BDO Remit

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CONNECT
(BRS Web Service Facility)

Revision History

Version	Description of Change	Changes Made By	Date
1.0			1/31/12
1.1	Changes in Request parameters for apiRequest:		02/06/12
1.2	Changes in Interface Error Codes		10/08/12
1.3	Updated Other Banks Table Changed Request parameters for apiRequest *accountNo - Description(updated) *messageToBene1 – Description(updated) Changed Transaction Type – Door-to-Door *DDMM SM Appliance 46 (deleted)		12/11/12
1.4	Changed Request parameters for apiRequest *senderFirstname- Length(updated) *senderLastname- Length(updated) *senderMiddlename-Length/Description (updated) *receiverFirstname- Length(updated) *receiverLastname- Length(updated) *receiverMiddlename-Length/Description (updated)		12/27/12
1.5	Updated Digital Signature or Signed Data		01/18/13

Overview:

The BDO Remit Connect is a web service facility that will enable the integration of the BDO Remittance System (BRS) with its partner's front-end system for faster transmission and processing of remittance transactions. The facility will cater the following processes:

- Posting of Remittance transactions
- Inquiry of Status of Remittance transactions
- Account Number Validation (Part of whole process for each transaction)

System Architecture:

The web service is based on standard SOAP protocol which basically consist of REQUEST and RESPONSE in standard XML format. All REQUEST and RESPONSE are complex types (Please see sample XML layout below).
For all regular remittance transactions complex types are named accordingly:
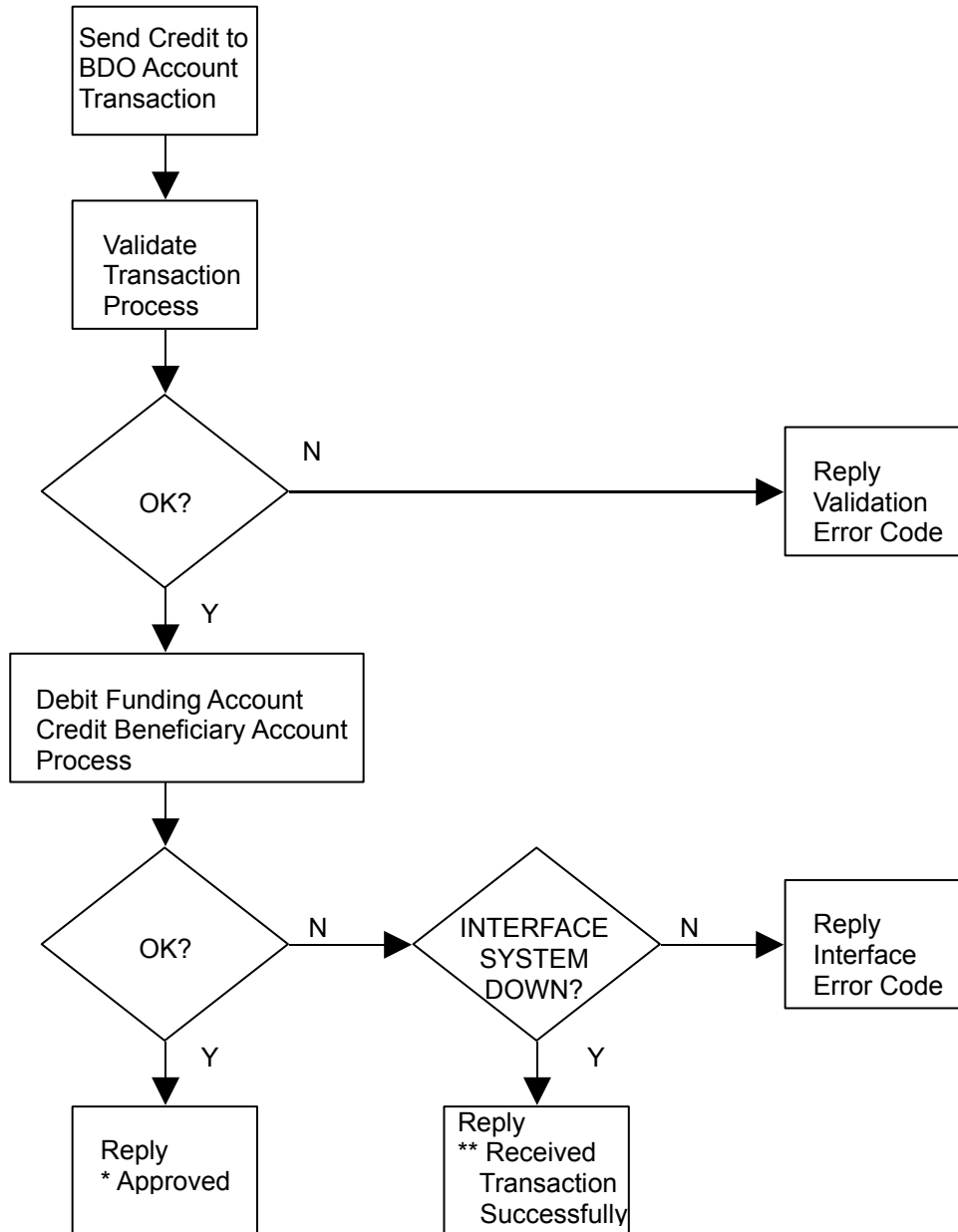SOAP REQUEST = apiRequest
SOAP Response = apiResponse
For CheckStatus operation complex types are named accordingly:
SOAP REQUEST = apiStatusRequest
SOAP Response = apiStatusResponse

List of Operations:

Operations	Description/Products
CreditCASAOnline	Credit to BDO Peso and USD account
CreditOtherBank	Credit to Account with Other Local Banks (refer to *pp.17-19* for the list of Other Local Banks)
CashCardReload	Credit to BDO Cash Card Account
PickUpCash	Cash Pickup in any BDO Branches, SM Forex, SM Business Centers and Rural Banks
PickUpMLLhuillier	Cash Pickup in any Mlhuillier branches
PickUpCebuana	Cash Pickup in any Cebuana Lhuillier branches
DoorToDoorCash	Cash Door to Door Delivery, Metro Manila and outside Metro Manila delivery
DoorToDoorCashCard	Cash Card Door to Door Delivery Metro Manila and outside Metro Manila delivery
DoorToDoorJolibee	Door to Door Delivery of desired Jollibee Meal
DoorToDoorMaxs	Door to Door Delivery of desired Max's Meal
DoorToDoorSMAppliance	Door to Door Delivery of SM Appliance
DoorToDoorSMGiftPadala	Door to Door Delivery of SM Gift Card
DoorToDoorRushDelivery	Guaranteed 2-3 hour rush delivery of remittance w/in Metro Manila.
BDOAKBeneficiary	A special savings account designed for OFW beneficiaries with a very minimal initial deposit and maintaining balance.
BDOAKRemitter	A special savings account designed for OFW's with a very minimal initial deposit and maintaining balance.
CheckStatus	Inquiry of Remittance Transaction Status

Process Flows:

Credit to BDO Account Remittance Transaction (Credit CASA Online)

```
┌─────────────────┐
│ Send Credit to  │
│ BDO Account     │
│ Transaction     │
└────────┬────────┘
         ↓
┌─────────────────┐
│ Validate        │
│ Transaction     │
│ Process         │
└────────┬────────┘
         ↓
      ◇ OK? ◇ ──N──→ ┌─────────────────┐
         │            │ Reply           │
         │            │ Validation      │
         Y            │ Error Code      │
         ↓            └─────────────────┘
┌──────────────────────────┐
│ Debit Funding Account    │
│ Credit Beneficiary Account│
│ Process                  │
└────────┬─────────────────┘
         ↓
      ◇ OK? ◇ ──N──→ ◇ INTERFACE ◇ ──N──→ ┌─────────────────┐
         │            │ SYSTEM    │        │ Reply           │
         Y            │ DOWN?     │        │ Interface       │
         ↓            └─────┬─────┘        │ Error Code      │
┌─────────────┐            │              └─────────────────┘
│ Reply       │            Y
│ * Approved  │            ↓
└─────────────┘     ┌─────────────────────┐
                    │ Reply               │
                    │ ** Received         │
                    │ Transaction         │
                    │ Successfully        │
                    └─────────────────────┘
```

NOTE:

  * Approved – Debit Funding Account and Credit Beneficiary Account Successfully Online-Realtime.

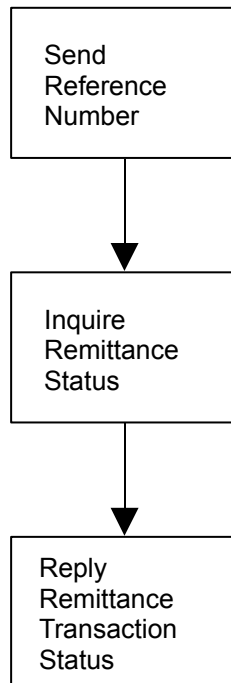 **** Received Transaction Successfully – For Backroom Processing.**

Other Remittance Transactions

```
┌─────────────────┐
│ Send Other      │
│ Remittance      │
│ Transactions    │
└────────┬────────┘
         │
         ▼
┌─────────────────┐
│ Validate        │
│ Transaction     │
└────────┬────────┘
         │
         ▼
       ╱────╲                    ┌─────────────────┐
      ╱ OK?  ╲ ───── N ────────▶ │ Reply           │
      ╲      ╱                    │ Validation      │
       ╲────╱                     │ Error Code      │
         │                        └─────────────────┘
         Y
         │
         ▼
┌─────────────────┐
│ Reply           │
│ ** Received     │
│   Transaction   │
│   Successfully  │
└─────────────────┘
```
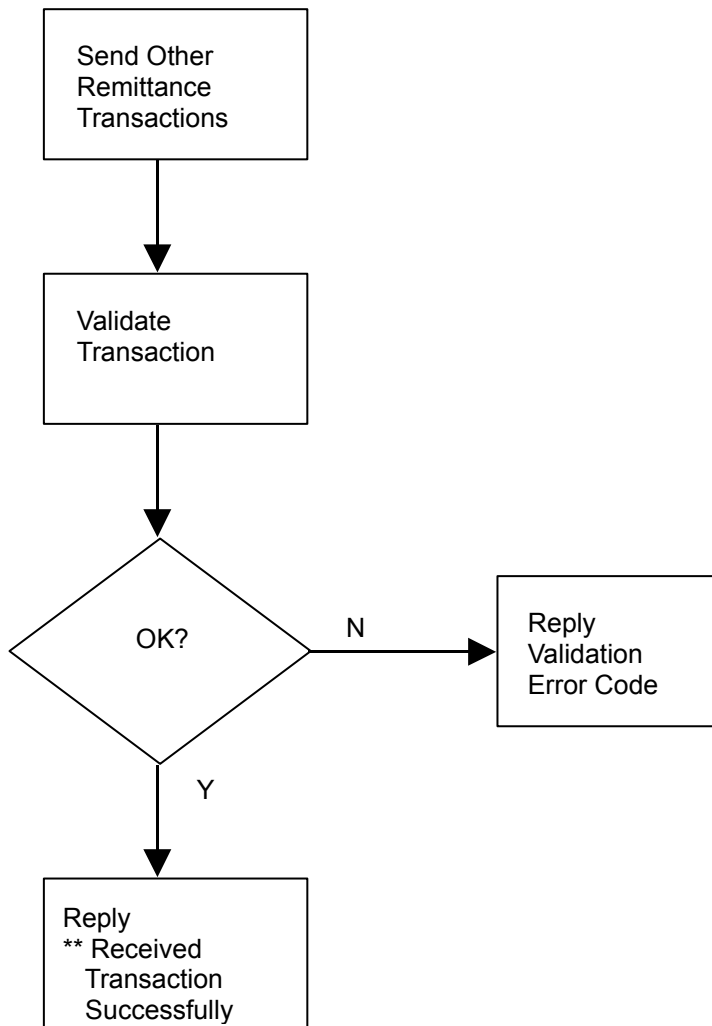
NOTE:

** Received Transaction Successfully – For Backroom Processing.

Get Remittance Transaction Status

```
┌─────────────┐
│ Send        │
│ Reference   │
│ Number      │
└─────────────┘
       │
       ▼
┌─────────────┐
│ Inquire     │
│ Remittance  │
│ Status      │
└─────────────┘
       │
       ▼
┌─────────────┐
│ Reply       │
│ Remittance  │
│ Transaction │
│ Status      │
└─────────────┘
```

Request parameters for apiRequest:

Parameter Name	Type	Description
userName	string	BRS Username
password	string	BRS Password. See process below for encryption procedure
signedData	string	See process below on how to generate digital signatures
conduitCode	string(2)	BDO assigned
locatorCode	string(3)	BDO assigned
referenceNo	string(25)	Alpha-numeric, no spaces and special character i.e. (~!@#$ %&*":;).
transDate	string(10)	No future date. Format: yyyy-mm-dd
senderFirstname	string(40)	Required
senderLastname	string(40)	Required
senderMiddlename	string(1)	Optional **Middle Initial Only**
senderAddress1	string(75)	Required
senderAddress2	string(75)	Optional
senderPhone	string(30)	Numeric
receiverFirstname	string(40)	Required
receiverLastname	string(40)	Required
receiverMiddlename	string(1)	Optional **Middle Initial Only**
receiverAddress1	string(75)	Required
receiverAddress2	string(75)	Optional
receiverMobilePhone	string(30)	Required for tran type: 01, 02, 05, 11, 43, and 45
receiverGender	string(1)	M or F Required for tran type: 10, 40, and 11
receiverBirthDate	string(10)	Required for tran type: 10, 40, and 11 Format: yyyy-mm-dd
transactionType	string(2)	Refer to transaction type table

		for valid values
payableCode	string(4)	Refer to transaction type table for valid values
bankCode	string(5)	If Tran Type = 01, 02, 03, 07, 10, 40 or 42 put BDO. If Tran Type = 04 please see Bank Table for valid values. **Leave blank for the following tran types: 05, 11, 43 and 45.**
branchName	string(40)	If Tran Type = 10 or 40 specify BDO branch. If Tran Type = 04 put "MAKATI" If Tran Type = 01, 02, 03, 07 or 42 put BDO. **Leave blank for other tran type**
accountNo	string(20)	**Numeric Format Required** If tran type = 04, see bank code table for required account number length. If tran type = 02 input BDO account number(10 or 12 digits) If tran type = 07 input cash card number. (16 digits) **Leave blank for other tran type**.
landedCurrency	string(3)	PHP or USD
landedAmount	string	Numeric. Format: *#.##*
messageToBene1	string(50)	Optional for Tran Type: 01, 03, 10, 40, and 42 only. Required for Tran Type: 05, 11, 43, 45, 47 and 48. (Default Message : BDO)
messageToBene2	string(50)	Optional for Tran Type: 01, 03, 10, 40, and 42. *Optional for Tran type: 05, 11, 43, 45, 47 and 48.*

Sample Soap apiRequest:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:rem="http://www.bdo.com.ph/RemitAPI">
<soapenv:Header/>
<soapenv:Body>
<rem:apiRequest>
<rem:userName>EF8XXXXXX</rem:userName>
<rem:password>0B2E9679892978599EE41E2141CD24A9</rem:password>
<rem:signedData>302C021453E4460C56D3652638FD05488AE20BDAF021413</rem:signedData>
<rem:conduitCode>EF</rem:conduitCode>
<rem:locatorCode>808</rem:locatorCode>
<rem:referenceNo>aBcDe12345</rem:referenceNo>
<rem:transDate>2012-01-20</rem:transDate>
<rem:senderFirstname>Sender FirstName</rem:senderFirstname>
<rem:senderLastname>Sender Lastname</rem:senderLastname>
<rem:senderMiddlename>Sender Middlename</rem:senderMiddlename>
<rem:senderAddress1>Sender Address One</rem:senderAddress1>
<rem:senderAddress2>Sender Address Two</rem:senderAddress2>
<rem:senderPhone>639171122330</rem:senderPhone>
<rem:receiverFirstname>Receiver Firstname</rem:receiverFirstname>
<rem:receiverLastname>Receeiver Lastname</rem:receiverLastname>
<rem:receiverMiddlename>Receiver Middlename</rem:receiverMiddlename>
<rem:receiverAddress1>Receiver Address One</rem:receiverAddress1>
<rem:receiverAddress2>Receiver Address Two</rem:receiverAddress2>
<rem:receiverMobilePhone>639171122339</rem:receiverMobilePhone>
<rem:receiverGender>M</rem:receiverGender>
<rem:receiverBirthDate>2012-01-20</rem:receiverBirthDate>
<rem:transactionType>02</rem:transactionType>
<rem:payableCode>CBBM</rem:payableCode>
<rem:bankCode>BDO</rem:bankCode>
<rem:branchName>BDO Branch</rem:branchName>
<rem:accountNo>0044XXXXXXXX</rem:accountNo>
<rem:landedCurrency>PHP</rem:landedCurrency>
<rem:landedAmount>1.00</rem:landedAmount>
<rem:messageToBene1>Mesage To Bene One</rem:messageToBene1>
<rem:messageToBene2>Mesage To Bene Two</rem:messageToBene2>
</rem:apiRequest>
</soapenv:Body>
</soapenv:Envelope>
```

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Response variables for apiResponse:

Parameter Name	Type	Description
responseCode	string	Refer to error code list below
description	string	Refer to error code list below

Sample Soap apiResponse:

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
<S:Body>
<apiResponse xmlns="http://www.bdo.com.ph/RemitAPI">
<responseCode>00</responseCode>
<description>Approved</description>
</apiResponse>
</S:Body>
</S:Envelope>
```

Request parameters for apiStatusRequest:

Parameter Name	Type	Description
locatorCode	string	
referenceNo	string	

Sample Soap apiStatusRequest:

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:rem="http://www.bdo.com.ph/RemitAPI">
<soapenv:Header/>
<soapenv:Body>
<rem:apiStatusRequest>
<rem:locatorCode>5XX</rem:locatorCode>
<rem:referenceNo>10XXXXXX</rem:referenceNo>
</rem:apiStatusRequest>
</soapenv:Body>
</soapenv:Envelope>

Response variables for apiStatusRequest:

Parameter Name	Type	Description
ReferenceNo	string	
status	string	
dateProcessed	string	
dateDelivered	string	
remarks	string	

Sample Soap apiStatusResponse:

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
<S:Body>
<apiStatusResponse xmlns="http://www.bdo.com.ph/RemitAPI">
<ReferenceNo>UEXXXXXXXXXXXXX</ReferenceNo>
<status>RFNDD</status>
<dateProcessed>null</dateProcessed>
<dateDelivered>null</dateDelivered>
<remarks>for reprocess</remarks>
</apiStatusResponse>
</S:Body>
</S:Envelope>
```

Validation Error Codes

Error Code	Description
VSD	Invalid Signed Data
VUP	Invalid User Password
VRN	Invalid Reference No
RA1	Invalid Receiver Add 1
RMP	Invalid Receiver Mobile No
VRG	Invalid Receiver Gender
VRB	Invalid Receiver Birthdate
VTT	Invalid Transaction Type
VPC	Invalid Payable Code
VLC	Invalid Landed Currency
MB1	Invalid Message To Bene 1
MB2	Invalid Message To Bene 2
STT	Unable To Log Txn
BWE	BDO Web Service Exception
BPE	BRS Password Exception
PKI	Signed Data Exception
IVE	IST Verification Exception
SQL	Tie Up Data Exception
BCR	Invalid User Credentials
ICC	Invalid Conduit Code
ILC	Invalid Locator Code
FAN	Invalid Account Number
PDC	Unable To Decrypt Password
CHK	Check Status Error
VSP	Invalid Sender Phone
VSL	Invalid Sender Lastname
VRL	Invalid Receiver Lastname
SA1	Invalid Sender Address 1
VSF	Invalid Sender Firstname

VRF	Invalid Receiver Firstname
DUP	Reference Number Already Exist
1 or 01	Received Transaction Successfully
MIN	Below Minimum Amount
MAX	Exceeds Maximum Amount
ISF	Service Fee Not Yet Setup
FBC	Invalid Bank Code
VID	Invalid Transaction Date
TNO	Transaction Type Not Allowed For This Operation

Interface Error Codes

Error Code	Description
-1	Transaction Web Service Error : System Error
-2	Transaction Web Service Error : Access Violation
-3	Transaction Web Service Error : Username and Password does not match
-4	Transaction Web Service Error : Server Time Does not sync
0 or 00	Approved
18	Not Allowed
51	No Funds
201	Account Closed
202	Account Suspended
203	Account Cancelled
204	Account Inactive
230	Owner Deceased
231	Account Blocked
15	Dormant Account
21	Account not Found
04	Closed Account
26	Deceased Account
76	Invalid Account (closed to posting, cross currency account)
999	Interface Error - <Code>

Remittance Status Codes

Status Code	Status State
PAID	End-State Status
CANCELLED	End-State Status
OUTSTANDING	In-Transit Status
FOR VERIFICATION	In-Transit Status
INPROCESS	In-Transit Status

Transaction Type

AK Opening

TRAN TYPE	DESCRIPTION	PAYABLE CODE
10	BDO AK Opening for Beneficiary	BPMM
40	BDO AK Opening for Remitter	BPMM

Credit to Account

TRAN TYPE	DESCRIPTION	PAYABLE CODE
02	Credit to BDO Account	CBBM
04	Credit to Other Bank	CBOM
07	Reload to BDO Cash Card	CBMM

Door-to-Door

TRAN TYPE	DESCRIPTION	PAYABLE CODE
05	Door-to-door Cash Delivery	DDMM
11	Door-to-door Cash Card Delivery	DDMM
43	Door-to-door Jollibee Meal Delivery	DDMM
45	Door-to-door Max's Delivery	DDMM

| 47 | Door-to-door SM Gift Card Padala | DDMM |
| 48 | Door-to-door Rush Delivery | DDMM |

Pickup

TRAN TYPE	DESCRIPTION	PAYABLE CODE
01	Pickup Cash @ Anywhere	BPMM
42	Pickup Cash @ MLhullier Kwarta Padala	BPMM
CL	Pickup Cash @ Cebuana Lhuillier	BPMM

Other Banks Table

BANK CODE	BANK NAME	CA/SA LENGTH
ACB	Active Bank	10
AB	Allied Bank	10
ASB	Allied Savings Bank	10
AMA	AMA Bank	16
ANZ	ANZ Bank	11
ATB	Asia Trust Development Bank	10
AUB	Asia United Bank	12
AUB1	Asia United Bank	10
ADB	Asian Development Bank	10
BCF	Banco Filipino	12
BSJ	Banco San Juan (A Rural Bank)	10
BANGK	Bangkok Bank	13
BOC	Bank of Commerce	12
BPI	Bank of the Philippine Islands	10
BOT	Bank of Tokyo	13
BONE	Bank One Savings and Trust Corp	10
BPIF	BPI Family Savings Bank	10
CB	China Bank	10
CBC	China Bank	12
CTB	Chinatrust Bank	12
CITI	Citibank	10
CITI1	Citibank	16
CITIS	CitiBank Savings	10

CITIS1	Citibank Savings	16
CITY	City Savings Bank	10
CITE	City State Savings	12
DB	Deutsche Bank	10
DBP	Development Bank of the Philippines	10
DBP13	Development Bank of the Philippines	13
EWB	East West Bank	10
EWBC	East West Bank	12
EB	Ecology Savings Bank	10
EQSB	Equicom Savings Bank	11
EIB	Export and Industry Bank	10
FEB	Far Eastern Bank	10
PILSB	Filipino Savers Bank (A Rural Bank)	10
FAB	First Allied Bank	10
FCB	First Consolidated Bank	14
FMB	First Macro Bank	8
GSIS	GSIS Family Bank	12
GSB	Guagua Savers Bank	8
HSBC	Hongkong & Shanghai Bank	12
HSBCS	HSBC Savings	12
ISB	Insular Savings Bank	10
ISLAM	Islamic Bank (Al-Amanah Islamic Investment Bank)	10
LBP	Land Bank of the Philippines	10
LDB	Luzon Development Bank	10
MAL	Malayan Bank	15
May	MayBank Phils	12
MBTC	Metropolitan Bank and Trust Company	13
MBTC1	Metropolitan Bank and Trust Company	10
PBB	Phil Business Bank	12
PNB	Phil National Bank	10
PNB1	Phil National Bank	12
POB	Phil Postal Savings Bank	12
PBCOM	Philippine Bank of Communications	12
PSB	Philippine Savings Bank	12
PTB	Philippine Trust Company	12
PTC	Philippine Trust Company	10
PVB	Philippine Veterans Bank	10
PVB1	Philippine Veterans Bank	13

PLB	Planters Development Bank	10
PRB	Premiere Development Bank	12
RCBCS	RCBC Savings	10
RCBC	Rizal Commercial Banking Corp.	10
RSB	Robinsons Bank Corp	12
SARAN	Sarangani Rural Bank	10
SB	Security Bank	13
SCB	Standard Chartered Bank	13
STRBK	Sterling Bank	12
SMB	Summit Bank	8
UCPBS	UCPB Savings Bank	10
UCPBA	UCPB Savings Bank	11
UB	Union Bank of the Philippines	12
UCPB	United Coconut Planters Bank	10
UCPB1	United Coconut Planters Bank	12
UOB	United Overseas Bank	12
USB	University Savings Bank	15

Web Service Security:

The remittance web service has several layers of security for a user to be able to make a valid transaction. BDO will provide standard libraries (JAR files) to help users fulfill/pass the necessary security level. Please see step by step instructions below to properly encrypt password and generate the unique digital signature. Tie-up will also be required to give BDO standard X.509 certificates to BDO. File naming standard for certificates will be *username*.cert

List of jar files to be provided:
RemittanceAPITool.jar

Password encryption procedures:
Call the method com.bdo.remit.cipher.impl.CipherImpl.encrypt(*BRS Password*) located in the RemittanceAPITool.jar. Method parameter is string.

sample snippet: com.bdo.remit.cipher.impl.CipherImpl.encrypt(*"BRSPassword"*);
Output will be a simple encrypted string and will be used as the password passed to the actual web service.

Digital Signature or Signed Data:

Users should locally generate java key stores (JKS) using the java keytool command.
From the generated JKS a public certificate file can be generated (should be given to BDO).
Certificate files are necessary for the web service to be able to verify the digital signatures passed by the users.
To generate a digital signature for the SAOP REQUEST use the method

Status Request (Parameters are all string):
- BRS PASSWORD = To be given by BDO Remittance Unit
- TRANSACTION REFERENCE NUMBER = Unique transaction reference number included in the soap request
- KEYSTORE FILE = Tie-up JKS file(e.g. C:\Remit.jks)
- KEYSTORE PASSWORD = JKS password
- KEY NAME = Key name located within the JKS file
- KEY PASSWORD = Password of the key located within the JKS file

com.bdo.remit.pki.impl.PKIImpl.**getStsSignedData**('CLEAR BRS PASSWORD', 'TRANSACTION REFERENCE NUMBER', 'KEYSTORE FILE','KEYSTORE PASSWORD', 'KEY NAME', 'KEY PASSWORD'));

Transactions (Parameters are all string):
- BRS PASSWORD = To be given by BDO Remittance Unit
- TRANSACTION REFERENCE NUMBER = Unique transaction reference number included in the soap request
- LANDED AMOUNT = Transaction amount
- TRANSACTION DATE = Transaction date
- ACCOUNT NUMBER = Clients account number
- KEYSTORE FILE = Tie-up JKS file(e.g. C:\Remit.jks)
- KEYSTORE PASSWORD = JKS password
- KEY NAME = Key name located within the JKS file
- KEY PASSWORD = Password of the key located within the JKS file

com.bdo.remit.pki.impl.PKIImpl.**getTxnSignedData**('CLEAR BRS PASSWORD', 'TRANSACTION REFERENCE NUMBER', 'LANDED AMOUNT', 'TRANSACTION DATE', 'ACCOUNT NUMBER', 'KEYSTORE FILE','KEYSTORE PASSWORD', 'KEY NAME', 'KEY PASSWORD'));