhi, etc)

5. Fetch requirement (e.g. MANDATORY / NOT_SUPPORTED)

6. Biller input parameters and validations (biller specific)

7. Biller accepts ad-hoc (T / F)

8. Payment amount exactness (EXACT, EXACT_UP, etc)

9. Amount options available

10. Amount combination accepted by the biller

Further to these parameters the request can either be sent in XML post encryption.

BILLER INFO XML SAMPLE REQUEST (SPECIFIC DATA)

```
<?xml version="1.0" encoding="UTF-8"?>
<billerInfoRequest>
  <billerId>CCAV00000MAH01</billerI
              d>
</billerInfoRequest>
```

BILLER INFO XML SAMPLE REQUEST (COMPLETE BILLER LIST)

```
<?xml version="1.0" encoding="UTF-8"?>
<billerInfoRequest></billerInfoRequest>
```

BILLER INFO XML SAMPLE RESPONSE

```xml
<?xml version="1.0" encoding="UTF-8"?>
<billerInfoResponse
            >
  <responseCode>000</responseCo
                de>
  <biller>
    <billerId>CCAV00000MAH01</billerI
                    d>
    <billerName>OTME</billerName>
    <billerCategory>Mobile</billerCategory>
    <billerAdhoc>true</billerAdhoc>
    <billerCoverage>IND</billerCoverage>
    <billerFetchRequiremet>MANDATORY</billerFetchRequiremet>
    <billerPaymentExactness>Exact</billerPaymentExactness>
    <billerInputParams>
      <paramInfo
            >
        <paramName>a</paramName>
        <dataType>NUMERIC</dataType>
        <isOptional>false</isOptional>
      </paramInfo>
      <paramInfo
            >
        <paramName>a b</paramName>
        <dataType>NUMERIC</dataType>
        <isOptional>false</isOptional>
      </paramInfo>
      <paramInfo
            >
        <paramName>a b c</paramName>
        <dataType>NUMERIC</dataType>
        <isOptional>false</isOptional>
      </paramInfo>
      <paramInfo
            >
        <paramName>a b c d</paramName>
        <dataType>NUMERIC</dataType>
        <isOptional>false</isOptional>
      </paramInfo>
      <paramInfo
            >
        <paramName>a b c d e</paramName>
        <dataType>NUMERIC</dataType>
        <isOptional>false</isOptional>
      </paramInfo>
    </billerInputParams>
    <billerAmountOptions>BASE_BILL_AMOUNT,Fixed Charges,,|Additional
Charges,BASE_BILL_AMOUNT,,|Late Payment Fee,BASE_BILL_AMOUNT,Fixed
Charges,|Additional Charges,Late Payment Fee,BASE_BILL_AMOUNT,|Additional
Charges,Late Payment Fee,BASE_BILL_AMOUNT,Fixed
Charges|BASE_BILL_AMOUNT,,,|Late Payment Fee,,,|Fixed Charges,,,|Additional
```

```
Charges,,,|Late Payment Fee,BASE_BILL_AMOUNT,,</billerAmountOptions>
    <billerPaymentModes>Internet Banking, Debit Card, Credit Card, Prepaid Card, IMPS,
Cash, UPI, Wallet, NEFT</billerPaymentModes>
  </biller>
</billerInfoResponse
          >
```

4.2 Bill Fetch API

This API fetches the bill from the Central Unit (CU) of BBPS via Avenues application. Following key information is required to fetch the bill and this should be in-sync with the Biller Info API details :

1. Agent ID assigned by Avenues

2. Agent device info like IP and MAC
   Note :- initChannel can be INT or
   AGT

3. Customer information (mobile number is mandatory)

4. Biller ID as received from Biller Info

5. Biller input parameters

Biller input parameters should be validated as per the information received from the Biller
Info call and value selected by the end user.

BILL FETCH SAMPLE XML REQUEST

```xml
<?xml version="1.0" encoding="UTF-8"?>
<billFetchRequest
        >
  <agentId>CC01CC01513515340681</agentId>
  <agentDeviceInfo>
    <ip>192.168.2.73</ip>
    <initChannel>AGT</initChannel>
    <mac>01-23-45-67-89-ab</mac>
  </agentDeviceInfo>
  <customerInfo>
    <customerMobile>9898990001</customerMobile>
    <customerEmail />
    <customerAdhaar />
    <customerPan />
  </customerInfo>
  <billerId>NA7420055XSZ41</billerId>
  <inputParams>
    <input>
      <paramName>Customer Reference Number</paramName>
      <paramValue>54543401</paramValue>
    </input>
    <input>
      <paramName>Customer Mobile Number</paramName>
      <paramValue>9699623113</paramValue>
    </input>
  </inputParams>
</billFetchRequest>
```

>

BILL FETCH SAMPLE XML RESPONSE

```xml
<?xml version="1.0" encoding="UTF-8"?>
<billFetchResponse>
  <responseCode>000</responseCode>
  <inputParams>
    <input>
      <paramName>Customer Reference Number</paramName>
      <paramValue>54543401</paramValue>
    </input>
    <input>
      <paramName>Customer Mobile Number</paramName>
      <paramValue>9699623113</paramValue>
    </input>
  </inputParams>
  <billerResponse>
    <amountOptions>
      <option>
        <amountName>Late Payment Fee</amountName>
        <amountValue>4000</amountValue>
      </option>
      <option>
        <amountName>Fixed Charges</amountName>
        <amountValue>5000</amountValue>
      </option>
      <option>
        <amountName>Additional Charges</amountName>
        <amountValue>6000</amountValue>
      </option>
      <option>
        <amountName>Adjustments</amountName>
        <amountValue>8000</amountValue>
      </option>
    </amountOptions>
    <billAmount>10000</billAmount>
    <billDate>2016-06-01</billDate>
    <billNumber>12345</billNumber>
    <billPeriod>jun</billPeriod>
    <customerName>BBPS</customerName>
    <dueDate>2016-06-30</dueDate>
  </billerResponse>
  <additionalInfo>
    <info>
      <infoName>Service Provider Name</infoName>
```

```
    <infoValue>Airtel</infoValue>
  </info>
  <info>
    <infoName>Location/Circle</infoName>
```

```xml
      <infoValue>AndhraPradesh</infoValue>
    </info>
  </additionalInfo>
</billFetchResponse>
```

BILL FETCH SAMPLE XML INVALID RESPONE

(Note :- If invalid mobile number is entered in bill fetch request)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<billFetchResponse>
  <responseCode>001</responseCo
               de>
  <errorInfo>
    <error>
      <errorCode>E002</errorCod
                 e>
      <errorMessage>Mobile number invalid</errorMessage>
    </error>
  </errorInfo>
</billFetchResponse>
```

4.3 Bill Payment API

This API is called post processing of payment and all mandatory information should be passed in this call. Based on the successful response of this API a receipt has to be generated as per the BBPS guidelines. In event of a failure, end user should be updated so that he/she can retry. Following parameters play the key role in this API call :

1. Customer details (Mobile number mandatory)

2. Agent ID

3. Agent device information (IP and MAC)

4. Biller ID

5. Biller input parameters

6. Payment method (mode, quickpay)

7. Payment information

8. Amount information (based on user selection)

9. Biller response (as received in bill fetch response)

10. Additional info (as received in bill fetch response)

Note :-

1. If billerAdhoc value is True, Agent Institution has to generate new Request ID
2. If billerAdhoc value is False and Bill Fetch value is mandatory, Agent Institution will send same Request ID as sent in Bill Fetch Request.
3. If this is forward type request (<txnRespType>) then the transaction is treated as successful and
in case of reversal type the amount shall be refunded back to the customer.

BILL PAYMENT SAMPLE XML REQUEST

```xml
<?xml version="1.0" encoding="UTF-8"?>
<billPaymentRequest>
  <agentId>CC01CC01513515340681</agentId>
  <billerAdhoc>false</billerAdhoc>
  <agentDeviceInfo>
    <ip>192.168.2.73</ip>
    <initChannel>AGT</initChannel>
    <mac>01-23-45-67-89-ab</mac>
  </agentDeviceInfo>
  <customerInfo>
    <customerMobile>9898990002</customerMobile>
    <customerEmail />
    <customerAdhaar />
    <customerPan />
  </customerInfo>
  <billerId>NA7420055XSZ41</billerId>
  <inputParams>
    <input>
      <paramName>Customer Reference Number</paramName>
      <paramValue>54543401</paramValue>
    </input>
    <input>
      <paramName>Customer Mobile Number</paramName>
      <paramValue>9699623113</paramValue>
    </input>
  </inputParams>
  <billerResponse>
    <billAmount>10000</billAmount>
    <billDate>2015-06-14</billDate>
    <billNumber>12345</billNumber>
    <billPeriod>jun</billPeriod>
    <customerName>BBPS</customerName>
    <dueDate>2016-06-30</dueDate>
    <amountOptions>
      <option>
        <amountName>Late Payment Fee</amountName>
        <amountValue>4000</amountValue>
```

```xml
      </option>
      <option>
        <amountName>Fixed Charges</amountName>
        <amountValue>5000</amountValue>
      </option>
      <option>
        <amountName>Additional Charges</amountName>
        <amountValue>6000</amountValue>
      </option>
      <option>
        <amountName>Adjustments</amountName>
        <amountValue>8000</amountValue>
      </option>
    </amountOptions>
  </billerResponse
          >
  <additionalInfo
          >
    <info>
      <infoName>Service Provider Name</infoName>
      <infoValue>Airtel</infoValue>
    </info>
    <info>
      <infoName>Location/Circle</infoName>
      <infoValue>AndhraPradesh</infoValue>
    </info>
  </additionalInfo>
  <amountInfo>
    <amount>16000</amount>
    <currency>356</currency>
    <custConvFee>0</custConvFee>
    <amountTags>
      <amountTag>Additional Charges</amountTag>
      <value>6000</value>
    </amountTags>
  </amountInfo>
  <paymentMethod>
    <paymentMode>Cash</paymentMode>
    <quickPay>N</quickPay>
    <splitPay>N</splitPay>
  </paymentMethod>
  <paymentInfo
          >
    <info>
      <infoName>Remarks</infoName>
      <infoValue>Received</infoValue>
    </info>
  </paymentInfo>
</billPaymentRequest
          >
```

BILL PAYMENT SAMPLE XML RESPONSE

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ExtBillPayResponse>
  <responseCode>000</responseCode>
  <responseReason>Successful</responseReason>
  <txnRefId>CC01ZK173938</txnRefId>
  <txnRespType>FORWARD TYPE RESPONSE</txnRespType>
  <inputParams>
    <input>
      <paramName>Customer Reference Number</paramName>
      <paramValue>54543401</paramValue>
    </input>
    <input>
      <paramName>Customer Mobile Number</paramName>
      <paramValue>9699623113</paramValue>
    </input>
  </inputParams>
  <CustConvFee>0</CustConvFee>
  <RespAmount>16000</RespAmount>
  <RespBillDate>2016-06-01</RespBillDate>
  <RespBillNumber>12345</RespBillNumber>
  <RespBillPeriod>jun</RespBillPeriod>
  <RespCustomerName>BBPS</RespCustomerName>
  <RespDueDate>2016-06-30</RespDueDate>
</ExtBillPayResponse>
```

BILL PAYMENT SAMPLE XML INVALID RESPONSE

(Note :- If invalid mobile number is entered in bill pay request)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ExtBillPayResponse>
  <responseCode>001</responseCode>
  <errorInfo>
    <error>
      <errorCode>E031</errorCode>
      <errorMessage>Mobile number invalid</errorMessage>
    </error>
  </errorInfo>
</ExtBillPayResponse>
```

4.4 Transaction Status API

This API can be utilized to fetch status information of any transaction based on its txnRefId or customer mobile number. Following fields are required :

1. Tracking type (either TRANS_REF_ID or MOBILE_NO)

2. Value of the above selected flag type

TRANSACTION STATUS SAMPLE XML REQUEST

```
<?xml version="1.0" encoding="UTF-8"?>
<transactionStatusReq>
  <trackType>TRANS_REF_ID</trackType>
  <trackValue>OU21DVQ5CALO</trackValue>
</transactionStatusRe
```

q> OR

TRANSACTION STATUS SAMPLE XML REQUEST

```
<?xml version="1.0" encoding="UTF-8"?>
<transactionStatusReq>
  <trackType>MOBILE_NO</trackType>
  <trackValue>9876543210</trackValue>
  <fromDate>2016-09-02</fromDate>
  <toDate>2016-09-06</toDate>
</transactionStatusReq>
```

TRANSACTION STATUS SAMPLE XML RESPONSE

```
<?xml version="1.0" encoding="UTF-8"?>
<transactionStatusResp>
  <responseCode>000</responseCode>
  <responseReason>SUCCESS</responseReason>
  <txnList>
    <transaction>
      <agentId>YS01AB21000001123458</agentId>
      <amount>100</amount>
      <billerId>TSTU00000NAT07</billerId>
      <txnDate>2016-10-17T18:06:40.554+05:30</txnDate>
      <txnReferenceId>ID0100080018</txnReferenceId>
      <txnStatus>SUCCESS</txnStatus>
    </transaction>
  </txnList>
```

</transactionStatusResp>

4.5 Complaint Registration/Tracking API

This API helps the Agent Institutions to register any customer complaint and to check the status of any previously registered complaint. Following fields are required to register a complaint :

1. Complaint type (either be Transaction or Service)

2. Participation type is required when complaint type is Service (e.g. AGENT)

3. Agent Id is required when complaint type is Service.

4. Transaction reference id is required when complaint type is Transaction

5. Biller Id is required when the Service request is against biller.

6. Complaint description is required for each type.

7. Service complaint reason are to be provided under servReason.

8. Complaint disposition is required for Transaction based complaint.

For **Complaint Tracking,** Agent Institutions can send the request ,with the complaint type as either Transaction or Service and complaint id provided by the user.

COMPLAINT REGISTRATION SAMPLE XML REQUEST

```
<?xml version="1.0" encoding="UTF-8"?>
<complaintRegistrationReq>
  <complaintType>Service</complaintType>
  <participationType>AGENT</participationType>
  <agentId>CC01CC31000001123458</agentId>
  <txnRefId />
  <billerId />
  <complaintDesc>Complaint initiated through API</complaintDesc>
  <servReason>Agent overcharging</servReason>
  <complaintDisposition />
</complaintRegistrationReq>
```

COMPLAINT REGISTRATION SAMPLE XML RESPONSE

```
<?xml version="1.0" encoding="UTF-8"?>
<complaintRegistrationResp>
  <complaintAssigned>CC AVENUE NON BANK</complaintAssigned>
  <complaintId>KK1483101989391</complaintId>
  <respCode>000</respCode>
  <respReason>SUCCESS</respReason>
</complaintRegistrationResp>
```

COMPLAINT TRACKING SAMPLE XML REQUEST

```
<?xml version="1.0" encoding="UTF-8"?>
<complaintTrackingReq>
  <complaintType>Transaction</complaintType>
  <complaintId>KK1483101989391</complaintId>
</complaintTrackingReq>
```

COMPLAINT TRACKING SAMPLE XML RESPONSE

```
<?xml version="1.0" encoding="UTF-8"?>
<complaintTrackingResp>
  <complaintAssigned>CC AVENUE NON BANK</complaintAssigned>
  <complaintId>KK1483101989391</complaintId>
  <complaintStatus>ASSIGNED</complaintStatus>
  <respCode>000</respCode>
  <respReason>SUCCESS</respReason>
</complaintTrackingResp>
```

4.6 Deposit Enquiry API

This API can be utilized to fetch the information of the deposits made for a particular agent.

    1. From Date

    2. To Date

    3. Transaction Type (either Debit (DR) or Credit (CR))

    4. Agent
      ID

DEPOSIT ENQUIRY XML REQUEST

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<depositDetailsRequest>
  <fromDate>2017-07-10</fromDate>
  <toDate>2017-07-15</toDate>
  <transType>DR</transType>
  <agents>
  <agentId>OU21AB11AGT000008032</agentId>
  <agentId>OU21AB11AGT000008034</agentId>
  <agentId>OU21AB11AGT000008036</agentId>
  </agents>
</depositDetailsRequest>
```

DEPOSIT ENQUIRY XML RESPONSE

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DepositEnquiryResponse>
  <responseCode>000</responseCode>
  <instituteId>OU21</instituteId>
  <currentBalance>252000.00</currentBalance>
  <currency>INR</currency>
  <transaction>
  <entry>
  <agentId>OU21AB11AGT000008032</agentId>
  <transactionId>OU212K110400</transactionId>
  <requestId>REF001TRANS0001DT11042017SR00012001</requestId>
  <amount>1160.00</amount>
  <transType>DR</transType>
  <datetime>2017-04-12 12:35:30</datetime>
  </entry>
  <entry>
```

```
<agentId>OU21AB11AGT000008034</agentId>
<transactionId>OU212K557801</transactionId>
<requestId>REF001TRANS0001DT11042017SR00095421</requestId>
<amount>1000.00</amount>
<transType>DR</transType>
<datetime>2017-04-11 12:35:30</datetime>
</entry>
</transaction>
</DepositEnquiryResponse>
```

NEGATIVE DEPOSIT ENQUIRY XML RESPONSE

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DepositEnquiryResponse>
<responseCode>200</responseCode>
<errorInfo>
<error>
<errorCode>AE001</errorCode>
<errorMessage>Processing error - Inavlid Data.</errorMessage>
</error>
</errorInfo>
</DepositEnquiryResponse>
```