



# **CENTRAL BANK OF NIGERIA, ABUJA**

## **REQUEST FOR PROPOSAL (RFP)** **TO DEPLOY A REAL-TIME GROSS SETTLEMENT ( RTGS) SOLUTION FOR THE** **PAYMENT SYSTEMS INFRASTRUCTURE IN NIGERIA**

### **1.0 Introduction**

The Central Bank of Nigeria (CBN) being the apex Bank of the country occupies a central position in the economic and social development of Nigeria. In order to fulfill its statutory mandate of ensuring a stable financial system, and as part of the Payments System Vision 2020, the CBN is desirous of implementing a new Real Time Gross Settlement (RTGS) system that is of international standard. This is intended for large-value and time critical payments, for the inter-bank and customers' transactions as well as meeting the needs of a modern payments system.

The RTGS system required shall be a proven and reliable solution capable of processing and settling transactions on a real time and gross basis. It shall be robust in capacity and flexible in functionalities. It shall support various streams of payments including net settlement positions from various netting schemes, securities and foreign exchange settlement transactions and shall be seamlessly integrated into the banking and the enterprise resource planning applications of the CBN.

Implementing a world-class RTGS infrastructure will be critical for Nigeria as it seeks to increase its influence on financial markets within WAMZ, Africa region and beyond since the RTGS system is the mechanism for settlement of all other payments, foreign exchange and securities settlement systems.

This is to be a replacement of the current system and its transition must be seamless and transparent to the users.

### **2.0 Scope of Work and Specification**

#### **2.1 Transfer Processing Requirements**

All transfers will clear and settle simultaneously in line with accepted RTGS processing. Participants will hold settlement accounts with CBN. Transfer shall be settled only if the sending counterparty has sufficient funds in its settlement account (defined by a 'net debit cap' which is a fully collateralized credit line on the settlement account)

## 2.1.1 Transfer Types

### 2.1.1.1 Inter-Bank Transfers

Inter-Bank transfers are credit push transactions initiated by the sending counter-party, usually a financial institution with a settlement account in the central bank, to debit its account while simultaneously crediting the settlement account of the receiving counterparty. The Inter-Bank funds transfer may be used to effect or support the financial settlement of financial instruments such as money market, capital market, and foreign exchange. The inter-bank funds transfer shall have, at the minimum, the following fields:

- Date
- Time
- Amount
- Currency
- Sending Counterparty
- Receiving Counterparty
- Purpose e.g. clean placement, collateralized placement, FX, interest payment, etc
- Rate
- Collateral
- Narration
- Sending Counterparty Reference
- Unique Transfer ID
- Transaction status
- Data Entry
- Name of Originator (Inputter)
- Name of Approving Officer

### 2.1.1.2 Third Party Transfers,

The Third Party Transfer Module shall function as the inter-bank funds transfer. It shall be for the execution of transfer orders of participating institutions' customers. It shall have the following additional input fields:

- Sending Customer
- Sending Customer's Address
- Sending Customer's Reference
- Receiving Customer
- Receiving Customer's Address
- Receiving Customer's Account Number

#### 2.1.1.3 Debit Funds Transfer

This module shall be available for the exclusive use of the Central Bank of Nigeria or approved clearing infrastructure (such as CSCS or NACS). It shall be a credit pull module with which the Central Bank of Nigeria as a sending counterparty shall debit the account of the receiving counterparty. The module shall allow multiple transaction entry and approval for single or various counterparties. The input fields shall, at a minimum, include the following:

- Date
- Time
- Amount
- Sending Counterparty
- Receiving Counterparty
- Purpose e.g. fee, penalties, NNPC, FIRS, NCS remittances
- Narration
- Transaction status
- Data Entry
- Name of Approving Officer

The application shall have provision for automatic data upload into the above stated fields from the banking application of the user and manual data entry capability. The system shall also send confirmation of successful settlement to both sending and receiving counterparties.

#### 2.1.1.4 Net Settlement Schemes-Cheques/ACH, E-Payment Switching etc

The RTGS shall support the settlement of net settlement obligations arising from various netting scheme including cheques/ACH, electronic switches and the Central Securities Clearing Systems (CSCS) net positions. The system shall be capable of settling various net settlement sessions during the operating hours of the RTGS system.

#### 2.1.1.5 Delivery Versus Payment for Securities Trade Settlement

The application shall be seamlessly integrated into various securities depository –CBN or CSCS and be capable of exchanging value for securities simultaneously on a continuous basis and on transaction by transaction basis.

#### 2.1.1.6 Payments Versus Payments for Foreign Exchange Trade Settlement

The application shall be seamlessly capable of exchanging Naira for other currencies simultaneously over the Naira account and Foreign exchange accounts of transacting parties on a real time gross basis.

## **2.1.2 Multiple Currency**

The system shall support settlement of transactions in Naira and key international currencies including the planned WAMZ monetary unit.

## **2.1.3 Queuing Mechanism**

In the event of insufficient balance, transfers will be queued by the application. It shall however manage the queue through the following principles. The control of queuing shall be managed either by participating banks (for their items only) or centrally by the CBN (for all items regardless of the bank)

### **2.1.3.1 Priority + FIFO**

The system shall have prioritization scale with which participants may attach a specific priority level to each transfer request based on which transfers on queue shall be settled in addition to the first in first out queue management principle.

### **2.1.3.2 Bypass FIFO/Pre-emptive Basis**

The application shall offer the user the ability to request that the next executable transfer instruction to the un-executable transfer instruction which is ahead on the queue be processed. That is, the FIFO principle is by-passed.

### **2.1.3.3 Re-Ordering**

The application shall provide a reordering mechanism for the user to change the queue order. CBN should be able to re-order transactions on the queue.

### **2.1.3.4 Queue Cancellation**

The application shall also give the user the option to cancel its queued transactions. Authorized staff of the Central Bank of Nigeria shall be able to cancel or re-order the queue of individual participating institution upon request from the participant or when needed. In addition, the central Bank of Nigeria shall have the option to cancel all queued transaction at the end of the operating hour.

### **2.1.3.5 Gridlock Resolution**

Gridlock refers to a situation where the inability of a payment transfer to be settled as a result of inadequate funds in the paying bank's settlement account causes a blockage of a

substantial number of settlements of other participant banks. The system should be able to detect such occurrences and proffer the best algorithmic path for resolution.

#### **2.1.4 Validation of On-line Input**

The system should be able to validate on-line input data. The validation must include checks for allowable formats and values and allow a reference against user authorization codes. Related fields must be checked before updating. Errors must be identified clearly to enable users to correct input data immediately

#### **2.1.5 Notification**

The system must notify the sender of each message at the time of sending that the message is provisional until it has been accepted and settled. This notification will be sent via the RTGS extranet to the sender

#### **2.1.6 Fund Return Request**

There should be provision for 'fund return request'

#### **2.1.7 Validation**

The system must incorporate a process for the authentication and validation of messages

#### **2.1.8 Account Number**

The account number should support a maximum length of 34 alpha-numeric characters

### **2.2 Cut-Off Time Management**

Predefined start of business and cut-off times are to be automatically controlled within the system, but with the ability for manual/automated override by CBN to support cut-off-time extensions.

It is expected that there will be different cut-off times for third party payments versus inter-bank settlements such that after-hours movements between banks is allowed for position management.

### **2.3 Position and Collateral Management**

### 2.3.1 Intraday Facility

The application shall provide the functionality for providing an intraday liquidity facility against collaterals to participating institutions. The collaterals for the facility shall be topped with a margin. The facility shall be liquidated on or before the close of the RTGS operating hours and the collaterals returned to the participant. The module for the intraday facility shall include an option for charging for the facility. The intraday facility request module shall be initiated and approved by the participating bank while the CBN shall have the privilege to either grant or refuse the applications.

Repurchase facility module for end of day account balancing shall also be provided.

### 2.3.2 Balances Sweeping

The system shall have the functionality for automatic sweeping of balances between participating institutions' settlement accounts on RTGS and their current accounts on CBN banking application. It shall also have the option to interface directly with the CBN banking application and update on real time basis the mirror settlement account of the participants. This should be parameterized to allow for flexibility of CBN's choice at any given time.

## 2.4 User Interface and Management

A user interface is required for two basic functions:

- Operational Control of the RTGS System (for functions such as operating the CIFTs, queue management, position and collateral management, reporting and audit trail)
- Input and Approval of payment instructions

The above functions must be supported through a web-based interface and subject to suitable user access controls.

Input of payment instructions can additionally be supported through:

- upload of a file created on an external system in a pre-agreed format. Transactions created through this route may require on-line approval
- input of payment instructions in the member bank system and transmission across the SWIFT network for processing by the RTGS system. No further validation of these transactions will be required once submitted to the SWIFT network.

#### 2.4.1 Channel

The on-line services should be accessible through a secure internet connection or via the SWIFTNet InterAct or SWIFTNet Browse services.

#### 2.4.2 Value Dates

All transactions should be settled on specified value dates.

The system must accept current and future value dated transfer instructions for processing. Transfer instructions should be transmitted to the settlement engine at the Central bank when the value date is effective.

For current value date transfer instructions that fail to be settled by the end of the day, the system must provide an option either to cancel the instruction or to carry them over the next value date.

#### 2.4.3 Multiple User Sign-On

The application should support the simultaneous use of the system by many data entry and approving officers of each participating bank.

#### 2.4.4 User Friendly

The application shall be menu driven and navigation shall be with ease and without delay.

#### 2.4.5 Language

The languages supported by the system for all computer inquiries, reports and screens shall include both English and French.

#### 2.4.6 Approval/ Authentication

The system shall operate a 'maker/checker' philosophy for all key functions. For payment initiation, multiple levels of transaction verification and authorization shall be supported, configurable for each participating entity.

#### 2.4.7 Billing

Billing shall include, transaction fees, periodic charges (e.g. annual maintenance fee), operating hours extension request fees and penalties. The billing module shall allow the option for CBN to define either flat charges, tiered charges or percentage charges.

## 2.5 Reporting

The reporting functionality shall be both standardized and user-defined based. i.e. the user shall have the option of either querying the database to produce a standard report or obtaining reports or inquiries based on specific criteria which the user defines. The database will be robust and the user should be able to define the required field and presentation format.

### 2.5.1 Inquiries

The user shall be able to make prompt inquiries with ease. Inquiries should cover a wide range of data with regards to every category or transaction types. The application should provide option for user defined inquiries. Inquiries shall not be limited to but shall include, online account statement, balance inquiries etc

### 2.5.2 Transaction Reports

The transaction reports should be both in standardized and user defined forms.

### 2.5.3 Audit Trail

The system should have all necessary logs, inquiries and reports that would aid all forms of audit investigation-system or transactional audit inquiries.

### 2.5.4 Reconciliation

Each participant should be provided with end-of day report, in printable and electronic form, containing the details of all transactions on the system for the day. In addition, the system should have the capacity to check all its interface transactions for completeness before end of day processes.

### 2.5.5 Reporting Database

Capable of maintaining statistical database with query and reporting facilities

## 2.6 Archiving

The system must provide comprehensive archiving and retrieval functions, allowing for on-line retrieval of historic transactions for a minimum of 13 months, and unlimited offline storage through permanent media (preferably secured 'write-once' media)

## 2.7 Technical

The detailed technical requirement is a subject of another document which shall take cognizance of the following and others issues that will be subsequently identified.

- Network and connectivity method using both SWIFT and CBN extranet gateway
- Supports V and Y messaging topology
- SWIFT Messaging Format
- Robust Database Capacity
- Seamless Integration to ERP Application, Banking Application, Central Securities Clearing System and/or Securities Depository and the Regional RTGS and securities settlement system.
- It must be Service Oriented Architecture (SOA) compliant.
- 100% system availability during agreed hours of operation (typically 7:00 a.m. until 5:00 p.m. local time) and subsequent end of day processing.
- Web-Based for on-line functions
- The on-line processes shall be secure, not penetrable by hackers and should have in-built non-repudiation mechanism. The security mechanism should ensure system integrity.
- Data storage shall be secured against accidental or malicious unauthorised alterations or loss.
- System maintenance and upgrade shall be on continuous basis
- Parameter-driven - processing characteristics that are configurable hence no need for re-programming.
- Platform-independent so as to work on a range of hardware
- Scalable and modular- can be upgraded from the basic functionality model to a fully integrated system with required modules as need arises
- Participants should be able to manage their users on their system based on agreed user management policy.
- There should be a provision for 'fund return request'

- Some participants (i.e. FBN, and other banks with many branches) had wanted bank branch code to be part of the information to be captured on the data entry screen.
- The transaction fields should include name of data entry and approving officers, transaction status,
- All unsettled transactions (transactions on queue) each day, must be cancelled by the end of day process and the participant must key in these transactions afresh the next day.
- The system must incorporate a process for the authentication and validation of messages.
- There should be a provision for broadcast (sending out messages to all participants on the system).
- The audit trail log should include log on status of each participant.
- there must be a monitor for monitoring logged on participants
- The system should display meaningful messages.
- Messages monitor must be available for monitoring transactions of participants on line real time.
- there must exist table maintenance function (for updated participant information, holiday table, system parameters, etc)

## 2.8 Documentation, Testing, Training and Support

There shall be adequate testing platform for all the functionalities of the RTGS application including test loading for system stress capacity.

Adequate user operational manual and technical documents are fundamentally important. Training on the applications shall be germane for the performance of the requirements above. Therefore, training shall be provided, in the operation of the system, to the Central Bank of Nigeria as well as the other participants.

## 2.9 Other items

The system's physical infrastructure should fit into the CBN infrastructural framework

## 2.10 Operational Reliability and Contingency Arrangements

- No single point of failure
- Full back-up system on-site (hot standby)
- Off-site back-up (warm standby)
- Disaster recovery plan and back-up arrangements

## 2.11 Non-Working Days

Provision should be available for documenting non-working days, including public holidays (either pre-set dates or in the morning of a working day).

## 2.12 Capacity and performance

Online availability will be 100%

System capacity will be adequate for storage, processing volumes and speed

- (Need to define message capacity in terms of transactions per day, peak throughput)
- Need to define system response time (application response time and network lag)
- System maintenance and upgrades should be on an ongoing basis

## 2.13 The deliverables expected from the project are:

- Software license for the proposed RTGS system
- Technical Interface Specification
- Documentation of Integration framework, strategy and road map based on the proposed RTGS system
- Pilot and full implementation of proposed RTGS system and integrated core business applications
- Project Management and Quality Assurance
- Training on standards, tools, configuration, management and operation of the RTGS System.
- Project Documentation to assist in knowledge transfer and lessons learned on

the Project

#### **2.14 General Requirement**

The proposal from interested and competent solution providers should, as a minimum address the following minimum requirements:

- The RTGS solution shall satisfy the Bank of International Settlement's (BIS) Committee of Payments and Settlement System's (CPSS) Core Principles for Systemically Important Payment Systems standards.
- Comprehensive company profile including registered address, functional contact email address, GSM phone number(s), facsimile number(s).
- Verifiable evidence of similar jobs successfully executed in the past.
- A critical requirement is that **any solution must have been implemented in at least 5 countries preferably in Africa.**
- Company's legal status; copies of certificate of Registration and certified true copy of Articles of Association.
- Company's general organization structure.
- Evidence of local/international registration/certification with any professional body.
- Provide last three (3) years certified audited accounts records duly stamped by a registered accounting firm and current tax clearance certificate.
- Curriculum vitae of principal officers stating qualifications, experiences and attaching copies of relevant certifications.
- Addresses of five (5) clients that can be contacted for information and reference.

#### **2.15 Other Specific Requirements**

- The vendor and their partners MUST meet the Business and Technical Requirements specification of the proposed RTGS 100%
- The vendor and their partners should have a track record in deploying RTGS solutions in the financial sector.
- Proposal should clearly show the estimated time for design, deployment, training and support.
- It should clearly state the required time, following the issue of a contract, for full deployment of this system.
- The operations of the RTGS would be guided by a robust developed Rules and Regulations.

#### **3.0 Submission**

The Central Bank of Nigeria now invites sealed RFP from interested and competent

vendors for the supply and implementation of an RTGS system.

The detailed requirements on the subject of the RFP are as specified in this document.

All submissions and enquiries should be addressed to:

The Secretary,  
Major Contracts Tenders Committee  
2<sup>nd</sup> Floor, Wing "C",  
Procurement & Support Services Department  
Central Bank of Nigeria  
Central Business Area, Abuja, Nigeria

### **3.1 Closing Date**

All submissions must be received at the above address six weeks from the date of this publication.

### **4.0 Important Notice**

- Nothing in the advert shall be construed to be a commitment on the part of the CBN.
- Companies would be assessed solely on submission.
- The successful company(s) will be notified formally, published and posted on the CBN website ([www.cenbank.org](http://www.cenbank.org))

Signed:  
**MANAGEMENT**