



BANK OF PAPUA NEW GUINEA

# Request for Proposals for a Core Banking System for a Central Bank

Release Date ..... 16 November 2022  
Question Period..... 28 November - 2 December 2022  
Close Date..... 13 January 2023

# **1 Summary**

## **1.1 What this RFP is for**

This RFP is to supply and implement a core banking system (CBS) for Bank of Papua New Guinea (BPNG), primarily to support its mandate to provide efficient and responsive banking services to the Government of PNG.

## **1.2 What is Important to us**

The most important factors for BPNG are:

1. Meeting our business requirements as set out in the schedule to this RFP
2. Track record of the vendor and product – we want an established system that is already working as a CBS in other banks, preferably central banks
3. Your ability to support this system for us in Papua New Guinea, during implementation and throughout the life of the system, as our needs evolve.
4. The ability to host on premises in BPNG. We do not want a hosted or cloud-based solution.

## **1.3 About BPNG**

The Bank of Papua New Guinea is the central bank of the Independent State of Papua New Guinea (PNG). BPNG provides banking services to the Government of PNG, among its other functions.

## 2 Request for Proposals

This RFP is structured as follows:

### *Section 1 – Summary*

*Section 2 – Request for Proposals* sets out the context for this RFP, the process, anticipated timeline and a glossary of terms used

*Section 3 – Background Information* sets out the reason for this procurement and what we hope to achieve. It also provides information about BPNG and the environment into which we wish to implement

*Section 4 – Information to Include in Your Proposal* provides a template for your technical proposal

*Section 5 – Costs* provides a template for your financial proposal

*Section 6 – Evaluation Approach* describes how we intend to evaluate your proposals

*Section 7 – Terms and Conditions* sets out the specific conditions applying to this RFP, proposals to be received and any contract formed as a result

*Schedule – Requirements for our CBS* sets out our requirements for a core banking system and invites you to state whether and how you can meet them.

### 2.1 Context

This is an open RFP that is part of a single-stage procurement. It follows an analysis of BPNG's needs for a replacement CBS. This RFP is published on BPNG's website at:

<https://www.bankpng.gov.pg/tender>

### 2.2 Timeline

The following timeline is anticipated. BPNG reserves the right to vary this timeline as it deems necessary to achieve its desired outcomes.

Release of RFP: ..... 16 November 2022

Questions answered by BPNG: ..... 28 November - 2 December 2022

Close of RFP (proposals to be received): ..... 13 January 2023

Shortlist: ..... 10 February 2023

Vendor presentations in PNG: ..... 20 March - 24 March 2023

Site visits: ..... 1-12 May 2023

Preferred supplier notified ..... 30 May 2023

## 2.3 Registration

You can register to receive answers to questions as set out under *Questions on this RFP* below. Register by emailing the contact with the subject line **REGISTRATION**.

Registration is optional and does not commit you to sending a proposal.

## 2.4 Contact

All contact about this RFP must be made through BPNG's point of contact:

[cbsprojectrfp@bankpng.gov.pg](mailto:cbsprojectrfp@bankpng.gov.pg)

Email will be acknowledged as soon as reasonably possible and in any case within one PNG business day. If email goes unacknowledged you may confirm its receipt by telephoning:

Stephen Nicholls on +64 21 167 9787

It is **NOT** appropriate to approach other BPNG staff members or contractors about this RFP.

## 2.5 Questions on this RFP

BPNG will accept questions on this RFP until the Question Date set out in the timeline above. Questions should be emailed to the contact above. We will endeavour to answer all questions quickly. If, in BPNG's opinion, a question or answer is applicable to all potential vendors, we will remove any identifying information from the question and circulate it with its answer to all parties who have registered as described above.

## 2.6 Submission of Proposals

Two separate proposals are required: a technical proposal and a financial proposal. Each is to be sent to a different address as set out below:

- The technical proposal should contain the answers to all the questions in this RFP, including the schedule, except the Costs section. It should be sent to the contact for this RFP advised above.
- The financial proposal should comprise your answers to the Costs section. We will not open this proposal until after we have selected a shortlist. It should be sent to:

[cbsprojectrfpcosts@bankpng.gov.pg](mailto:cbsprojectrfpcosts@bankpng.gov.pg)

(Please note this is **NOT** the same email address as the one above.)

Proposals are to be provided in PDF format by email with a subject line of PROPOSAL. If a proposal exceeds email size limits it should be split and sent in parts. Proposals must be received by the deadline, which is **12 noon PNG time** on the Closing Date set out above. Proposals will be acknowledged by return email – if this does not happen, please confirm receipt using the telephone contact above.

Printed proposals are not required and will not be accepted.

## 2.7 Terms Used in this RFP

The following terms are used in this RFP without further explanation:

ACH	Automated clearing house for payments
Active Directory	Microsoft authentication product built on Kerberos and LDAP
AML/CFT	Anti-Money Laundering and Countering the Financing of Terrorism
API	Application Programming Interface, used for inter-system communications
BPNG	Bank of Papua New Guinea – the central bank of PNG
BSS	Banking Services System, BPNG's existing banking system
CBS	Core Banking System, the subject of this RFP
EFT	Electronic funds transfer – a payment instruction
FASU	Financial Analysis and Supervision Unit, the body that receives suspicious transaction reports and similar in PNG
FX	Foreign exchange
ICT	Information and communications technology
KATS	Kina Automated Transfer System, the RTGS and ACH connecting all commercial banks in PNG, operated by BPNG
KYC	Know Your Customer
PDF	Portable document format
PGK	Kina, the currency of PNG
PNG	The Independent State of Papua New Guinea
REPS	Card and instant payment switch operated by BPNG
RMA	Relationship Management Application, part of SWIFT
RTGS	Real Time Gross Settlement, domestic interbank
SLA	Service level agreement
STP	Straight-through processing between computer systems without manual intervention
SWIFT	SWIFT Alliance financial messaging and related services
TLS	Transport layer security

### 3 Background Information

#### 3.1 About the Bank of Papua New Guinea

BPNG is Papua New Guinea's central bank. BPNG's main branch is in its headquarters building in downtown Port Moresby, PNG's capital city. There is also a BPNG branch and currency distribution centre in the city of Lae.

BPNG's objectives and functions are listed on its website at <https://www.bankpng.gov.pg>. This RFP concerns BPNG's mandate *to provide efficient and responsive banking services to the government of PNG*.

#### 3.2 Banking Services Provided by BPNG

As a central bank, BPNG provides a subset of the banking services of a commercial bank. Our credit management needs are not complex, for instance. Conversely, we have specific needs in our role as banker to the government that are additional to those of a commercial bank.

BPNG provides banking services to the Government of PNG, to a range of government bodies and to subnational governments within PNG. These services mainly comprise the maintenance of transactional accounts, verifying and processing payment instructions, receipting funds, printing and managing government cheques through their lifecycle and receiving and disbursing cash.

There are interfaces between Government financial systems and our existing banking system. We want to extend these with the new CBS and provide more control and better service through them. We are looking for better customer self-service options. We also want tighter management over the progress of payments and cheques through the system.

Government accounts are owned by central and provincial government entities. Accounts are divided into five classes:

- The consolidated revenue account, known as the Waigani Public Account (WPA), which is the main account where all major transactions take place
- Operating accounts, these are pre-funded accounts mainly for provincial governments and statutory bodies
- Drawing accounts are used for accounts payable, mainly by national government departments, provincial treasury offices and local level governments. The accounts are allowed to overdraw during the day and funded from the WPA at the end of each day
- Revenue accounts for IRC (the tax department) and Customs having a high volume of credits and few debits that are only to specific accounts
- Trust accounts set up for specific purposes with a low transaction volume.

BPNG needs the capability to hold outgoing payments for while confirming their validity. The CBS will need to keep track of cheques that have been drawn by government entities and validate that the cheques appear in lists of authorised payments issued by the relevant government body before placing them in a queue. The CBS will also need to provide a way for all payments including cheques and EFTs to be subject to AML and other checking before payment.

BPNG provides PGK transactional accounts for overseas banks and supranational bodies (*vostros*) which are currently held in our general ledger, but we wish to integrate them into the CBS.

BPNG also provides banking services for staff, comprising mainly transactional accounts with chequing services and electronic payments and receipts. We would like to improve these with self-service options.

### 3.3 Volume Information

These reflect approximate numbers in the current system. The new system should be sized for a substantial increase in electronic payments to and from Government accounts.

<u>Number of open accounts</u>	
Government accounts:	300
Other accounts (mainly staff):	1 300
Bank functional accounts:	400
<b>TOTAL:</b>	<b>2 000</b>

The number of transactions currently in the system varies from below 1 000 per day to a peak of 4 000 per day. However, these numbers are constrained by the current system. With a modern CBS, BPNG may have peak daily transaction loads in excess of 250 000 per day. The CBS must be capable of handling this with a reasonable growth path.

### 3.4 ICT Environment in the Bank of Papua New Guinea

BPNG systems are hosted primarily in a data centre in BPNG's head office building. There are disaster recovery hosts in a facility elsewhere in Port Moresby. BPNG intends to host the new CBS in these data centres, or possibly in a central Government of PNG government facility in Port Moresby. We will not consider hosting the system offshore or in the cloud.

Most critical BPNG systems are hosted using:

- IBM Power servers running AIX 7.2+
- Oracle Exadata production and DR with Oracle 19c and Data Guard protection
- VMware 6.5 environment
- IBM Storage V7000 Gen2.

BPNG uses these operating systems (OSs) in order of preference:

- AIX 7.2+
- Red Hat Linux
- Windows 2016 and above.

BPNG uses the Oracle database in the following configurations:

- Tablespace encryption
- Oracle Linux OS
- Applications must be compatible with Oracle database version 19c

- Database vault
- Oracle RAC database (2 instances)
- Oracle Data Guard for DR.

BPNG would prefer to run the new CBS on a platform it already uses but will evaluate an offering that uses an alternative platform if it meets the other requirements set out in this document.

### ***3.4.1 BPNG Existing Systems***

The following BPNG systems are potentially relevant to the CBS:

- BSS (Banking Services System) is BPNG's current banking system. It is a highly customised version of Montran's GPS software. BSS will be replaced by the new CBS.
- KATS (Kina Automated Transfer System) – this is PNG's RTGS and ACH, operated by BPNG. It is used for PGK payments and settlements between banks. KATS is an implementation of the Montran ATS. Currently real time payments are submitted to KATS by MT-style messages (ISO15022); these will be replaced by ISO20022 messages. Batched payments between banks – cheques and direct credits – are submitted to KATS using ISO20022 messages and cleared in sessions through the business day.
- REPS (Retail Electronic Payments System) – this is an interbank card switch that is being extended to carry a real time instant payment service. It is an implementation of BPC Banking Technology's SmartVista product. Members include the commercial banks and a range of non-bank financial institutions. REPS uses ISO8583 messages for card-based transactions and ISO20022 messages for Instant Payments. REPS is planned to accept payments for government accounts in the CBS using ISO20022 messages.
- CSD (Central Securities Depository) – BPNG's system for issuing, trading and custody of domestic debt securities, for monetary policy purposes and on behalf of the Government of PNG. The software used is from the Quantum suite by Intellect Design Arena.
- CRMS (Comprehensive Reserves Management System) – BPNG's treasury platform for holding and trading foreign currency instruments and managing foreign exchange deals. The PGK legs of some FX transactions are settled against accounts held at BPNG. CRSM is an implementation of Intellect Capital Cube from Intellect Design Arena.
- SWIFT Sanctions and Name Screening tools to assist in meeting BPNG's AML/CFT obligations.
- Oracle Financials. The General Ledger module runs all BPNG accounting functions and hosts some accounts that would be better handled in the CBS. The Accounts Payable module submits payments to BSS and KATS.
- Ascender payroll. BPNG runs its own payroll that generates payment messages for BSS.
- Government of PNG runs an Ascender payroll that could be interfaced to our CBS.

## 4 Information to Include in Your Proposal

Please use the headings in this section for your technical proposal.

### 4.1 Checklist to Answer This RFP

BPNG has some specific points that are essential to us in procuring a CBS. These points represent qualifying criteria for bidders on this RFP. We wish to be clear about them to avoid wasting time on both sides.

Therefore, we ask that you complete the following check list and supply it as the front page of your technical proposal. If you cannot tick 'yes' to all items in this list, we will not evaluate any proposal you might send.

I. Are you proposing an established core banking system that is operational in multiple financial institutions?	YES <input type="checkbox"/>
2. Can your system interface using SWIFT MT (ISO15022) message types and MX (ISO20022) message types?	YES <input type="checkbox"/>
3. Is your system available for BPNG to host in its own premises (i.e. not exclusively cloud-based)?	YES <input type="checkbox"/>
4. Can you provide onsite implementation services in PNG?	YES <input type="checkbox"/>
5. Can you provide post go-live support in PNG?	YES <input type="checkbox"/>

## 4.2 Summary of Proposal

Outline what you are offering us in a few paragraphs.

In addition, please provide:

- a) A statement that your proposal constitutes an offer to supply and that the offer has a validity of at least 90 days.
- b) A confirmation of your willingness to enter into a contract covered by the laws of Papua New Guinea, and any special conditions you would require on this contract.
- c) A confirmation that, if awarded the contract, you will accept responsibility for successful integration and interoperability of all proposed products, including data migration and interfaces with external systems.

### 4.2.1 *Other Customers*

Please provide a brief list of other customers for whom you have provided similar services. They should be as similar as possible to BPNG, ideally central banks that provide government banking services. We will not contact them at this stage, but if your proposal is shortlisted, we will ask you for relevant references so we can ask them about their experiences working with you and visit or consult them.

## 4.3 Company Information

Please provide the following information about your company:

- Company name and contact details
- Company ownership and size
- A brief history of the company
- A list of locations from which the company operates
- An indication of the range of products and services and markets served
- A list of staff proposed to deliver the offering in your proposal with their names and roles including nominated backup people for key positions.

### 4.3.1 *Subcontractors*

If you propose to use subcontractors to deliver some of the services you propose, please provide an explanation of the roles and responsibilities of each party. Provide the company information set out above for each subcontractor.

## 4.4 Functionality

Use the Schedule as a response template for answering how you will meet our requirements in your technical proposal.

### 4.4.1 *Additional Information*

Please provide any further information that you believe to be relevant. This might include opportunities to better streamline our processes, deliver better service to our government customers or other items we might find useful.

#### **4.4.2 Related Services**

Please set out any related services or products you can offer that you believe may assist us, possibly beyond the scope of this RFP, especially where this differentiates your offering from others. Can you see an opportunity for us to provide more efficient and responsive banking services to the Government of PNG.

### **4.5 Implementation Services**

BPNG would like to understand how you intend to implement your system into our environment. Please describe this using the headings below.

#### **4.5.1 Timeline**

What timeline do you propose for implementation of the system? Please provide milestones and note the requirements on BPNG and its contractors that are needed to achieve these milestones.

#### **4.5.2 Project Management**

Identify a single point of contact within your organisation who will lead the project and provide details of their credentials. Please provide details and credentials for other project members and describe their role on the project.

Outline how you will manage the project including:

- Methodology
- Roles and responsibilities
- Risk and issue management
- Project communications

#### **4.5.3 Migration Services**

Explain how you will support the migration of accounts from BSS and Oracle Financials. What other assistance will you need from the BSS supplier and from BPNG?

#### **4.5.4 Knowledge Transfer and Training**

We see sufficient training and a high degree of knowledge transfer to BPNG and external stakeholders as a critical success factor for this implementation. Please explain in detail how you will go about this.

Please include a training plan showing, for each system element to be supplied, and for the project overall, all proposed training modules, the recommended number and (if applicable) prior knowledge of people to be trained in each institution, the duration of each training module and the number of times each module is proposed to be delivered. The plan should specify any prerequisites for each training module. It should cover all aspect of the system being implemented.

We expect to see specific training modules for:

1. Management level personnel
2. Supervisory and operational staff
3. Audit staff
4. Technical training for systems development and testing staff

5. Technical training for systems operations and maintenance staff
6. Training in the creation of reports, and in the use of a report writer as applicable
7. Any other relevant training for users.

#### 4.6 Documentation

Please provide a list of documentation for the system that you propose to deliver. At minimum, we would expect documents aimed at:

- System users, both ordinary and administrative, i.e. user manuals
- ICT technical staff
- External stakeholders
- Documents to support testing including UAT scripts.

We also expect a database description so we can extract data into a business intelligence (BI) tool. Please confirm that you will supply this.

#### 4.7 Ongoing Support

Explain how you propose to support BPNG to manage and maintain the system. Include:

- post-launch support and maintenance
- software security patches, updates and upgrades
- consulting services to assist with adoption of global best practice
- custom changes for BPNG (such as interfaces) if we request them
- custom reporting as our requirements evolve
- any other areas you expect to deliver support.

We expect vendor support onsite in PNG for at least 12 months after go-live, renewable at BPNG's option.

What options do you offer for ongoing support after the warranty period (see Section 5.1 below) and thereafter? Please provide a sample SLA.

Do you provide 24\*7 email and telephone support?

#### 4.8 Escrow

BPNG requires that the source code and supporting technical documentation be held in escrow against the eventuality that your company becomes unable to support the system at some future point. The code will remain in escrow and not be accessed unless this happens.

Please indicate your acceptance of this point.

## **5 Costs**

This section should be used as a template for your financial proposal. Please complete this and send it separately from your technical proposal as directed in Section 2.6 above.

### **5.1 Warranty Period**

BPNG requires a minimum warranty period of 12 months from go-live. During this period, we require you to deliver support and software updates at no cost to us.

Please confirm your acceptance of this point.

### **5.2 Requirements for BPNG**

You are asked in your technical proposal to include sample architectures and lists of suitable hardware and system software, bearing in mind our expected volumes and resilience requirements. After contract signature, BPNG's ICT Department will agree with the successful proposer the final specification of all items and an installation timetable to match the agreed project plan. The successful proposer will be required to provide contractual assurances that the agreed total configuration (hardware, networking and software) will support the system in processing expected workloads for at least three years after acceptance.

Please indicate your acceptance of this point.

Beside hardware and system software, what other resources and support will BPNG need to provide for the implementation?

### 5.3 Cost Breakdown

Please use the table below to provide a cost breakdown in USD. The categories are:

- software licensing and/or service charges
- implementation costs i.e. your time in implementing the system
- training costs
- data migration from our existing system
- ongoing support costs payable to you
- any travel and accommodation costs that you propose to pass on to us
- any third-party costs you believe we will need in addition to the hardware and system software needed to run the system. Please provide an explanation of these.

USD	One-off	Year 1 (warranty)	Year 2	Year 3	Year 4	Year 5
<i>Software licensing</i>						
<i>Implementation costs</i>						
<i>Training costs</i>						
<i>Data migration</i>						
<i>Support costs</i>						
<i>Travel and accommodation</i>						
<i>Third party costs</i>						
<b>TOTAL</b>						

Document any assumptions that you make for pricing purposes.

BPNG will not pay over and above this quote.

### 5.4 Payment Timetable

Please provide a proposed payment timetable that is contingent on milestones being achieved.

## 6 Evaluation Approach

BPNG will form an evaluation panel to score each technical proposal against the requirements in the schedule to this RFP. The panel will also assess other aspects of each proposal including the implementation plans and ongoing support. Based on this evaluation the panel will select a shortlist.

The financial proposals will not be provided to the panel. Financial proposals will not be opened until the shortlist is established.

Shortlisted vendors will be invited to provide further information, a presentation to BPNG and may be asked to assist in providing contact with customer reference sites. Bidders that are not shortlisted will be notified. BPNG intends to select a preferred supplier for the CBS based on these investigations and on consultations with existing customers.

BPNG will advise the preferred supplier or suppliers and open contract negotiations with them.

### 6.1 Evaluation criteria

Proposals will be assessed on:

- Functional requirements
  - Ability to meet the requirements set out in the Schedule
  - Ability to integrate with existing BPNG systems
  - Ability to run in the current BPNG ICT environment
- Vendor capability
  - BPNG's confidence that you can implement the system in our environment in a reasonable timeframe
  - BPNG's confidence that you can support the system in PNG on an ongoing basis
  - Track record in delivering similar systems in environments like BPNG's
  - Capability to customise the system to meet evolving needs
  - Understanding of the context into which the CBS will be implemented
  - Project management approach
  - Risk management approach
- Cost of solution and supporting components, one-off and ongoing

Assessment of the above will take account of evidence of past performance and capability, however the quality and suitability of the proposal for BPNG will be paramount.

## 7 Terms and Conditions

### 7.1 Acceptance of Proposal

BPNG intends to select a supplier following receipt of proposals as set out above. However, BPNG:

- may accept the whole or part of a proposal
- will not necessarily accept the lowest priced proposals, or any proposal
- reserves the right to negotiate with any potential supplier or to seek clarification of the contents of a proposal from any potential supplier
- reserves the right to obtain products and services from any party, whether that party has submitted a proposal or not
- reserves the right to stop or vary the Request for Proposal process, or request further proposals, at any time.

Nothing in this document, or in any proposal, or both, shall be construed to create any binding contract (express or implied) between BPNG and any potential supplier.

BPNG intends to rely on your proposal and any other information you provide, e.g. in correspondence, presentations and negotiations. In submitting a proposal, you warrant that all information you provide to us:

- is true, accurate and complete, and not misleading in any material respect
- does not contain intellectual property that will breach a third party's rights.

### 7.2 Contact

All contact is to be through the nominated contact point in this RFP. Approaching other BPNG staff or contractors may cause a proposal not to be evaluated.

### 7.3 Confidentiality

If your proposal is marked

COMMERCIAL IN CONFIDENCE

BPNG will keep the proposal confidential to its staff and any contractors involved in this project.

### 7.4 Contract

Successful proposers will be expected to enter into a contract with BPNG. The supplier will be taken to agree or comply with all conditions of all parts of this document unless specified otherwise, giving reasons. Suppliers are responsible for taking all necessary steps to inform themselves of BPNG's requirements and terms and conditions when proposing a solution for this project. The proposal will form a schedule to this contract.

### 7.5 Costs of Responding

BPNG is not liable for any costs you may incur in responding to this Request for Proposal.

## **7.6 Applicable Law and Jurisdiction**

The laws of PNG shall govern this RFP. Each Respondent agrees to submit to the exclusive jurisdiction of the PNG courts in respect of any dispute concerning the RFP or the RFP process.

Any contract arising from acceptance of a proposal made in response to this RFP will be governed by the laws of PNG and subject to the exclusive jurisdiction of the PNG courts.

## Schedule: Requirements for the CBS

Use this section as a template for describing whether and how your solution can meet our requirements.

Please repeat each numbered requirement in your response and mark it

COMPLY or PARTIAL COMPLY or NON-COMPLY

then provide a detailed explanation of how your proposal meets our requirement so we can evaluate your level of compliance. If you cannot comply, please explain any steps you will take to achieve compliance.

## A Accounts

- A.1 The CBS must maintain all account balances in real time, not just update them overnight or periodically.
- A.2 The CBS must provide up-to-date account balances and lists of transactions on demand.
- A.3 The CBS should support multiple classes of accounts that have different rules and authorities, different queues for incoming payments and different areas of the bank responsible for their management.
- A.4 The CBS must provide account creation, maintenance and closure facilities for use by authorised BPNG officers.
- A.5 The CBS should provide account templates for use in account creation.
- A.6 When creating an account, the CBS must allocate an appropriate unused account number according to account type.
- A.7 The CBS must require at least a four-eyes check for account creation, maintenance and deletion.
- A.8 The CBS must offer loan accounts with various interest calculation types.
- A.9 The CBS must provide interest calculations accrued on daily balances in accounts.
- A.10 The CBS must credit or debit accrued interest to the relevant account or nominated other account at month end or such other frequency as required.
- A.11 The CBS must maintain a list of signatures for each account, as image files.
- A.12 The CBS should maintain a list of authorities (who can authorise what) for each account, as scanned documents.
- A.13 The CBS must offer club accounts that are owned by a group and have a defined list of signatories.
- A.14 The CBS must offer trust accounts that have a defined list of signatories that is different from the beneficial owner of the account.
- A.15 The CBS should identify and flag dormant accounts.
- A.16 The CBS should provide a mechanism to send unexpected credits or debits to specific accounts to a queue for review before action.

- A.17 The CBS must offer accounts in different currencies.
- A.18 The CBS should provide a mechanism to set up a new currency within itself by BPNG, i.e. not needing changes to the system by its supplier.
- A.19 The CBS must pass entries to BPNG's General Ledger (Oracle Financials) as transactions occur during the business day.
- A.20 The CBS must pass entries to BPNG's General Ledger at end of day summarising the day's transactions.

## B Government Customers

- B.1 The CBS must maintain lists of pending payments from government accounts whether by cheque or direct credit.
- B.2 The CBS must receive files listing government cheques that are being issued from government agencies and add these to the list of pending payments.
- B.3 The CBS must compare each government cheque presented for payment against the list of cheques issued and update the list accordingly. Unmatched or duplicate cheques must be placed in a queue for investigation, and dishonoured if they are not cleared through intervention by BPNG by the end of the dishonour period.
- B.4 The CBS must provide a mechanism to hold back government direct credit batches until the funds are available to pay them.
- B.5 The CBS must offer the ability to hold each government-issued direct credit for release by BPNG staff.
- B.6 The CBS must offer a secure portal for government customers to obtain up to date transaction details and balances in real time.
- B.7 The CBS should offer a sweep mechanism to automatically transfer some or all of the balance of an account to another account at specific time(s) of day, generating an audit trail, and subject to appropriate authorisation of the setup process.
- B.8 The CBS must offer a mechanism for authorised bank officers to execute transfers between government accounts on receipt of a request signed by the appropriate authorities for that account, with an audit trail of the transfer and a scanned copy of the request.
- B.9 The CBS must hold a list of authorities for each government account and validate any transfer request against them.
- B.10 The CBS must offer automated real-time transfers from a loan account (called the TAF for Temporary Advance Facility) to a specific operating account and vice versa, based on the balance in the operating account. There should be configurable rules for these transfers.
- B.11 The CBS must offer a real-time view of the government total net position to authorised users to include specific operating and drawing accounts and the TAF loan account.
- B.12 The CBS must provide real-time alerting on screen and by email to specific users at configurable thresholds of government position, e.g. when within 10% and 5% of its available funding.

- B.13 The CBS must support the validation and encashment of paymaster cheques. These are a type of government cheque that have to be presented at BPNG and encashed in specific denominations. A paymaster cheque may only be encashed by a specific individual, called the paymaster. Government customers provide a list of paymasters for their accounts. The CBS must maintain photographs of the paymasters for validation when encashing cheques.
- B.14 The CBS should provide specific government customers with real time remittance advices for incoming payments on revenue accounts.
- B.13 The CBS should offer foreign currency accounts for government entities.

## C Transactions

- C.1 The CBS must provide queues for incoming and outgoing payments and configurable rules to state how payments may move between queues or be sent to other banks or applied to accounts.
- C.2 The level of checking for manual interventions (i.e. two eyes, four eyes, six eyes) must be configurable by account type and amount involved.
- C.3 Options for queued payments should include release, redirection, rejection or editing, subject to appropriate levels of authority and verification.
- C.4 Access to queues and to the different actions that may be taken on them must be configurable according to the security level of the user.
- C.5 The CBS must recognise multiple branches within BPNG (currently there are two) and attribute transactions to them correctly.
- C.6 The CBS must support generation of a statement of payment or transfer in a form that can be emailed or stored in an external archive.
- C.7 The CBS should support the sale of numismatic products over the counter including tracking stock levels of each product.
- C.8 The CBS should alert relevant staff of unfamiliar traffic volumes or values on an account.
- C.9 The CBS must allow BPNG staff to manually generate payments from BPNG's own accounts (i.e. accounts payable) subject to authorisation and a four-eyes check.
- C.10 The CBS must provide a mechanism for inflows to some account types to be processed by specific units within BPNG.
- C.11 The CBS must provide a mechanism for payments from certain government accounts e.g. for Government loan repayments to be made by authorised BPNG staff subject to a four-eyes check and appropriate audit trails.
- C.12 The CBS must generate email notifications to specific BPNG addresses for incoming transactions into specific customer accounts.

## D Reconciliations

- D.1 The CBS must facilitate automatic reconciliation of accounts held at the end of the day within each of BPNG's branches.
- D.2 The CBS must support reconciliation using bank statements inputs either as online manual entry or upload of a file with flexible structure options which may be different for each other bank or bank account.
- D.3 The CBS must support automation of bank reconciliation based on combination of following filter parameters, but not limited to:
  - Account types
  - Transaction code (e.g. Inward clearing, Outward clearing, Service charges, Interest, etc.)
  - Bank/Branch code/MICR code
  - Cheque number
  - Date of transaction.
- D.4 The CBS must provide files of transactions to specific account holders in order to support automated reconciliation by government customers.
- D.5 The CBS should automate the reconciliation for cheque send and cheque receive accounts (high-traffic accounts) to verify against the reconciliation report from the general ledger.

## E Cheques

- E.1 The CBS must support the processing of cheques, including cheques drawn on BPNG accounts and presented at BPNG or other PNG banks and cheques drawn on other banks that are presented at BPNG for credit to a BPNG account.
- E.2 The CBS must drive a desktop cheque scanner directly, not through an external application.
- E.3 The CBS must support scanning single cheques or a batch of cheques through a feeder.
- E.4 The CBS should support the Magtek Excella cheque scanners currently in use at BPNG. Provide a list of scanners that are supported.
- E.5 The CBS must scan the front and back of each of a batch of cheques, also reading and recording the MICR information.
- E.6 The CBS should use optical character recognition to read typescript on cheques for matching against lists of cheques in the system.
- E.7 The CBS should confirm that the typescript and MICR information on a cheque agree.
- E.8 The CBS must offer the ability to cancel a cheque, i.e. stop payment of the cheque, at any point until the end of the dishonour period.
- E.9 The CBS must offer the ability to cancel a group of cheques, i.e. a contiguous range of cheque sequence numbers or all those drawn on a specific account.
- E.10 The CBS should validate the number of a government cheque against the issuing body, i.e. confirm that the cheque number is correct for the government department concerned.
- E.11 The CBS must validate each cheque against files of signatures and authorities held within itself.
- E.12 The CBS must track each cheque from printing through delivery to the customer, issuance by the customer and presentation by the payee to payment or dishonour.
- E.13 The CBS must place government cheques and direct credits that cannot be paid due to insufficient funds in a queue.
- E.14 The CBS must automate the process of clearing a government cheque including AML scanning so all validations can be performed with a single interaction.

- E.15 The CBS must automate the notification of outward and inward dishonours.
- E.16 The CBS should record the reason for dishonour.
- E.17 The CBS should manage a list of potential reasons for dishonour to be maintained by an authorised bank officer.
- E.18 For outward dishonours, the CBS should send the reason for dishonour with the returned cheque.
- E.19 For inward dishonours, the CBS should send a customer advice containing the cheque details and reason for dishonour.
- E.20 The CBS must provide a configurable dishonour period for cheques (current market practice is 2 working days). Cheques not dishonoured after this period are deemed to be cleared.
- E.21 PNG market practice is that cheques are settled between banks when they are presented, and the settlement is later reversed if the cheque is dishonoured. The CBS must be able to handle this.
- E.22 The CBS must place incoming funds for cheque batches into a suspense account until the cheque is cleared or dishonoured.

## F Interbank Payments

- F.1 The CBS must send and receive PGK payments to and from other PNG banks via KATS.
- F.2 The CBS should redirect or return incorrectly addressed incoming payments from other banks.
- F.3 The CBS must accept RTGS payments for credit to customer accounts.
- F.4 The CBS must accept incoming batches of direct credits for credit to customer accounts.
- F.5 The CBS must match the account description as well as account number on incoming interbank payments and place them a queue if not matched.
- F.6 The CBS must credit RTGS and direct credit receipts to customer accounts immediately provided they pass validation and AML checks.
- F.7 The CBS must accept incoming batches of cheques (with images) drawn on BPNG customer accounts and queue them for clearing.
- F.8 The CBS must accept incoming batches of dishonoured cheques drawn on other banks (“inward dishonours”).
- F.9 The CBS must send PGK payments to other PNG banks for credit to their customer accounts as real time gross settlement messages.
- F.10 The CBS must send batches of direct credits to other PNG banks for credit to their customer accounts.
- F.11 The CBS must send batches of cheques with images presented at BPNG and drawn on other banks for clearing at the drawing bank.
- F.12 The CBS must send batches of cheques drawn on BPNG, presented at other banks and dishonoured at BPNG (“outward dishonours”).
- F.13 The CBS must handle incoming returned interbank payments by re-crediting them to the source account and generating customer advice containing the reason for return.
- F.14 The CBS should receive PGK payments and send payments other PNG banks and financial institutions via REPS.

## **G Tellers**

Teller operations include cash disbursement, cash receipt, transfers between tellers, cash replenishment and cash return (withdrawal from circulation). As well as cash containers, Teller boxes each have a PC, a cheque scanner and a receipt printer.

- G.1** The CBS must support tellers with fast and simple-to-use screens.
- G.2** The CBS must offer screens for all teller operations with only the required fields visible.
- G.3** Teller transactions should not require the use of a mouse, although one may be used optionally if the teller prefers.
- G.4** The implementation process must allow BPNG to be involved in the design for teller screens, to achieve maximum usability.
- G.5** Teller operations must track the volume of cash on hand at each teller by currency and denomination.
- G.6** The CBS should alert tellers when their cash holdings go below a threshold, either in total or for specific denominations.
- G.7** Teller operations must be multi-currency.
- G.8** The CBS must support FX transactions in which cash is received in one currency and disbursed in another.
- G.9** The CBS should extract FX rates from Bloomberg at specified intervals.
- G.10** The CBS must allow the override of foreign currency buy / sell rates with manually input rates with secondary approval by an appropriate manager.
- G.11** Teller interactions with customers must generate a printed receipt slip.
- G.12** Teller operations must include the ability to rapidly scan a cheque from within the CBS application.
- G.13** The CBS must produce a teller summary for each teller on demand showing cash holdings, volumes in and out and other statistics.
- G.14** The CBS must pass an entry to general ledger at end of day for the total net amount of cash disbursed.
- G.15** The CBS should support scanning photo ID and storing the image against a transaction and/or account.

G.16 The CBS should only permit the chief teller to assign the transaction limit to the other tellers. If they exceed that limit, it should go to the respective chief teller for approval.

G.17 The CBS should only permit senior tellers to replenish the teller accounts.

## H Reporting

- H.1 The CBS must produce an agreed suite of reports at the end of day and the end of the month.
- H.2 All reports and enquiries must be able to be produced in a range formats e.g. PDF, HTML, Office, CSV, plain text.
- H.3 The CBS should be able to send reports (whether overnight or on-demand) through email to configured addresses.
- H.4 The CBS must contain a report writing function where users may define reports for later, possibly regular, production.
- H.5 The CBS must generate annual General Ledger reports, summaries and statements as and when required for the Accounts Payable Unit.
- H.6 The CBS must provide a facility to view cash position for each government account as and when required in a consolidated/hierarchical view:
- Operating Accounts (primarily the Government's main operating account called the WPA)
  - Drawing Accounts
  - Trust Accounts
  - Revenue Accounts (IRC and PNG Customs).
- H.7 The CBS must generate a monthly report of transactions above a threshold for cash deposits and cash withdrawals.
- H.8 The CBS must produce predefined reports such as cash flow from government accounts to commercial bank accounts and lists of dishonoured cheques by account with reasons for dishonour.
- H.9 The following is a list of reports required. Please confirm these can be generated by the CBS on demand and as part of the end of day.

TELLERS REPORTS		
No.	REPORT	PARTICULARS
I.	Teller report	Cash paid out, cash received, for each currency, for each teller subtotalled by branch. Annual, monthly or daily.

CLEARING ACCOUNTS UNIT REPORTS		
1.	Cheques Sent– (Other bank cheques scanned and sent out through KATS)	<ul style="list-style-type: none"> <li>- Individual banks or all banks</li> <li>- Daily/weekly/monthly</li> </ul>
2.	Inward Dishonours	<ul style="list-style-type: none"> <li>- Individual banks or all banks</li> </ul>
3.	Cheque Statistics	All cheques drawn on all the accounts in the CBS
4.	Account Maintenance	List of accounts by type highlighting those which are closed, blocked or dormant
GOVERNMENT ACCOUNTS UNIT REPORTS		
1.	Bank Statements for various Accounts	On demand or daily, weekly, fortnightly or monthly.
2.	Summary Reports for Accounts	By account type
3.	Outward Dishonours	By bank or all banks
4.	TAF Usage	By date
5.	Cheques Presented	<ul style="list-style-type: none"> <li>- Account Type</li> <li>- Account Range</li> <li>- Cheque issue date range</li> <li>- Cheque presented date range</li> <li>- Cheque number</li> </ul>
6.	Unpresented Cheques (Cheque Float)	<ul style="list-style-type: none"> <li>- Account type</li> <li>- Account range</li> <li>- Cheques issued from range</li> </ul>
7.	Outward Dishonours	<ul style="list-style-type: none"> <li>- Customer</li> <li>- Dishonour type</li> <li>- Bank</li> <li>- Payee</li> </ul>
8.	Account Monitoring	<ul style="list-style-type: none"> <li>- Date Range</li> <li>- Amount</li> <li>- Payment Type</li> </ul>

9.	Payments by Payee	When verifying payments to a particular provider
10.	Cashflow from government accounts to each commercial bank	Volume and value by originating government customer

## I AML/CFT, Oversight and Audit

- I.1 The CBS must support comparing payments against AML/CFT lists and moving them to an investigation queue if matched.
- I.2 The CBS must support manual maintenance of local AML/CFT lists.
- I.3 The CBS should support automated ingestion of AML/CFT lists from various sources.
- I.4 The CBS must support the automated generation and transmission of threshold transaction reports (TTRs) for all qualifying payments that exceed a pre-defined amount.
- I.5 The CBS must support the automated generation and transmission of suspicious transaction reports (STRs) for all qualifying transactions.
- I.6 The CBS should provide a threshold for reporting TTRs and STRs that is configurable by account type.
- I.7 The CBS should have e-KYC (electronic know your customer) tools for rapid identity verification and fraud detection.
- I.8 The CBS must provide tailored dashboards for BPNG's Oversight function or offer the ability to export all its data regularly into a data warehouse like Cognos for external analysis and scrutiny.
- I.9 The CBS must generate an audit trail including entries for:
  - Transaction modified/entered by username and timestamp
  - Transaction approved by username and timestamp
  - Transaction posted to GL confirmation and timestamp
  - Transaction timestamp when received from interfaced systems
  - Image files from cheques (may be reduced).

## J Staff Accounts

- J.1 The CBS must support staff chequing and savings accounts.
- J.2 The CBS must support staff loan accounts for various purposes, subject to approval by an appropriate officer.
- J.3 The CBS must offer a portal for staff use for their own accounts.
- J.4 The portal must allow for up to date balances and statements to be obtained and for payments to be made to previously nominated accounts which may be external to BPNG.
- J.5 The CBS should allow automatic payments (also called standing orders) to be set up in the portal and paid regularly to nominated accounts.
- J.6 The CBS must dishonour any staff cheques that cannot be paid due to insufficient funds. When dishonouring staff cheques the CBS should provide an alert email to a nominated email account (as well as the staff member's email) and log the event for reporting.
- J.7 The CBS should produce a regular report of cheques drawn by staff that are dishonoured with the reason for dishonour and any direct credits orders by staff that were unable to be filled, with reasons.
- J.8 The CBS should contain staff photos for validation of in-person transactions.
- J.9 The CBS should support the configurable automatic emailing of staff on incoming payments to their accounts.
- J.10 The CBS must allow direct entry by authorised officers of payments by staff for banking services such as telegraphic transfer charges.
- J.11 The CBS must allow direct entry by authorised officers of payments for staff that are not processed in the payroll such as leave encashment.

## K Security

- K.1 The CBS must integrate with Active Directory for the management of access and authorisation.
- K.2 The CBS must require multifactor authentication, e.g. through the implementation of mechanisms such as a one-time-password, security questions or hard tokens in addition to Active Directory.
- K.3 The CBS must offer a well-defined and robust role-based access control system incorporating the principle of least privilege.
- K.4 The CBS must log all access including physical device identification, user identification and the time of each access in order to provide a clear audit trail for review in case of accidental or deliberate violation of security controls.
- K.5 Workstations logged into the CBS must be logged off automatically if idle for more than a specified period that can depend on the class of user.
- K.6 The CBS must offer appropriate authentication mechanisms for its users. This must include a mechanism to control password complexity, expiry, lockout and old password threshold, selected by the user.
- K.7 The CBS must enforce encryption of data in transit between its various components, on system interfaces, to workstations and, where relevant, over the Internet. The expected minimum cryptographic level is TLS1.2.
- K.8 The CBS must automatically disable user accounts if they remain unused for 90 days and temporary block the relevant userIDs. The CBS should warn users by email before doing this.
- K.9 The CBS must support a hierarchical user structure, such that at each participant and also in BPNG's operational area there can be a local administrator with certain additional rights, e.g. for password reset, for users in that area only.
- K.10 If the CBS contains user passwords there must be salted and hashed using SHA-256.

## L Interfaces

The current and proposed systems interfacing with BSS (to be replaced by CBS) are listed below:

Current System	Location
KATS (RTGS and ACH)	Internal
Oracle Financials	Internal
Central Securities Depository	Internal
Asycuda	Customs Service
Ascender Payroll	Internal
IFMS (Govt finance system)	Dept of Finance
Reserves Management	Internal

Proposed System	Location
Sigtas	IRC (Tax Dept)
Vault Management System	Internal
CBO Savings & Loan	CBO S&L
Govt Payroll (Ascender)	Dept of Finance
Bloomberg for FX rates	Bloomberg
REPS (instant retail payments)	Internal

- L.1 The CBS must send and receive payments to and from KATS in real time through a message queue using either MT-style or MX-style messaging.
- L.2 The CBS must support MT and MX style payments messages simultaneously.
- L.3 The CBS must be able to be interfaced with other systems using MT- and MX-style messaging.
- L.4 Provide a list of standard API's or message formats available for interfacing with the system.

- L.5 The CBS must provide a mechanism for other external systems to enter payments, e.g. payroll, government EFTs.
- L.6 The CBS must be able to interface with BPNG's Exchange server to generate emails containing alerts, advices or reports.
- L.7 CBS must offer integration mechanisms that can be used for 3rd party applications beyond the scope of this RFP as and when required by the Bank in the future, e.g. Warehousing, Data Mining and CRM applications.

## M Non-Functional Requirements

- M.1 The CBS should use BPNG's platform of AIX on IBM p-Series hosts virtualised with PowerVM with database services provided by Oracle 19c on Exadata hardware. Please list any alternative platforms that are supported.
- M.2 CBS interfaces must be able to use various transport mechanisms including IBM Message Queue, reading and writing flat files in shared folders and reading and writing rows in interface tables in an Oracle database.
- M.3 The CBS must be provided with a data dictionary so that its contents may be extracted for external analysis.
- M.4 The CBS must be able to be configured in a resilient arrangement where there is minimal data loss if, say, the primary data centre is lost (note that BPNG has primary and secondary data centres). Please provide sample configurations.
- M.5 The CBS source code must be lodged with an agreed escrow agent and kept up to date by the supplier. BPNG will have access to this if the supplier becomes unable to fulfil its obligations to maintain the system.
- M.6 The CBS must support external links for access by specific government customers.
- M.7 The CBS must support interconnections between our branches: Port Moresby and Lae.