



bKash PayBill Integration Interface

Partner Integration Guide

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Audience: Billing Partner

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1. Introduction

1.1 Preface

The bKash Pay Bill system is a customized implementation in context of local market demands and business operation needs. The Platform can leverage integrations with various trusted billing partner systems through the defined interfaces to implement bill payment services like electricity bill, Gas bill water bill etc.

1.2 Purpose of Document

The purpose of this document is to enable partners to directly integrate Partner systems with bKash Core System to develop client management and/or transaction services functions as per defined scope of engagement.

This document describes the interface for trusted partner systems covering communication protocols, security requirements, call flows and functions to perform transactions, actions, business operations and queries.

1.3 Audience

The intended audiences of this document are:

- Solution Architect
- System Engineer
- Application Developer
- Integration Tester

2. Preconditions

2.1 Environment Setup

2.1.1 Integration (SIT)

For integration or API probe testing, all access to APIs will be provided on the bKash MFI staging(SIT) system. Partners must successfully pass SIT on the integration setup before proceeding to technical and business UAT.

2.1.2 Staging (UAT)

For acceptance testing, all access to APIs will be provided on the bKash MFI UAT system. Test partner accounts will be setup for API implementation and testing. Partners must successfully pass Technical and Business UAT on the UAT setup before proceeding to production.

2.1.3 Production (Live)

Once all API validations are through and UAT is successful, partners will be on-boarded on the production setup. Production account details will be shared with the partner for Go-Live.

Note: Partner will share the information as per integration scope for each setup.

2.2 Connectivity Establishment

bKash pay bill system is hosted at bKash on premises data centre. Partners must establish connectivity to the bKash datacentre over a secure VPN tunnel. The secure VPN will be established to both Primary and DR setups at partner as applicable.

All API interfaces between the bKash pay bill system and integrating partner will be over HTTPS.

All partners will integrate into the bKash pay bill system via Site-to-Site VPN connectivity.

2.2.1 IPSEC VPN Tunnel Integration

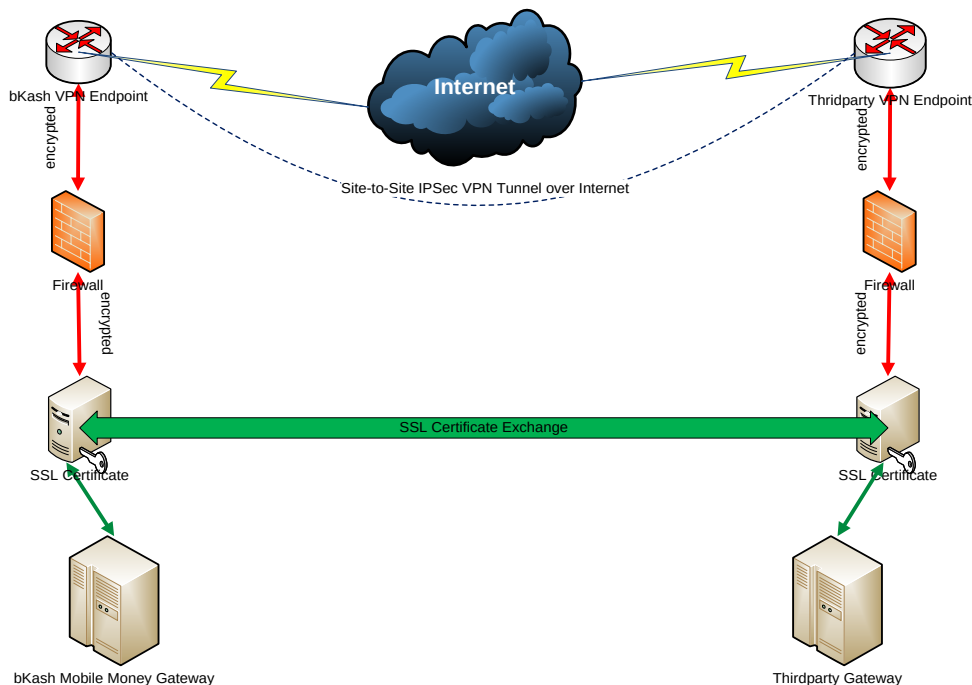


Figure 1: Site to Site IPSEC VPN Tunnel over Internet

Steps involved:

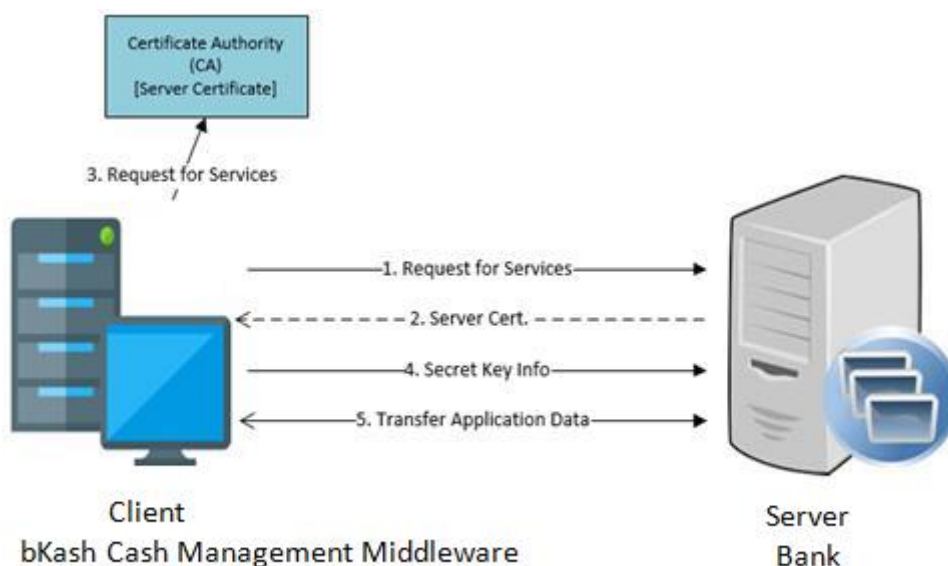
- bKash to circulate “VPN parameter form”
- Third-party shall share IP and other necessary information in the circulated form
- bKash to configure based on provided information by Third-party
- bKash to share Gateway IP, Tunnel IP and other necessary access information.
- System integration testing to be conducted to confirm connectivity establishment

2.2.2 SSL Certification Procedure

The SSL digital certificate will be used for peer-side validity authentication- both mutual & one-way authentication. Third-party will need a SSL certificate (CA Signed) to be able to access bKash Mobile Money Gateway.

Below is the high-level description of the steps involved in establishment of connection and transfer of data between a client and server, for both one way SSL and mutual SSL authentication.

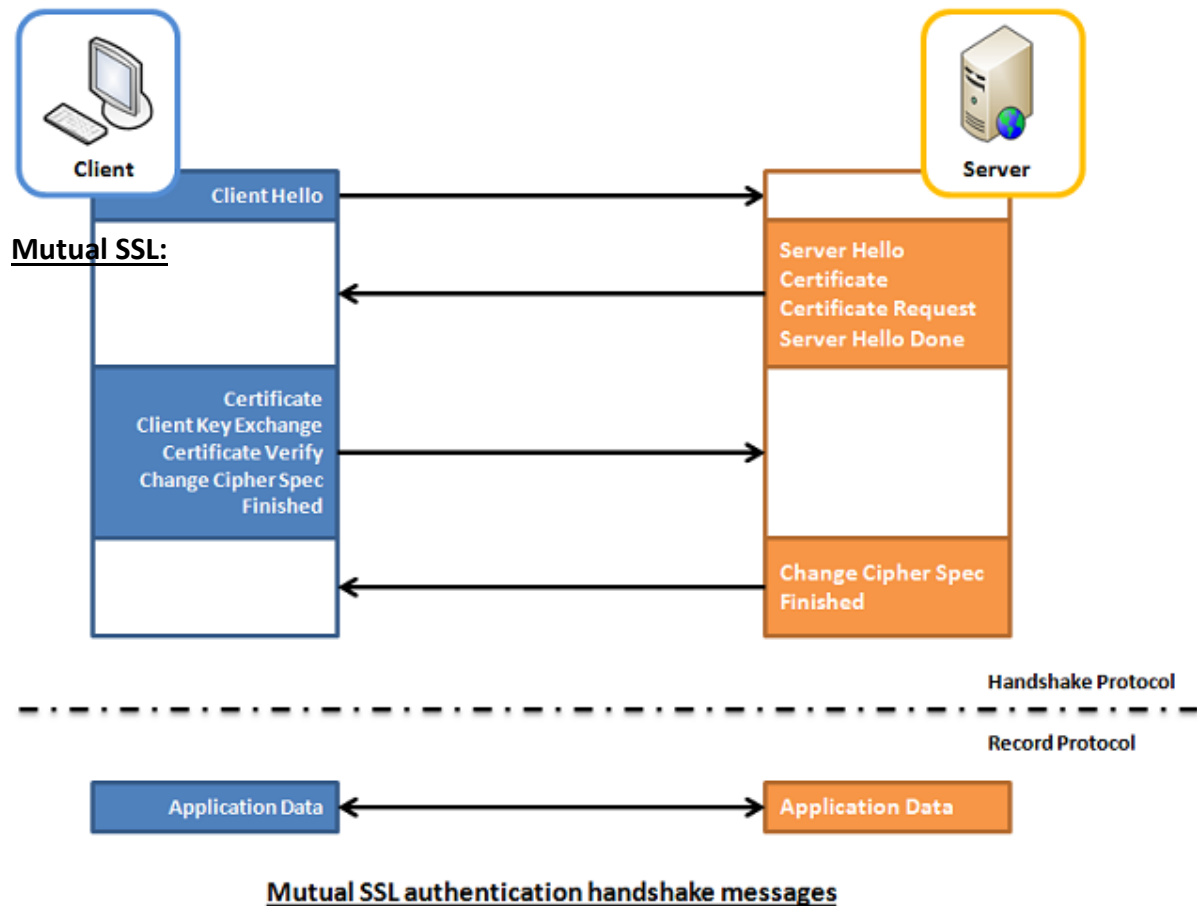
One-way SSL



One way SSL authentication handshake messages

Call flow:

1. Client requests for service from the server on HTTPS protocol. This initiates SSL/TLS handshake process.
2. Server returns its public certificate to the client along with server hello message.
3. Client validates/verifies the received certificate. Client verifies the certificate through certification authority (CA) for CA signed certificates.
4. SSL/TLS client sends the random byte string that enables both the client and the server to compute the secret key to be used for encrypting subsequent message data. The random byte string itself is encrypted with the server's public key.
5. After agreeing on this secret key, client and server communicate further for actual data transfer by encrypting/decrypting data using this key.

**Call flow:**

1. Client sends ClientHello message proposing SSL options.
2. Server responds with ServerHello message selecting the SSL options.
3. Server sends Certificate message, which contains the server's certificate.
4. Server requests client's certificate in CertificateRequest message, so that the connection can be mutually authenticated.
5. Server concludes its part of the negotiation with ServerHelloDone message.
6. Client responds with Certificate message, which contains the client's certificate.
7. Client sends sessionkey information (encrypted with server's public key) in ClientKeyExchangemessage.
8. Client sends a CertificateVerify message to let the server know it owns the sent certificate.
9. Client sends ChangeCipherSpec message to activate the negotiated options for all future messages it will send.
10. Client sends Finished message to let the server check the newly activated options.
11. Server sends ChangeCipherSpec message to activate the negotiated options for all future messages it will send.
12. Server sends Finished message to let the client check the newly activated options.

3. Integration Overview

3.1 System & User overview

Integrating System/Actor	Description
bKash	bKash customized implementation to request pay bill system for various services like CheckBill and PayBill
Partner Billing system	Partner system will implements bKash MFI API for provide services like CheckBill and PayBill

3.2 API Overview

API enables bKash system to integrate with Partner MFI system.

- All APIs are invoked based on the SOAP protocol over HTTPs.
- Message format : XML
- The entire API supports synchronous mode of API call.

The API defines:

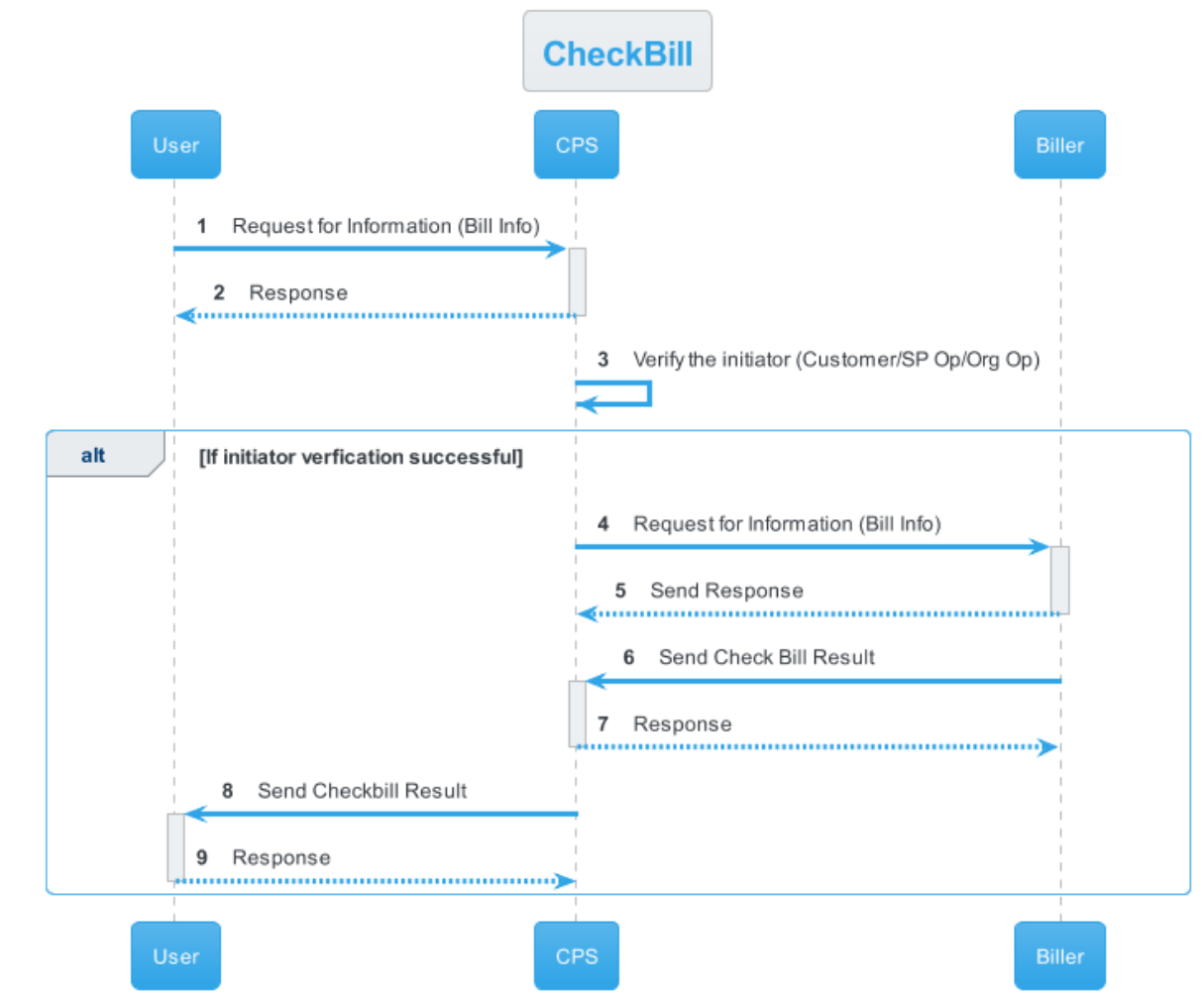
- The message transfer sequence between a Partner MFI system and bKash system.
- A set of API interfaces are available for initiating business operations or transactions between a Partner system and bKash system.

3.3 Call Flow

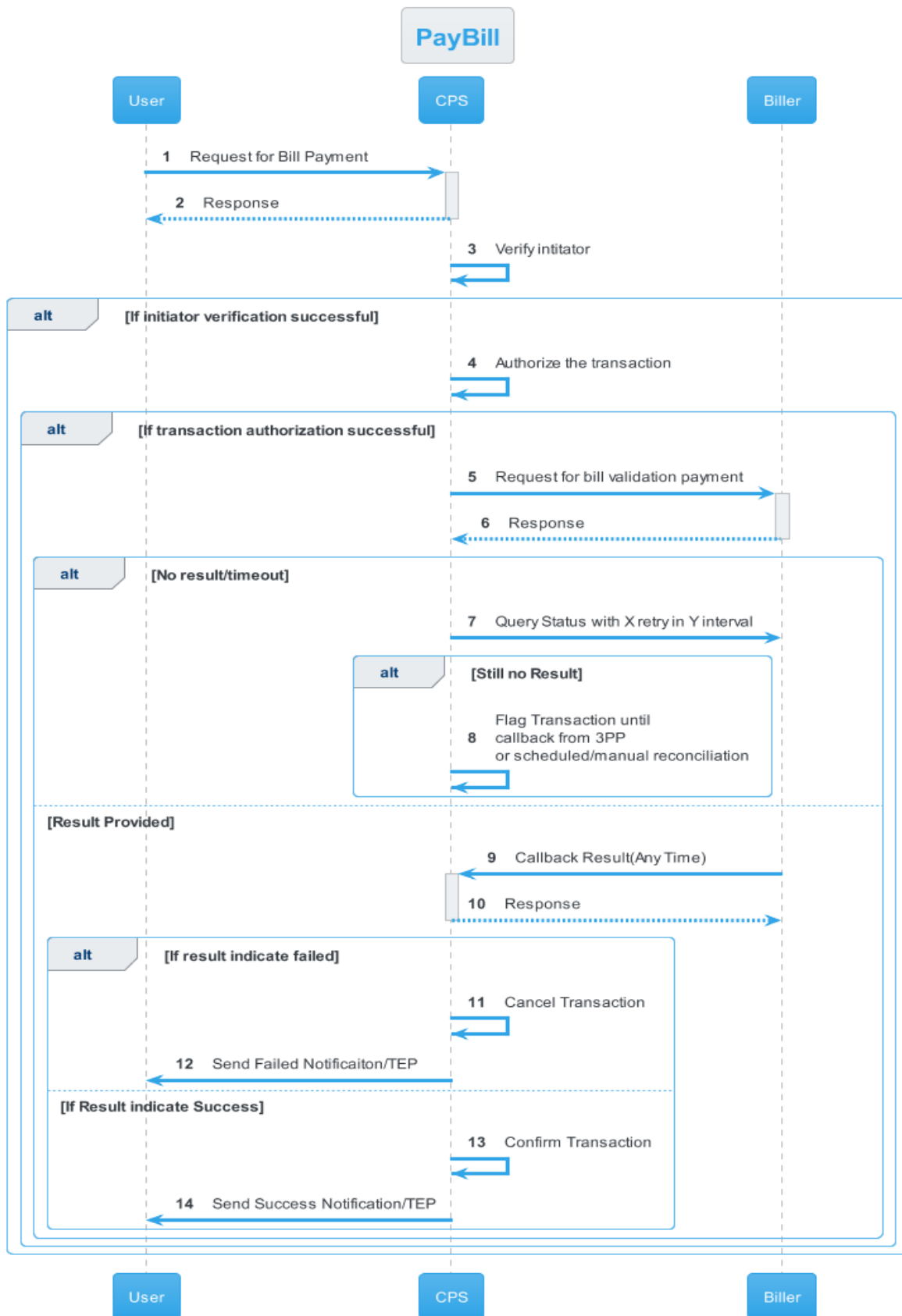
Call service flow for below function has been depicted below:

- CheckBill
- PayBill

CheckBill:



PayBill:



4. Authentication Management & Security Policy

Upon completion of necessary due diligence and approval process, certain configurations are required to be applied for bKash Technology & Partner team based on predefined integration scope.

Note: Data Security measure should be adopted at the Partner end during in use & store the API request credential & sensitive information.

4.1 Digital Certificate Authentication

Item	Description
SSL Authentication	- Supported SSL versions: TLS 1.2 & Onwards. - One way or Mutual Authentication - Public Key Cryptography Standards (PKCS): PKCS#12

4.2 Authentication:

For API calls identity will be authenticated by the use of user and RSA public key encrypted shared secret, which will ensure the request has been generated by the original source.

5. Interface Overview

This section gives a general overview of API URLs and Message formats & specifications.

All interfaces are invoked based on the **XML format** over **HTTPS**.

5.1 API URL

MFI partner will publish single & multiple end point for different interface, where bKash will send the API Request.

Each Partner needs to provide a single or multiple API Web Service endpoints to receive the result message send by bKash MFI system.

The following is an example for the endpoint:

https://<FQDN>:<PORT>/<FULL_PATH/CONTEXT_ROOT>

Note: Partner provided FQDN should be based on the single floating IP. bKash will not consider multiple IPs in terms of high availability or disaster recovery at partner side.

5.2 Data Element Definition

5.2.1 Check Bill :

Request Parameter Specification

Common field specification				
Command ID	CheckBillCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
LoginID	String	Mandatory	Indicates the login identifier.	bKash
Password	String	Mandatory	Indicates the password associated to the login identifier.	K38MO3
Timestamp	String	Mandatory	The time when the message is sent to target system.	20150901185701
ConversationID	String	Mandatory	It is used to identify a unique transaction or business operation conversation inside cps and generated by cps.	5043
InitiatorID	String	Optional	Initiating Customer MSIDN/Organization ShortCode	01717722282
InitiatorMSISDN	String	Optional	Initiating Customer MSIDN/Organization Till	01753700700
RequesterMSISDN	String	Optional	Incase of assisted payment, original MSISDN of user used for notification	01717722282
ChannelCode	Number	Mandatory	Indicate the channelcode of the initiator.	00- Customer USSD 01- Merchant USSD 02- Agent USSD 03- Agent App 10- Customer APP 11- Customer Web Portal 12- Branch Officer APP
ParentID	String	Optional	If parent exists, then shortcode of parent	223322
BusinessShortCode	String	Mandatory	Indicates the organization short code of the Bill Issuer or Merchant in the CPS.	2001
BillRefNumber	String	Mandatory	Indicates the reference number of bill, which is from bill issuer.	TX1001
SubID	String	Optional	Additional Account Information	SUB_TX1001
BillMonth	String	Optional	Indicates the billing due date of the customer. If end month exist this will be start month	22018

Common field specification				
Command ID	CheckBillCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
StartMonth	String	Optional	Start month of the information enquiry.	22018
EndMonth	String	Optional	End month of the information enquiry. If it is null. End month will be start month	22028
InquiryMode	Number	Optional	Inquiry Mode	0-Default 01- Outstanding/Postpaid 02-PrePaid
InquiryType	Number	Optional	Type of Inquiry:	0- Default 01- Query by Biller Account ID 02- Query By Biller QR/Bar Code
ContactNo	String	Optional	Indicate the Contact. Some partners takes the contact as input along with Account ID.	01717722282
CheckAmount	String	Optional	Sometimes required for prepaid inquiry	250
ExtendedParameter1	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter2	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter3	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter4	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter5	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Request Response Parameter Specification

Parameter	Response			
	Data Type	Mandatory or Optional	Description	Example
ResponseCode	String	Mandatory	Indicates the response code of the request based on successful acceptance of the request or failure	0
ResponseDesc	String	Mandatory	Indicates the response message of the request based on acceptance or failure of the request	Accept the service request successfully

Result Parameter Specification

Common field specification				
Command ID	ConfirmCheckBillCVRequest			
Parameter	Data Type	Mandatory or Optional	Description	Example
LoginID	String	Mandatory	Indicates the login identifier.	bKash
Password	String	Mandatory	Indicates the password associated to the login identifier.	K38MO3
Timestamp	String	Mandatory	The time when the message is sent to target system.	20150901185701
ConversationID	String	Mandatory	It is used to identify a unique transaction or business operation conversation inside cps and generated by cps.	5043
ResultCode	String	Mandatory	Indicates the result code after check the bill.	0
ResultDesc	String	Mandatory	Indicates the result description after confirmed the bill.	Success
InitiatorID	String	Optional	Received in the Corresponding Request Message	01717722282
BusinessShortCode	String	Optional	Received in the Corresponding Request Message	1753700700
InitiatorMSISDN	String	Optional	Received in the Corresponding Request Message	01717722282
RequesterMSISDN	String	Optional	Received in the Corresponding Request Message	01717722282
ContactNo	String	Optional	Received in the Corresponding Request Message	01717722282
PaymentRecipient	String	Optional	Additional Account Information	
AccountRemarks	String	Optional	Indicate Account information	Account Code
BillRefNumber	String	Optional	Received in the Corresponding Request Message	TX1001
SubID	String	Optional	Received in the Corresponding Request Message	SUB_TX1001
ProductName1	String	Optional	Indicate the product name	DESCO_PREPAID

Common field specification				
Command ID	ConfirmCheckBillCVRequest			
Parameter	Data Type	Mandatory or Optional	Description	Example
ProductID1	String	Optional	ID against product	DESC_001
MandatoryPayment1	Number	Optional	Indicate if the payment is mandatory or not	0- No required 1- Required
PenaltyDate1	String	Optional	Indicate date of penalty if exist	12022023
PenaltyAmount1	String	Optional	Indicate penalty Amount	200
PaymentMonth1	String	Optional	Indicate month of payment	JAN
PaymentState1	String	Optional	Indicate payment status	PAID
PaymentDetails1	String	Optional	Indicate payment details	Bill Breakdown
ActualAmount1	String	Optional	Indicate amount billed	200
RcvblAmount1	String	Optional	Indicate amount that has to be paid by user	180
MinAmount1	String	Optional	Indicate amount that has to be paid minimum by user	100
Amount1	String	Optional	Indicate only final amount of bill	200
AmountDetail1	String	Optional	Indicate bill breakdown	Bill Breakdown against amount
PartialAllowed1	Number	Optional	Indicate if partial payment is allowed	0-YES 1-NO
TotalAmount	String	Optional	Indicate the cumulative amount of all the product under same ID	500
TotalPaymentActual	String	Optional	Indicate the cumulative amount to be paid of all the product under same ID	500
TotalPaymentPenalty	String	Optional	Indicate the cumulative amount of penaltyof all the product under same ID	0
PartnerNotification	String	Optional	Notification that will be forwarded to user.	Bill Details
ExtendedParameter1	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter2	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter3	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter4	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Common field specification				
Command ID	ConfirmCheckBillCVRequest			
Parameter	Data Type	Mandatory or Optional	Description	Example
ExtendedParameter5	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Result Response Parameter Specification

	Response			
Parameter	Data Type	Mandatory or Optional	Description	Example
ResponseCode	String	Mandatory	Indicates the response code of the request based on successful processing of the request or failure	0
ResponseDesc	String	Mandatory	Indicates the response message of the request based on successful processing or failure of the request	Process the service request successfully

5.2.2 PayBill :

Request Parameter Specification

Common field specification				
Command ID	BillPaymentCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
LoginID	String	Mandatory	Indicates the login identifier.	bKash
Password	String	Mandatory	Indicates the password associated to the login identifier.	K38MO3
Timestamp	String	Mandatory	The time when the message is sent to target system.	20150901185701
ConversationID	String	Mandatory	It is used to identify a unique transaction or business operation conversation inside cps and generated by cps.	98IO76UJ9U
InitiatorID	String	Optional	Initiating Customer MSIDN/Organization ShortCode	01717722282
ParentID	String	Optional	If parent exists, then shortcode of parent	223322
InitiatorMSISDN	String	Optional	Initiating Customer MSIDN/Organization Till	8801753700700
RequesterMSISDN	String	Optional	Incase of assisted payment, original MSISDN of user	8801753700700

Common field specification				
Command ID	BillPaymentCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
ChannelCode	Number	Mandatory	Indicate the channelcode of the initiator.	00- Customer USSD 01- Merchant USSD 02- Agent USSD 03- Agent App 10- Customer APP 11- Customer Web Portal 12- Branch Officer APP
BusinessShortCode	String	Mandatory	Indicates the organization short code of the Bill Issuer or Merchant in the CPS.	2001
DebitMSISDN	String	Optional	MSISDN of debit party	8801753700700
bKashTRXRef	String	Mandatory	bKash TXN ID	98IO76UJ9U
BillRefNumber	String	Mandatory	Indicates the reference number of bill, which is from bill issuer.	TX1001
PayMode	Number	Optional	Same as Inquire mode in check	0-Default 01- Outstanding/Postpaid 02-PrePaid
PayType	Number	Optional	Same as Inquire type in check	0- Default 01- Query by Biller Account ID 02- Query By Biller QR/Bar Code
ProductID	String	Optional	ProductID of product	TX1001
SubID	String	Optional	Sub ID if exist	SUB_TX1001
BillAmount	String	Optional	Indicate the amount bill paid	200
PaymentContractNo	String	Optional	Additional information for payment	877263748
ContactNo	Number	Optional	If required then additional MSISDN sent.	1872326547
ActualAmount	String	Optional	Indicate the actual amount of bill	200
PartialAmountFlag	String	Optional	Indicate if partial payment allowed	1
BillMonth	String	Optional	Indicate month of payment	JAN
StartMonth	String	Optional	Indicate month range start	121222
EndMonth	String	Optional	Indicate month range end	210123
ExtendedParameter1	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter2	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter3	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Common field specification				
Command ID	BillPaymentCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
ExtendedParameter4	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter5	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Request Response Parameter Specification

	Response			
Parameter	Data Type	Mandatory or Optional	Description	Example
ResponseCode	String	Mandatory	Indicates the response code of the request based on successful acceptance of the request or failure	0
ResponseDesc	String	Mandatory	Indicates the response message of the request based on acceptance or failure of the request	Accept the service request successfully

Result Parameter Specification

Common field specification				
Command ID	ConfirmBillPaymentCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
LoginID	String	Mandatory	Indicates the login identifier.	bKash
Password	String	Mandatory	Indicates the password associated to the login identifier.	K38MO3
Timestamp	String	Mandatory	The time when the message is sent to target system.	20150901185701
ConversationID	String	Mandatory	It is used to identify a unique transaction or business operation conversation inside cps and generated by cps.	98IO76UJ9U
ResultCode	String	Mandatory	Indicates the result code after check the bill.	0
ResultDesc	String	Mandatory	Indicates the result description after confirmed the bill.	Success
PartnerTXNID	String	Optional	Partner TXN ID	9U87YYR73

Common field specification				
Command ID	ConfirmBillPaymentCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
ParentID	String	Optional	Received in the Corresponding Request Message	223322
InitiatorID	Number	Optional	Received in the Corresponding Request Message	01717722282
InitiatorMSISDN	String	Optional	Received in the Corresponding Request Message	8801753700700
RequesterMSISDN	String	Optional	Received in the Corresponding Request Message	8801753700700
BusinessShortCode	String	Mandatory	Received in the Corresponding Request Message	2001
BillRefNumber	String	Mandatory	Received in the Corresponding Request Message	TX1001
PayMode	Number	Optional	Received in the Corresponding Request Message	0-Default 01- Outstanding/Postpaid 02-PrePaid
PayType	Number	Optional	Received in the Corresponding Request Message	0- Default 01- Query by Biller Account ID 02- Query By Biller QR/Bar Code
ProductID	String	Optional	Received in the Corresponding Request Message	TX1001
SubID	String	Optional	Received in the Corresponding Request Message	SUB_TX1001
BillAmount	String	Optional	Received in the Corresponding Request Message	200
BillMonth	Number	Optional	Received in the Corresponding Request Message	JAN
StartMonth	String	Optional	Received in the Corresponding Request Message	120122
EndMonth	String	Optional	Received in the Corresponding Request Message	10123
TokenInfo	String	Optional	Indicate partner send some token information	JIU77RIF
PartnerNotification	String	Optional	Bill Details to be sent in notification, for assisted sent to requester MSISDN as well	Bill Details
ExtendedParameter1	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Common field specification				
Command ID	ConfirmBillPaymentCV			
Parameter	Data Type	Mandatory or Optional	Description	Example
ExtendedParameter2	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter3	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter4	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter5	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Result Response Parameter Specification

	Response			
Parameter	Data Type	Mandatory or Optional	Description	Example
ResponseCode	String	Mandatory	Indicates the response code of the request based on successful processing of the request or failure	0
ResponseDesc	String	Mandatory	Indicates the response message of the request based on successful processing or failure of the request	Process the service request successfully

5.2.3 Query Transaction Status :

Request Parameter Specification

Common field specification				
Command ID	QueryBillStatus			
Parameter	Data Type	Mandatory or Optional	Description	Example
LoginID	String	Mandatory	Indicates the login identifier.	bKash

Password	String	Mandatory	Indicates the password associated to the login identifier.	K38MO3
Timestamp	String	Mandatory	The time when the message is sent to target system.	20150901185701
ConversationID	String	Mandatory	It is used to identify a unique transaction or business operation conversation inside cps and generated by cps.	98IO76UJ9U
ExtendedParameter1	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter2	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter3	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter4	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter5	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Response Parameter Specification

Common field specification				
Response				
Parameter	Data Type	Mandatory or Optional	Description	Example
ConversationID	String	Mandatory	Indicates the login identifier.	98IO76UJ9U
ResponseCode	String	Mandatory	Indicates the response code of the payment	0
ResponseDesc	String	Mandatory	Indicate the response description of the payment	Success
Status	String	Mandatory	Indicates the bill status. Currently, the following values are supported: 0: Success Others: Fail	0
PartnerTXNID	String	Optional	Partner TXN ID	9U87YYR73

Common field specification				
Response				
Parameter	Data Type	Mandatory or Optional	Description	Example
ParentID	String	Optional	Received in the Corresponding Request Message	223322
InitiatorID	Number	Optional	Received in the Corresponding Request Message	01717722282
InitiatorMSISDN	String	Optional	Received in the Corresponding Request Message	8801753700700
RequesterMSISDN	String	Optional	Received in the Corresponding Request Message	8801753700700
BusinessShortCode	String	Optional	Received in the Corresponding Request Message	2001
BillRefNumber	String	Optional	Received in the Corresponding Request Message	TX1001
PayMode	Number	Optional	Received in the Corresponding Request Message	0-Default 01- Outstanding/Postpaid 02-PrePaid
PayType	Number	Optional	Received in the Corresponding Request Message	0- Default 01- Query by Biller Account ID 02- Query By Biller QR/Bar Code
ProductID	String	Optional	Received in the Corresponding Request Message	TX1001
SubID	String	Optional	Received in the Corresponding Request Message	SUB_TX1001
BillAmount	String	Optional	Received in the Corresponding Request Message	200
BillMonth	Number	Optional	Received in the Corresponding Request Message	JAN
StartMonth	String	Optional	Received in the Corresponding Request Message	120122
EndMonth	String	Optional	Received in the Corresponding Request Message	10123
TokenInfo	String	Optional	Indicate partner send some token information	JIU77RIF
PartnerNotification	String	Optional	Bill Details to be sent in notification, for assisted sent to requester MSISDN as well	Bill Details
ExtendedParameter1	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter2	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

Common field specification				
Response				
Parameter	Data Type	Mandatory or Optional	Description	Example
ExtendedParameter3	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter4	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	
ExtendedParameter5	String	Optional	Indicates the dynamic parameters in the request message. Different partner may need different extended inquiry parameters.	

5.2.4 Check Bill Sample Message :

Request Sample Message

```
<?xml version="1.0"?>
<soapenv:Envelope
xmlns:soapenv="https://linkprotect.cudasvc.com/url?a=http%3a%2f%2fwww.wq3.org%2f
2003%2f05%2fsoapenvelope&c=E,1,Ueq7ViWQBpm1NnVjrK5JJTOZBX2pdGIYAlc3x
AmYm09EXiE_HxHmYevrtibrteii8RoeqsOxth5Zcmm36ojKsZ1bj0iqM8pjOagyTkC2jcm
YaDl3ZA,,&typo=0">
  <soapenv:Body>
    <tem:ApplyTransactionRequest xmlns:goa="http://cps.huawei.com/cpsinterface/goa"
      xmlns:at="http://cps.huawei.com/cpsinterface/goa/at"
      xmlns:tem="http://tempuri.org/">
      <at:Header>
        <goa:CommandID> CheckBillCV</goa:CommandID>
        <goa:Version>1.0</goa:Version>
        <goa:LoginID>Biller1</goa:LoginID>

        <goa:Password>g3/dcHgsHHTlAGzRs7iw2R6743yRDeLDcKWpVoS89FZtrW6eSt2Ssgq
r4vwYfSne</goa:Password>
        <goa:Timestamp>20220110111810</goa:Timestamp>
        <goa:ConversationID>9AA304WCY1</goa:ConversationID>
        <goa:HeaderExtension>
          <goa:Parameter>
            <goa:Key>name</goa:Key>
            <goa:Value>cps</goa:Value>
          </goa:Parameter>
        </goa:HeaderExtension>
      </at:Header>
```

```
<at:Body>
  <at:Parameters>
    <goa:Parameter>
      <goa:Key>InitiatorID</goa:Key>
      <goa:Value>01717722282</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
      <goa:Key>InitiatorMSISDN</goa:Key>
      <goa:Value>01753700700</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
      <goa:Key>RequesterMSISDN</goa:Key>
      <goa:Value>01717722282</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
      <goa:Key>ChannelCode</goa:Key>
      <goa:Value>10</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
      <goa:Key>ParentID</goa:Key>
      <goa:Value>223322</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
      <goa:Parameter>
        <goa:Key>BusinessShortCode</goa:Key>
        <goa:Value>2001</goa:Value>
      </goa:Parameter>
      <goa:Parameter>
        <goa:Key>BillRefNumber</goa:Key>
        <goa:Value>TX1001</goa:Value>
      </goa:Parameter>
      <goa:Parameter>
        <goa:Key>SubID</goa:Key>
        <goa:Value>SUB_TX1001</goa:Value>
      </goa:Parameter>
      <goa:Parameter>
        <goa:Key>BillMonth</goa:Key>
        <goa:Value>22018</goa:Value>
      </goa:Parameter>
      <goa:Parameter>
        <goa:Key>StartMonth</goa:Key>
        <goa:Value>22018</goa:Value>
      </goa:Parameter>
      <goa:Parameter>
        <goa:Key>EndMonth</goa:Key>
        <goa:Value>22018</goa:Value>
      </goa:Parameter>
    </goa:Parameter>
  </at:Parameters>
</at:Body>
```

```

        <goa:Key>InquiryMode</goa:Key>
        <goa:Value>02</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>InquiryType</goa:Key>
        <goa:Value>01</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>ContactNo</goa:Key>
        <goa:Value>01301712997</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>CheckAmount</goa:Key>
        <goa:Value>250</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>ExtendedParmeter1</goa:Key>
        <goa:Value>Test1</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>ExtendedParmeter2</goa:Key>
        <goa:Value>Test2</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>ExtendedParmeter3</goa:Key>
        <goa:Value>Test3</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>ExtendedParmeter4</goa:Key>
        <goa:Value>Test4</goa:Value>
    </goa:Parameter>
    <goa:Parameter>
        <goa:Key>ExtendedParmeter5</goa:Key>
        <goa:Value>Test5</goa:Value>
    </goa:Parameter>
</at:Parameters>
</at:Body>
</tem:ApplyTransactionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

Request Response Sample Message

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:tem="http://tempuri.org/"
  xmlns:at="http://cps.huawei.com/cpsinterface/goa/at"
  xmlns:goa="http://cps.huawei.com/cpsinterface/goa">
  <soap:Header/>
  <soap:Body>
    <tem:ApplyTransactionResponse>
      <at:ResponseCode>0</at:ResponseCode>
      <at:ResponseDesc>Accept the service request successfully.</at:ResponseDesc>
    </tem:ApplyTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

Result Sample Message

```

<?xml version="1.0"?>
<soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soapenvelope">
  <soapenv:Body>
    <tem:ConfirmTransactionRequest
xmlns:goa="http://cps.huawei.com/cpsinterface/goa"
  xmlns:at="http://cps.huawei.com/cpsinterface/goa/at"
  xmlns:tem="http://tempuri.org/">
      <at:Header>
        <goa:CommandID> ConfirmCheckBillCVRequest</goa:CommandID>
        <goa:Version>1.0</goa:Version>
        <goa:LoginID>Biller1</goa:LoginID>

<goa:Password>g3/dcHgsHHTlAGzRs7iw2R6743yRDeLDcKWpVoS89FZtrW6eSt2Ssgq
r4vwYfSne</goa:Password>
        <goa:Timestamp>20220110111810</goa:Timestamp>
        <goa:ConversationID>9AA304WCY1</goa:ConversationID>
        <goa:HeaderExtension>
          <goa:Parameter>
            <goa:Key>name</goa:Key>
            <goa:Value>cps</goa:Value>
          </goa:Parameter>
        </goa:HeaderExtension>
      </at:Header>
      <at:Body>
        <ct:ResultCode>0</ct:ResultCode>
        <ct:ResultDesc>test</ct:ResultDesc>
        <at:Parameters>
          <goa:Parameter>
            <goa:Parameter>
              <goa:Key>InitiatorID</goa:Key>
              <goa:Value>01717722282</goa:Value>
            </goa:Parameter>
            <goa:Parameter>
              <goa:Key>BusinessShortCode</goa:Key>
              <goa:Value>1753700700</goa:Value>
            </goa:Parameter>
            <goa:Parameter>
              <goa:Key>InitiatorMSISDN</goa:Key>
              <goa:Value>01717722282</goa:Value>
            </goa:Parameter>
            <goa:Parameter>
              <goa:Key>RequesterMSISDN</goa:Key>
              <goa:Value>01717722282</goa:Value>
            </goa:Parameter>
          </at:Parameters>
        </at:Body>
      </tem:ConfirmTransactionRequest>
    </soapenv:Body>
  </soapenv:Envelope>

```

```
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ContactNo</goa:Key>
  <goa:Value>01717722282</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PaymentRecipient</goa:Key> //no sample
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>AccountRemarks</goa:Key>
  <goa:Value></goa:Value> //no sample
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillRefNumber</goa:Key>
  <goa:Value>TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>SubID</goa:Key>
  <goa:Value>SUB_TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ProductName1</goa:Key>
  <goa:Value>DESCO_PREPAID</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ProductID1</goa:Key>
  <goa:Value>DESC_001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>MandatoryPayment1</goa:Key>
  <goa:Value>0</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PenaltyDate1</goa:Key>
  <goa:Value>12022023</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PenaltyAmount1</goa:Key>
  <goa:Value>200</goa:Value>
</goa:Parameter>
<goa:Parameter>
```

```
<goa:Key>PaymentMonth1</goa:Key>
  <goa:Value>JAN</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PaymentState1</goa:Key>
  <goa:Value>PAID</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PaymentDetails1</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ActualAmount1</goa:Key>
  <goa:Value>200</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>RcvblAmount1</goa:Key>
  <goa:Value>180</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>MinAmount1</goa:Key>
  <goa:Value>100</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>Amount1</goa:Key>
  <goa:Value>200</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>AmountDetail1</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PartialAllowed1</goa:Key>
  <goa:Value>1</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>TotalAmount</goa:Key>
  <goa:Value>100</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>TotalPaymentActual</goa:Key>
  <goa:Value>100</goa:Value>
```

```
</goa:Parameter>
<goa:Parameter>
  <goa:Key>TotalPaymentPenalty</goa:Key>
  <goa:Value>100</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PartnerNotification</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter1</goa:Key>
  <goa:Value>Test1</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter2</goa:Key>
  <goa:Value>Test2</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter3</goa:Key>
  <goa:Value>Test3</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter4</goa:Key>
  <goa:Value>Test4</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter5</goa:Key>
  <goa:Value>Test1</goa:Value>
</goa:Parameter>
</at:Parameters>
</at:Body>
</tem:ConfirmTransactionRequest>
</soapenv:Body>
</soapenv:Envelope>
```

Result Response Sample Message

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:tem="http://tempuri.org/"
  xmlns:ct="http://cps.huawei.com/cpsinterface/goa/ct"
  xmlns:goa="http://cps.huawei.com/cpsinterface/goa">
  <soap:Header/>
  <soap:Body>
    <tem:ConfirmTransactionResponse>>
      <ct:ResponseCode>0</ct:ResponseCode>
      <ct:ResponseDesc>Process the service request successfully.</ct:ResponseDesc>
    </ct:Body>
  </tem:ConfirmTransactionResponse>>
</soap:Body>
</soap:Envelope>
```

5.2.5 Pay Bill Sample Message :

Request Sample Message

```
<?xml version="1.0"?>
<soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soapenv:soapenv">
  <soapenv:Body>
    <tem:ApplyTransactionRequest xmlns:goa="http://cps.huawei.com/cpsinterface/goa"
      xmlns:at="http://cps.huawei.com/cpsinterface/goa/at"
      xmlns:tem="http://tempuri.org">
      <at:Header>
        <goa:CommandID> BillPaymentCV</goa:CommandID>
        <goa:Version>1.0</goa:Version>
        <goa:LoginID>Biller1</goa:LoginID>
      </at:Header>
      <goa:Password>znqlx+4Bu9b8LFISKgNdPXvtPTusgsNF3faE2ENV6Hom6mHcophAYF
oXQEUNqWAu</goa:Password>
      <goa:Timestamp>20220110112054</goa:Timestamp>
      <goa:ConversationID>9AA604WCY4</goa:ConversationID>
      <goa:HeaderExtension>
        <goa:Parameter>
```

```

        <goa:Key>name</goa:Key>
        <goa:Value>cps</goa:Value>
    </goa:Parameter>
</goa:HeaderExtension>
</at:Header>
<at:Body>
    <at:Parameters>
        <goa:Parameter>
            <goa:Key>InitiatorID</goa:Key>
            <goa:Value>01717722282</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ParentID</goa:Key>
            <goa:Value>223322</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>InitiatorMSISDN</goa:Key>
            <goa:Value>8801717722282</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>RequesterMSISDN</goa:Key>
            <goa:Value>8801772833746</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ChannelCode</goa:Key>
            <goa:Value>10</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>BusinessShortCode</goa:Key>
            <goa:Value>2001</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>DebitMSISDN</goa:Key>
            <goa:Value>8801730070695</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>bKashTRXRef</goa:Key>
            <goa:Value>98IO76UJ9U</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>BillRefNumber</goa:Key>
            <goa:Value>TX1001</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>PayMode</goa:Key>
            <goa:Value>02</goa:Value>
        </goa:Parameter>
        <goa:Parameter>

```

```

    <goa:Key>PayType</goa:Key>
    <goa:Value>01</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>ProductID</goa:Key>
    <goa:Value>TX1001</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>SubID</goa:Key>
    <goa:Value>SUB_TX1001</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>BillAmount</goa:Key>
    <goa:Value>200</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>PaymentContractNo</goa:Key>
    <goa:Value>877263748</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>ContactNo</goa:Key>
    <goa:Value>1872326547</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>ActualAmount</goa:Key>
    <goa:Value>300</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>PartialAmountFlag</goa:Key>
    <goa:Value>1</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>BillMonth</goa:Key>
    <goa:Value>JAN</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>StartMonth</goa:Key>
    <goa:Value>121222</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>EndMonth</goa:Key>
    <goa:Value>210123</goa:Value>
  </goa:Parameter>
  <goa:Parameter>
    <goa:Key>ExtendedParmeter1</goa:Key>
    <goa:Value></goa:Value>
  </goa:Parameter>
  <goa:Parameter>

```

```
<goa:Key>ExtendedParmeter2</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParmeter3</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParmeter4</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParmeter5</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
</at:Parameters>
</at:Body>
</tem:ApplyTransactionRequest>
</soapenv:Body>
</soapenv:Envelope>
```

Request Response Sample Message

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:tem="http://tempuri.org/"
  xmlns:ct="http://cps.huawei.com/cpsinterface/goa/at"
  xmlns:goa="http://cps.huawei.com/cpsinterface/goa">
  <soap:Header/>
  <soap:Body>
    <tem:ApplyTransactionResponse>
      <at:ResponseCode>0</at:ResponseCode>
      <at:ResponseDesc>Process the service request successfully.</at:ResponseDesc>
    </tem:ApplyTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

Result Sample Message

```
<?xml version="1.0"?>
<soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soapenv:soapenv">
  <soapenv:Body>
    <tem:ConfirmTransactionRequest xmlns:goa="http://cps.huawei.com/cpsinterface/goa"
      xmlns:at="http://cps.huawei.com/cpsinterface/goa/at"
      xmlns:tem="http://tempuri.org/">
      <at:Header>
        <goa:CommandID>ConfirmBillPaymentCV</goa:CommandID>
        <goa:Version>1.0</goa:Version>
        <goa:LoginID>Biller1</goa:LoginID>

        <goa:Password>g3/dcHgsHHTlAGzRs7iw2R6743yRDeLDcKWpVoS89FZtrW6eSt2Ssgq
r4vwYfSne</goa:Password>
        <goa:Timestamp>20220110111810</goa:Timestamp>
        <goa:ConversationID>9AA304WCY1</goa:ConversationID>
        <goa:HeaderExtension>
          <goa:Parameter>
            <goa:Key>name</goa:Key>
            <goa:Value>cps</goa:Value>
          </goa:Parameter>
        </goa:HeaderExtension>
      </at:Header>
      <at:Body>
        <ct:ResultCode>0</ct:ResultCode>
        <ct:ResultDesc>success</ct:ResultDesc>
        <at:Parameters>
          <goa:Parameter>
            <goa:Key>PartnerTXNID</goa:Key>
            <goa:Value>9U87YYR73</goa:Value>
          </goa:Parameter>
          <goa:Parameter>
            <goa:Key>ParentID</goa:Key>
```

```
<goa:Value>223322</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>InitiatorID</goa:Key>
  <goa:Value>01717722282</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>InitiatorMSISDN</goa:Key>
  <goa:Value>8801730070685</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>RequesterMSISDN</goa:Key>
  <goa:Value>8801730070685</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BusinessShortCode</goa:Key>
  <goa:Value>2001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillRefNumber</goa:Key>
  <goa:Value>TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PayMode</goa:Key>
  <goa:Value>01</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PayType</goa:Key>
  <goa:Value>02</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ProductID</goa:Key>
  <goa:Value>TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>SubID</goa:Key>
  <goa:Value>SUB_TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillAmount</goa:Key>
  <goa:Value>200</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillMonth</goa:Key>
  <goa:Value>JAN</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>StartMonth</goa:Key>
```

```
<goa:Value>120122</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>EndMonth</goa:Key>
  <goa:Value>101023</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>TokenInfo</goa:Key>
  <goa:Value>JIU77RIF</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PartnerNotification</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter1</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter2</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter3</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter4</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ExtendedParameter5</goa:Key>
  <goa:Value></goa:Value>
</goa:Parameter>
</at:Parameters>
</at:Body>
</tem:>
</soapenv:Body>
</soapenv:Envelope>
```

Result Response Sample Message

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:tem="http://tempuri.org/"
  xmlns:ct="http://cps.huawei.com/cpsinterface/goa/ct"
  xmlns:goa="http://cps.huawei.com/cpsinterface/goa">
  <soap:Header/>
  <soap:Body>
    <tem:ConfirmTransactionResponse>
      <ct:ResponseCode>0</ct:ResponseCode>
      <ct:ResponseDesc>Process the service request successfully.</ct:ResponseDesc>
    </tem:ConfirmTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

5.2.6 Query Transaction Status

Request Sample Message

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soapenvelope"
  xmlns:tem="http://tempuri.org/"
  xmlns:ct="http://cps.huawei.com/cpsinterface/goa/at"
  xmlns:goa="http://cps.huawei.com/cpsinterface/goa">
  <soap:Header/>
  <soap:Body>
    <tem:ApplyTransactionRequest>
      <at:Header>
        <goa:CommandID>QueryBillStatus</goa:CommandID>
        <goa:Version>1.0</goa:Version>
        <goa:LoginID>dhs</goa:LoginID>

        <goa:Password>ewuInCoUl44YVVVT5Kx3fgKwYkDVXiWEtTtBQ0WXXan30s0k1oWOi
        FidzdvR8LkBi</goa:Password>
        <goa:Timestamp>20150901185701</goa:Timestamp>
        <goa:ConversationID>9AA304WCY1</goa:ConversationID>
        <goa:HeaderExtension>
          <goa:Parameter>
            <goa:Key>name</goa:Key>
            <goa:Value>cps</goa:Value>
          </goa:Parameter>
        </goa:HeaderExtension>
      </at:Header>
      <at:Body>
        <at:Parameter>
          <goa:Key>ExtendedParameter1</goa:Key>
```

```

    <goa:Value></goa:Value>
  </at:Parameter>
  <at:Parameter>
    <goa:Key>ExtendedParameter2</goa:Key>
    <goa:Value></goa:Value>
  </at:Parameter>
  <at:Parameter>
    <goa:Key>ExtendedParameter3</goa:Key>
    <goa:Value></goa:Value>
  </at:Parameter>
  <at:Parameter>
    <goa:Key>ExtendedParameter4</goa:Key>
    <goa:Value></goa:Value>
  </at:Parameter>
  <at:Parameter>
    <goa:Key>ExtendedParameter5</goa:Key>
    <goa:Value></goa:Value>
  </at:Parameter>
</at:Body>
</tem:ApplyTransactionRequest>
</soap:Body>
</soap:Envelope>

```

Response Sample Message

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:tem="http://tempuri.org/"
  xmlns:at="http://cps.huawei.com/cpsinterface/goa/at"
  xmlns:goa="http://cps.huawei.com/cpsinterface/goa">
  <soap:Header/>
  <soap:Body>
    <tem:ApplyTransactionResponse>
      <at:ResponseCode>0</at:ResponseCode>
      <at:ResponseDesc>Accept the service request
successfully.</at:ResponseDesc>
      <at:Parameters>
        <goa:Parameter>
          <goa:Key>Status</goa:Key>
          <goa:Value>0</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
          <goa:Key>PartnerTXNID</goa:Key>
          <goa:Value>9U87YYR73</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
          <goa:Key>ParentID</goa:Key>
          <goa:Value>223322</goa:Value>
        </goa:Parameter>
      </at:Parameters>
    </tem:ApplyTransactionResponse>
  </soap:Body>
</soap:Envelope>

```

```

</goa:Parameter>
<goa:Parameter>
  <goa:Key>InitiatorID</goa:Key>
  <goa:Value>01717722282</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>InitiatorMSISDN</goa:Key>
  <goa:Value>8801730070685</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>RequesterMSISDN</goa:Key>
  <goa:Value>8801730070685</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BusinessShortCode</goa:Key>
  <goa:Value>2001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillRefNumber</goa:Key>
  <goa:Value>TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PayMode</goa:Key>
  <goa:Value>01</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>PayType</goa:Key>
  <goa:Value>02</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>ProductID</goa:Key>
  <goa:Value>TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>SubID</goa:Key>
  <goa:Value>SUB_TX1001</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillAmount</goa:Key>
  <goa:Value>200</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>BillMonth</goa:Key>
  <goa:Value>JAN</goa:Value>
</goa:Parameter>
<goa:Parameter>
  <goa:Key>StartMonth</goa:Key>
  <goa:Value>120122</goa:Value>

```

```

        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>EndMonth</goa:Key>
            <goa:Value>101023</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>TokenInfo</goa:Key>
            <goa:Value>JIU77RIF</goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>PartnerNotification</goa:Key>
            <goa:Value></goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ExtendedParameter1</goa:Key>
            <goa:Value></goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ExtendedParameter2</goa:Key>
            <goa:Value></goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ExtendedParameter3</goa:Key>
            <goa:Value></goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ExtendedParameter4</goa:Key>
            <goa:Value></goa:Value>
        </goa:Parameter>
        <goa:Parameter>
            <goa:Key>ExtendedParameter5</goa:Key>
            <goa:Value></goa:Value>
        </goa:Parameter>
    </at:Parameters>
</at:Body>
</tem:ApplyTransactionResponse>
</soap:Body>
</soap:Envelope>

```

5.2.7 API Error Case Sample Response

```
<ApplyTransactionResponse      xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <ResponseCode
xmlns="http://cps.huawei.com/cpsinterface/goa/at">BEC0001</ResponseCode>
  <ResponseDesc xmlns="http://cps.huawei.com/cpsinterface/goa/at">Member does not
exist</ResponseDesc>
</ApplyTransactionResponse>
```

6. Non Functional Aspect

Solution High Availability: Details will be finalized during LLD.

Solution Disaster Recovery: Details will be finalized during LLD.

Reliability & Performance: Will be ensured via Software architecture; details will be finalized during LLD. However Application Reliability & Performance will be measured through Performance & Benchmark testing.

Interface Specifications: The entire sound bound API needs to follow the bKash CORE API specification. For the Northbound APIs (default), it is recommended to use the SOAP API spec (should support Swagger spec). Apart from that third-party APIs spec needs to be adopted at the Northbound side as required.

Overload Control:

Service wise overload control is a mechanism that rejects requests periodically based on configured rules after the number of concurrent requests reaches the upper limit while consideration of other metrics (AVG response time threshold, defined operation time, proportion of fault).

Security: PCI DSS scope has to be adopted as aligned. Details will be figure out during LLD. The scope will be measured through VA/PT.

Application Layer Security: Applications in the solution use the following security technologies and measures to ensure secure running:

1) Password security

- Credential complexity should be configurable.
- When logging/changing password into the system, the administrator must use HTTPS to protect passwords from eavesdropping.

- Default password cannot be used for login.
- The system must support password repetition control so that a user cannot change a password to one used recently.

2) Authentication security

- A verification code must be provided on the administrator login page. The verification code becomes invalid when it is used for once or it is not used in a specified time.
- Authentication modules must verify input parameters first.
- No reserved backdoor account or special access mechanism is allowed. All authentication operations are performed by the authentication module.
- During user login, the verification code is checked before the username and password.
- If a user fails to log in for consecutive attempts, the user's account is locked. The number of consecutive login attempts and the locking duration are configurable.
- When authentication fails, an authentication failure message is displayed, but the cause is not provided.
- Only necessary permissions can be assigned to user accounts.
- Authentication is required in between system communication. Asymmetric key based signature is recommended for client server authentications. However, based on the third-party orientation model this can be leveraged.

3) Session management security

- Information cannot be changed during a session, for example, an authenticated user's ID, must be stored and maintained on the server as part of the session status.
- The session timeout mechanism must be configured. When a session times out, related information must be cleared.
- A session must be released when a user clicks the logout/or exit button.
- Service logic must be processed on the server and cannot be bypassed.

4) Sensitive data storage

- Sensitive data should not be stored in code.
- Keys and account passwords should be stored in databases or files after being hashed or encrypted as required.
- Open, secure, and standard encryption algorithms are used to encrypt data. And it is subject to change with time. For some cases, along with encryption, obfuscation needs to be introduced.

5) Sensitive data transmission

- Use the HTTP-POST method to submit table data, and reduce the number of times submitting table data using the HTTP-GET method.
- Sensitive data is transferred between the client and server after being encrypted.
- URLs should not carry session IDs.

6) Interface & User data verification

- The system must verify input data of all servers/user (for example, data from the Hidden Fields, Cookies, HTTP Headers, interface parameter and URL parameters or client scripts in hot links). If the input data is invalid, the system makes the sessions invalid and records alarm logs.

- The system must verify that the character type and input character string length meet the standards and that the input data is correct.
 - Non-encrypted information in the HTTP headers cannot be used as the security decision basis.
 - Character strings entered by a user cannot be used to create executable SQL statements to prevent SQL injection attacks.
 - Dynamic XPath statement creation is forbidden to prevent XPath injection attacks.
 - Input parameters used for redirection cannot contain carriage return characters and new line characters to prevent HTTP response splitting attacks.
- 7) Before untrusted data is transmitted from a server to a client, the system must execute HTML encoding on the data to prevent cross-site scripting attacks.
- 8) File upload and download security
- Uploaded or downloaded files whose types and sizes meet the standards are listed in a whitelist.
 - Data submitted by users cannot be used as the path or name of the file to be read, written, uploaded, or downloaded to prevent cross-directory attacks.
- 9) DoS attack prevention
- All portal components provide the application-level anti-DoS function and can control the number of users in a specified period (the maximum number of users is configurable).
- 10) Secure communications protocol
- Management traffic must be encrypted when being transmitted among the management plane on the host, local maintenance terminal, and network management and maintenance terminal. Proper transmission protocols such as SSH, SFTP, TLS, IPSec, and SSL are used to ensure traffic management security.
 - It should support both one way & mutual authentication for transport layer security. The SSL/TLS authentication mode configurations should not be globally configured; organization/service/direction wise configuration is highly required.

Data & Log Retention Policy: As per aligned policy. However, there should be some processes so that operation can retrieve the archive info for offline dispute management. Reference: Data & Log Retention Policy document.

Fault management: Should cover both alarm & performance management. Reference: Fault management document.

Log:

Both System & Application level log needs to be managed in efficiently & effective manner.

System Level Log: Managing by logging service provision.

Application Level Log: Three types of log need to be generated in the solution.

- 1) **Debug Log:** Record of errors that are encountered by the application while in operation.
 - It should capture every single runtime error which occurs in Application in any means, for example, failure of- query execution in DB, Session management, connectivity's, services processes etc.

- It should record the running path of trace programs, for example, the entry and exit of logic (function) for trace business and error details, third-party error message service, as well as start, stop & restart events.
 - It should contain the details error information, location of error, identity information, time stamp etc.
- 2) Interface/Access Log: This log provides summary information for each request both inbound & outbound. Each log entry consists of the interface Id/Name, request response correlation, duration of the processing time, unique Id, result code, result status, request/result body etc.
- 3) Run Log: This will record the running status of the system and contextual information- key events during execution process of the business logic/function.

Audit Log: Audit log needs to be managed for Application & System level. Audit log entries should include destination and source addresses of the end-user, timestamp, user login information, data modifications, modifications of both system & business configurations, and any service operations.

Log levels: Logging information important for troubleshooting or auditing the system, hence a certain level of log needs to be provisioned. However, there is trade-off to capture every detail of log and the Application performances. Hence, logging level – Debug, Info, Trace, Error needs to be provisioned for the all the log types.

Note:

- Run log only has three levels: **INFO**, **WARN** and **ERROR**.

Log Properties:

- Logging can be switched off, means the system does not record logs. Choose this option when print logs are not required.
- Session & Correlation/Trace ID should be provisioned.
- Log should be written in file & different type of log file will stored different folder. Log files are stored in centralized mode.
- Log file should be generating hourly basis, and naming should contain Type of Log+ Date+Time.
- Provision of structured Logging so that system can read the log based on defined rule. Arbitrary format is required so that custom parsing is required to extract the attributes.
- Logs must be displayed by log level. It is recommended that logs be displayed at a maximum of four levels.
- For file-based logs, apply strict permissions concerning which users can access the directories, and the permissions of files within the directories
- In web applications, the logs should not be exposed in web-accessible locations.
- There's no guarantee that format won't change in future, hence breaking downstream consumption needs to be provisioned.
- Sensitive information in log should be masked during printing.

Error Code Provision:

- One to One & Many to One error code relationship has to be provisioned in the aggregator from CPS to aggregator & 3rd Party to aggregator perspective.
- Error Codes does get updated in CPS side as well as at the 3rd party sides. Hence, configurable provision should be available.

- Different 3rd party will have different error code provision according to their service definitions. Hence, 3rd Party wise error code mapping needs to be provisioned.

Note:

CPS error code mapping provision can be handled in the Core Transaction support layer. 3rd Party error codes mapping provision can be handled in the corresponding 3rd Party module within the Partner Enabler Layer.

Appendix

i. Definitions

API	Application Programming Interface
HTTPS	Secure Hyper Text transfer protocol
VPN	Virtual Private Network
S2S	Site to Site
MSISDN	Mobile Station International Subscriber Directory Number
SSL	Secure Socket Layer
TLS	Transport Layer Security

ii. Document Control

Version	Date	Author(s)	Comments
1.2	14-08-2024		