Bank of Mauritius

Replacement of the Mauritius Credit Information Bureau (MCIB) system

Date: 15 January 2021

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1. Bid Information Sheet

Table 1:

Name of Bid	Replacement of the Mauritius Credit Information Bureau system
Name & Address of Issuer	Bank of Mauritius Sir William Newton Street, Port Louis, Mauritius.
Addressee	Chairperson – Tender Committee Bank of Mauritius Sir William Newton Street Port Louis - 11328 Mauritius Email: tender.committee@bom.mu
Date of commencement of RFP process	15.01.2021
Closing date of Bid	19.03.2021
Validity Period	180 days
e-Tendering	Not Allowed
Bid currency	USD (United States Dollar)
Bid language	English
Deadline for sending queries	05.02.2021
Sharing of responses to queries	19.02.2021
Presentation / Proof Of Concept (POC) of proposed solution	Within 8 weeks from bid closing date

2. Introduction

The Bank of Mauritius, hereinafter referred to as "Bank" or "BOM", is the Central Bank of the Republic of Mauritius and is established under Section 52 of the Bank of Mauritius Act 2004 (as amended). The Bank is, inter alia, the regulatory authority for financial institutions in Mauritius as defined under the Banking Act, 2004 including banks, non-bank deposit taking institutions and cash dealers, and relevant licensees under the National Payment Systems Act 2018.

The Bank's registered office, hereinafter referred to as "Head Office" or "HO", is in Port Louis, Mauritius and has a Regional office, hereinafter referred to as "Branch", in Rodrigues Island, situated some 600 kilometres off the east north-east coast of Mauritius. Rodrigues is currently connected by satellite link and sub-marine cables. The Bank also operates a Disaster Recovery (DR) site some 15 kilometres away from its HO near the central part of Mauritius.

3. Purpose of RFP

The purpose of this Request for Proposal (RFP) is to provide applicants with the technical requirements for the preparation and submission of bids towards the supply, installation, implementation, customization, interfacing, training and support services for a turn-key solution for the replacement of the Mauritius Credit Information Bureau (**MCIB)** system, also referred to as the "**MCIB** Project". The RFP also lists the instructions to bidders, the evaluation criteria as well as the rules for submitting the bids.

This RFP document is not a recommendation, offer or invitation to enter into a contract, agreement or other arrangement in respect of the services. The provision of the services is subject to observance of selection process and appropriate documentation being agreed between the Bank and any successful bidder after completion of the selection process as detailed under Section 13 "Evaluation Methodology".

The Bank may cancel the RFP exercise of the **MCIB** Project at any stage, without citing any reason, therefor, and does not commit to any prospect or opportunity for the participating bidders who will respond to this RFP.

The Bank reserves the right to accept or reject any or all of bid(s) received in full or part thereof, as well as not to proceed with the bidding process at any time or stage, without notice, liability or the need to assign any reasons whatsoever. The Bank's decision in this regard shall be final.

Where the context so requires, the use of the masculine gender shall include the feminine and/or neuter genders and the singular shall include the plural, and vice versa.

4. Objectives of the Project

Background

1. In terms of section 52 of the Bank of Mauritius Act 2004, the Bank may, for the purpose of ensuring the operation of a sound credit information system in, and maintaining the stability and soundness of the financial system of, Mauritius, establish a Credit Information Bureau and require, on such terms and conditions as it may determine, any institution offering credit, including leasing facilities and hire purchase or, any crowd-lending platform or any utility body, to furnish at such time and in such manner such credit information or such other information as it may require for the purpose of –

   (a) maintaining a database on recipients of credit facilities and guarantors and such other information as may reasonably assist in ensuring the soundness of the credit information system;

   (b) collecting, consolidating and collating trade, credit and financial information on recipients of credit facilities, whether fund-based or non-fund based;

   (c) storing the information so collected;

   (d) disclosing, or allowing access, to such institutions as it may approve, the information so collected, subject to such conditions as it may determine; and

   (e) assisting the Bank in the discharge of its functions under section 5(1) of the Bank of Mauritius Act.

2. The MCIB, wholly owned by the Bank and operated from within its premises, is the only credit information bureau operating in Mauritius. It started operating in December 2005. The current MCIB application, developed in-house by the Bank, was initially designed to accommodate only banks as participants. However, with a view to providing a more comprehensive overview on borrowers' and guarantors' indebtedness, the Bank has been steadily extending the coverage of the MCIB to include credit information from other sectors and utility bodies. The MCIB has, currently, 47 participants namely the Bank of Mauritius, 17 commercial banks, 9 leasing companies, 9 insurance companies, 6 non-bank financial instructions, 1 micro-finance company and 4 utility bodies. The participants are required to adhere to the terms and conditions of the MCIB which may be consulted at
https://www.bom.mu/financial-stability/supervision/mcib/about-mcib

3. The MCIB is presently operating on a reciprocity basis and allowing retrieval of information from its database only by those institutions which provide it with credit information. The law also makes provision for the MCIB to impart information to:-

a) such bodies as it considers appropriate for credit rating purposes;
b) any public sector agency or law enforcement agency to enable the agency to discharge, or assist it in discharging, any of its functions; or
c) such institutions and for such purpose as it may determine, where the person from whom the information is being sought has given his written consent for the information to be disclosed to the institution.

The current workflow of the existing system is as follows:

1. Participants submit credit information on a daily basis to the existing MCIB system, either through manual input of credit information on a Web Interface or, more commonly, through the upload of well-formatted XML files containing the information about new credit facilities as well as those of existing credit facilities whose information have to be updated.
2. Each XML file is processed by the MCIB system on a FIFO basis. Processing has two stages:
   (1) validation of the contents of the file for syntactical correctness, correctness of each data element and compliance of credit record with MCIB rules e.g. a record for a foreigner should necessarily contain the country of origin. Successfully processed records are saved in the database.

   (2) creation of an acknowledgement file containing details such as a unique_ref_id generated by the MCIB system for new credit facilities, rejection reasons for unsuccessfully processed records. The acknowledgement files can be downloaded by participants.

3. Participants can, upon obtaining consent from the customer, obtain a Credit Profile Report (CPR) from the MCIB system. It lists the credit facilities which the customer has contracted with participants detailing information such as original amount disbursed, date of disbursement, outstanding amounts, collaterals, etc. It also shows utility payments and arrears in payments of existing credit facilities. The template of the CPR may be downloaded from the following link: https://www.bom.mu/financial-stability/supervision/mcib/about-mcib

The MCIB collects information on both:-

1. **positive information**: information, other than negative information, in relation to all credit facilities made available by any institution offering credit to a customer, both fund based and non-fund based and any claim from utility bodies or any other Participant;
2. **negative information**: information in relation to credit facilities with arrears, suit filed accounts, bankruptcy, insolvency compromise settlements or overdue payments in favour of any participant.

Negative information currently collected by the MCIB comprises only overdue payments.

Expectations of new system:

The new system shall collect further negative information, like:

	Definition	Source	Mechanism
Checking accounts (bounced cheques): definitions …		Participants	Push by participants
Insolvency compromise settlements…		Participants	Push by participants
MRA (tax payment)		MRA	Pull
Suit filed accounts		Judiciary	Pull
Bankruptcy		Judiciary	Pull

Credit Scoring Services Agency

The Bank is mandated under Section 52B of the Bank of Mauritius Act to establish a Credit Scoring Services Agency for the purpose of providing credit scores, i.e. an assessment of the creditworthiness of an applicant for credit.

The new MCIB system will also integrate the Credit Scoring Services Agency. The new MCIB system should, accordingly, also provide a Credit Scoring feature which should calculate a numerical credit score for a given customer. The credit score may be based on the following criteria relating to the applicant for credit:

- Amount owed
- Credit history
- Type of credit used
- New credit
- Payment history

The credit score will be calculated, as far as possible, from existing data about the customer available in the MCIB system.

The credit score may be part of the Credit Profile Report (CPR) or available independently, e.g. through API/WebService.

Credit Scoring Model

An example of a model with weightages is given below. This model is only indicative and the bidder may propose an alternative.
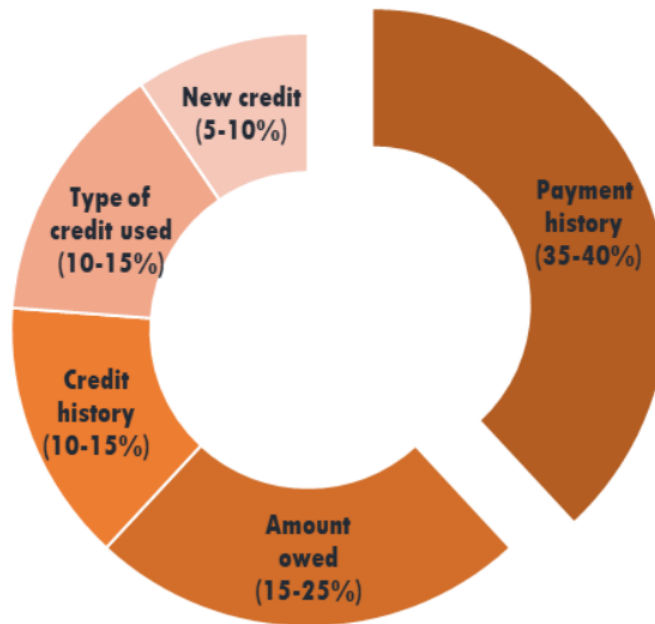
Payment History	Repayment pattern of credit facilities
Amount Owed	No of credit facilities and amount owed.
Credit History	How long credit facilities are held (Credit card, loan, overdraft, etc)
Type of credit used	Credit mix (Credit card, loan, overdraft, etc)
New Credit	Have new credit facilities been approved

Other possible criteria

- Credit utilisation,
- Credit available,
- No. of credit applications/enquiries.

Integration with third party applications and services

Seamless integration with external systems both through its API/WebService exposed to participants and using API/WebServices of third party systems) should be achieved by the system.

A Catalog of services available through API/WebServices to participants. A few examples of services are:

- CPR
- Bulk data download
- Data Submission

- Analytical reports, e.g. aggregates of credit, sectorwise distribution of credit, trend analysis among others

The system may have to interface with external systems or linked registries e.g.:

- InfoHighway (Judiciary, Mauritius Revenue Authority (MRA), Central Population Database (CPD), Corporate and Business Registration Department (CBRD), among others). Please refer to Section 4.1 for further details.

Performance requirements

Some statistics of the existing system are given below.

Total Number of records processed per day: 700,000

Total number of records from Utilities processed once monthly: 700,000

Records processed per minute: 365

Reports drawn by participants per day: 2925

The expected throughput for the new system for the next five years:

Total Number of records processed per day: 2,000,000

Total number of records from Utilities processed monthly: 1,000,000

Records processed per minute: 1,000

Reports drawn by participants per day: 5,000
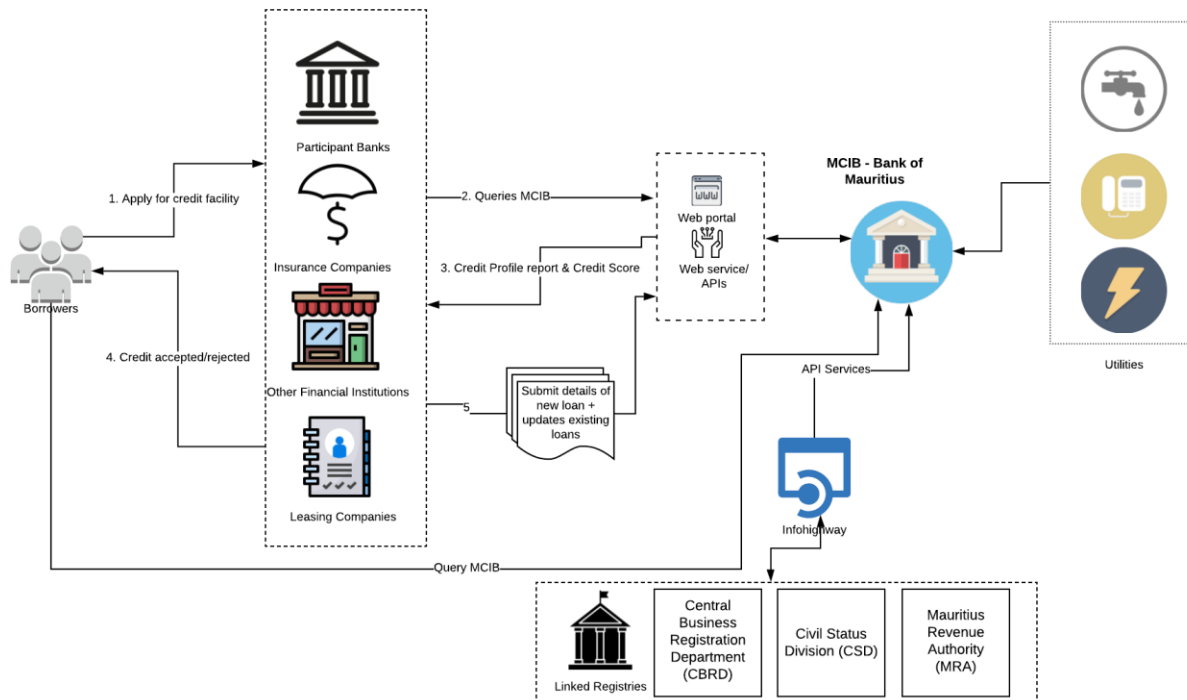
4.1 InfoHighway

The InfoHighway project (https://ih.govmu.org) is a Government of Mauritius sponsored project which aims at promoting data exchange between government agencies. Data available in the various government agencies (referred to as Publishers) who wish to share their data, can be made available to other government agencies (referred to as Subscribers) who will consume the data. Some of the Publishers are:

The service is available within a secure private network and is not available publicly or on the Internet.

The data can be made available using various channels available when an agency formally registers as a Subscriber. They include:

(A)   The InfoHighway portal,

(B)   Text file deposited periodically on an sftp server,

(C)   Web services accessible from the Subscriber's applications,

(D)   InfoSync, that is bulk data transferred to the Subscriber.

Some data of interest for the MCIB Project are:

CPD   National ID of Mauritian residents and their corresponding name, marital status, gender, Address, photograph.

CBRD   Company details and shareholders

5. Business Requirement Specifications

The detailed Functional Requirements Specification (FRS) is provided in Annexure II of this document. They describe the main features expected of the new system.

All the requirements listed in Annexure II will have to be met by the bidder. The bidder shall respond to the FRS by filling the Excel sheet provided in Annexure II and should indicate using the drop-down list, whether the functions:

a) are standard in the package (Yes, Standard Feature)
b) can be achieved by customization (Yes, Requires Customisation)
c) are not available (No, feature not available)

The bidder is expected to describe in details the solution proposed. In case of customisation, the bidder should also include the cost thereof in the financial proposal. The bidder should also give an indication of the effort required, in man-days, for customisation.

The successful bidder shall, before starting the implementation of the solution, prepare a detailed Business and Software Requirement Specifications (BSRS) document based on the functional requirements specified in the FRS document and its own assessment from the business functions, and also in consultation with the Bank.

The successful bidder would need to obtain a final sign-off from the Bank on the requirements gathered before proceeding with the design and development of the solution.

It must be noted that:

- The requirements and specifications provided as part of this RFP are intended to describe salient aspects of the bidder's scope of work and provide sufficient understanding to the bidders for preparing proposals and should not be considered as exhaustive. The proposed solution will have to be detailed further as part of BSRS preparation.
- Certain changes in the ecosystem might take place due to new directives from Government and the dynamic nature of central banking business. Thus, the bidder should consider those changes (if any) as a future requirement and may bill the Bank separately as a change request.

In addition, to Annexure II, bidders should also consider the Information Security Requirements in Annexure III when designing the solution for the Bank.

6. Scope of Work

The bidder will be required to translate the Bank's objectives on the MCIB into workable technology solutions right-sized for the needs of the Bank and all stakeholders (including existing participants and future participants such as retailers, factoring service providers, other utility bodies).. In that respect, the Bank expects the bidder to be a partner rather than a mere solution provider. To this end, the response to the RFP needs to focus on the requirements of the people who will be using the system.

The project work shall include the following:

- Supply and installation of the core and support software to carry out the functions as described above.
- Supply, setup, configuration, installation and commissioning of all required hardware, software, network devices and other required components for an end to end solution.
- Supply, installation and configuration of all support software such as Operating systems, Database Management System, Backup, Antivirus software, adequate information security measures, etc.
- The needs of all stakeholders intending to use the system should be covered by the solution.
- Study of the existing MCIB processes.
- Obtain primary understanding of the processes from the Bank for program management and implementation of Solutions. For details on application / configuration / infrastructure / network / interfaces / additional customizations and IT infrastructure, direct interaction with the corresponding stakeholders would be necessary.
- Build seamless interfaces (wherever needed) with identified existing applications of the Bank or other related entities.
- Conduct tests (hardware (if required), software UAT etc.) as per the test plans devised by the Bank and appropriately carry out the measures to meet with the set standards.
- Conduct any vulnerability assessment and perform any remediation required.
- Conduct training for identified group of end-users. The vendor should also follow a train-the-trainer approach for training using various mediums of communications and training tools.
- Prepare detailed training manuals / presentations containing appropriate flowcharts etc. for end user training. End User Training will be conducted at locations specified by the Bank.
- Prepare all operating manuals, user manuals, system manuals, IT security manuals etc. as required.
- Build reports for MIS purposes which may not be readily available in the solution. Customized reports may need to be built as per user requirements.
- Provide five-year post implementation support with an indication of cost.
- Provide building blocks / interfaces for porting data to the state of the art data warehousing system of the Bank.
- Bidder should provide a Low level Architecture Diagram (LLD) showing how systems are interconnected including Middleware and/or API,

- Bidder should provide a Product Roadmap for the next 5 years, showing efforts in Research and Development,
- Project Manager should be present on-site for the whole duration of the project and should participate in all Steering Committee meetings,
- Bidder should provide separate document for Hardware (for evaluation purposes),
- Responsibility for licence deployment lies on bidder during the period of the implementation till the handing over of the system to the Bank. The bidder will be liable for any discrepancies in licensing discovered during post-implementation audits irrespective of whether the license belongs to the Bank or to the bidder.
- Various activities cited above are illustrative and are not an exhaustive list. All activities need to be performed and delivered within the given timelines without compromising the quality standards.

All installation and configuration work, as determined by the supplier's solution will be carried out at the Main and Disaster Recovery (DR) sites of the BOM. Work for the purpose of site preparation, such as laying of power and data cables, AC etc. is outside the scope of this RFP. The bidder is required to fully describe the requirements for site preparation.

The minimum requirements to be included by the bidder in the Technical Proposal are set out in Table 5 in Section 12.3 Technical Proposal.

7. Technical Requirements

Table 1 below lists the technical requirements for the MCIB Project. The list is non-exhaustive and aims at setting the scope of the project. Bidders should respond by copying the table and providing the responses therein.

Hardware, including network equipment and supporting software such as Operating Systems, Firewall, Database and Antivirus should be consolidated for the whole project. With a view to optimizing on useful lifetime of hardware and warranty periods, bidders will be required to plan their procurement in order to match, as far as possible the implementation of the project.

In the financial submission, bidders will be required to provide a breakdown of the costs as set out in Annexure XI – Format for Commercial Bids.

Table 1:

Specific Requirements – Core Systems
In addition to the FRS listed in Annexure II which bidders are required to complete as described in Section 5, they are also required to respond to the requirements in this table by leaving the description (second column) as is while appending their responses or references to documents thereof

in the fourth column. Failure to respect this format may lead to penalization in terms of marking bidders' response.

	Requirements	Comply (Fully /Partially /Not compliant)	Bidder to specify references to documents and explanations in this column for any response

R-1	Please provide the product name and version. If several products are offered, their names and functionalities must be stated. The following details must be submitted:
	
	   i. Software Package Name
	   ii. Version No. Applicable
	   iii. Date Version Released
	   iv. Date(s) of Next Upgrade/Release
	   v. Typical Version Release Period
	   vi. No. of Releases over last 5 years
	   vii. List the central banks where applications have been implemented
	   viii. Operating System(s) Supported
	   ix. Database Management System(s)
	   x. Hardware Platforms Supported
	   xi. Network(s) Supported		

R-2	How long has the product been on the market?		
R-3	Please state the product's expected life, in years, when it is expected to be available, supported and enhanced. Please indicate, whether the product, or any of the components have ever been discontinued.		
R-4	Please briefly describe the product's design and architecture. Please describe whether the product and its components share a common core and also provide details of any integration complexities. Open source software will not be accepted as solution for the core application.		
R-5	Please state the products competitive edge and limitations		

R-6	The bidder should have had an annual turnover of at least USD 3 million for the previous three financial years. Bidders should provide Audited financial statements (Balance Sheet, P&L, Cash Flow and Notes to Accounts) for the last three financial years. The accounts must be audited by a reputable audit firm. The main bidder should prove their solvency and failure of the solvency test could lead to the bidder being disqualified for this tender exercise.		
R-7	The Bank will reject any bidder who may have been involved or alleged to have been involved in any corrupt or fraudulent practices, money laundering and, debarred from participating in any public procurement. The main bidders must provide a written undertaking for this purpose.		

Product customisation

R-8	Please list the functions which are standard when compared to the functions described in the detailed FRS in Annexure II		
R-9	Please list the functions which can be achieved by customisation when compared to the functions described in the detailed specifications in Annexure II		
R-10	Please list the functions which are not supported when compared to the functions described in the detailed specifications in Annexure II		

Interfaces

R-11	Please describe the interface this solution will have with each system listed in Section 4.1		
R-12	All interfaces should be smart and handle multi-channel communication between systems.		

R-13	Interfaces must have logs and journals for tracking and diagnosis and must be capable to send alerts and exception messages to concerned people (including technical team) via SMS/emails		

General Requirements

R-14	Please provide an overall system architecture of the MCIB system, highlighting, among other particulars, Core systems, the data flows, system dependencies and limitations etc. The system architecture should be the bidder's version of understanding the MCIB project and the bidder should aim at demonstrating the extent to which the proposed solution embraces the Bank's vision, requirements and IT Architecture as referred to in Annexure I.		
R-15	Please provide details of the information system security based on the minimum requirements specified in Annexure III. The Bank is willing to consider any other options based on the Information Security philosophy described in Annexure III.		
R-16	Please provide details of the consolidated hardware requirements as per the tables in Annexure IV. It is mandatory for the bidder to provide a detailed Bill of Quantities (BoQ) as per the format requested in the Bill of Materials document in Annexure XI. Bidders should also provide the expected End of Life and End of Service of any hardware.		
R-17	It is mandatory for bidders to provide an overall cost for all modules as well as a breakdown for each of the modules as detailed in Annexure XI.		
R-18	Please provide details of the testing Approach and methodology including UAT and system integration. (Please refer to Section 8). Bidder should abide by the requirements of section 8 (System Testing) of this document and should provide all necessary documents.		

R-19	Bidder undertakes to abide by the requirements of Section 12.9 Bidding Terms and Conditions of this document.		
R-20	Bidder undertakes to comply with all the clauses specified in Section 14 (Payment Terms and Schedule) of this document.		
R-21	Please provide details of the data migration approach and methodology, if applicable. Bidder should abide by the requirements of Section 9 (Data Migration) of this document and should provide all necessary documents. Data are available in the following formats: structured databases and unstructured data (in the form of scanned documents, forms, among others).		

Project Management

R-22	It is expected that the project will be implemented in a phased approach as described in Section 11. Retained systems and, the inclusion of new core systems, should be made such that there is no disruption in service for the users.		
R-23	The bidder will have to appoint a Project Director/Manager (PM) to drive the project and coordinate activities of the whole project. The PM should have least one reference site of involvement in project of similar size. It is required that the PM does not change throughout the duration of the project, unless, mutually agreed between the parties. The PM should be present on-site for the whole duration of the project. The PM may be required to interact with the participants to understand their needs, during the implementation.		
R-24	The bidder should submit the CVs of key personnel as per Section 15.10 Annexure X.		

R-25	Please provide the overall project implementation plan starting from the date of contract signature up to final sign-off. The plan should indicate critical milestones as well as dependent tasks. At minimum, a Gantt Chart and a Responsibility Matrix should be provided. The responsibility matrix should include subcontractors/system integrator detailing their responsibilities for handling hardware, licenses, middleware, among others.		
R-26	Please provide a Project Charter containing brief project description, approach, methodology, milestones, project organization with their roles and responsibilities, project risks and mitigation plans, dependencies, etc. The bidder shall also include in the program supplying, installing, and implementing the software covered under this contract. The project should include an overall project plan with separate project plans for each component.		

Quality Control

R-27	The bidder will be responsible for minimizing project risk through periodic reviews of the project implementation status. It is to provide an independent and objective view of the implementation project, identify any risks to the project goals, and recommend appropriate corrective action. There would be at least four such cycles during the project implementation depending on the need, deliverables, and project timelines. For details of Quality control considerations, please refer to Section 15.5 - Annexure V (Quality Assurance). The PM will participate and contribute on-site in all Steering Committees and Board		

	meetings specific to this project. The PM may be accompanied by other members (functional/technical) as and when required for Steering/Project Committees.		

Solution Sizing

R-28	The bidder will provide a comprehensive solution sizing, based on the information provided in requirement specifications documents. The sizing estimate must include detailed server configuration, platform to be used, data storage scheme based on number and type of users, Bank's expected service levels, and desired response time. The bidder should factor in the growth of the system for the next 5 years as specified in the BSRS document.		

Training and documentation

R-29	Please provide a General Training program for the entire MCIB Project. The general training should aim at giving users an overview of the system and appreciate the dependencies and limitations for the system.		
R-30	Please provide a Specific training programme for IT staff and first line support. This training programme should include all back-end tasks such as backup, database administration, tuning, replication monitoring and support escalation. The bidder should include certification training and examination costs where applicable.		
R-31	Please provide a Specific training programme for business users. This training programme should include all tasks related to the usage of the application, reporting and eventually report customisation.		
R-32	The bidder should specify the number and skills required for each category of staff.		

R-33	Please provide a 'Train the trainer' programme together with training kit with lab/exercises for training of new entrants and presentations.		
R-34	The bidder is expected to involve the targeted operational and technical staff at an early stage during implementation so that there is effective knowledge transfer. In addition, classroom type of formal training with documentation, presentation slides and hands-on practical work is required. The training sessions have to be repeatable and in this connection, a test or lab system of the must be provided. Please specify how the bidder plans to achieve this.		
R-35	Full documentation of the general system, support software and hardware if applicable, in e-book format (paper format as an option), should be provided. The documentation must include the following: a. A system overview describing the modules in operation and their linkages; b. An operation manual for each module, highlighting critical aspects; c. A Technical manual for each module, highlighting critical systems and troubleshooting tips; d. A step by step 'walk-through' manual to start and operate the system: one for operational staff and one for technical staff; e. Systems configuration manuals for Operating System, Communication Equipment, Database, Web server etc.		

Support Services and Maintenance

R-36	The bidder agrees to provide the support services and maintenance set out in Section 14.1.4		
R-37	The bidder should provide three months of post Go-live onsite support. The bidder should provide the cost for per man-month.		

Payment Terms

R-38	The bidder agrees with the Payment Terms set out in Section 14 (Payment Terms and Schedule) of this document.		
R-39	Each payment made by the Bank under the Section 14 Payment Terms and Schedule should be secured by a bank guarantee for that amount.		

Licensing

R-40	Responsibility for licence deployment lies on bidder during the period of the implementation till the handing over of the system to the Bank. The bidder will be liable for any discrepancies in licensing discovered during post-implementation audits irrespective of whether the license belongs to the Bank or to the bidder.		

8. System Testing

The successful bidder shall prepare procedures detailing the steps for conducting system tests and shall conduct tests to demonstrate that the system meets all the requirements (functional and technical) specifications as brought out in this RFP and would be in accordance with the procedures detailed in the approved BSRS document. The evaluation methodology and results have to be validated with the Bank and a report should be submitted for review and approval by the Bank's management.

8.1.1 Load and Stress Testing

Loading, scalability, and stress testing would be conducted prior to "Go-Live" once the system testing and integration testing of the configured and customized solution have been conducted successfully. The stress and load testing requirements will be jointly determined with the Bank. The successful bidder will conduct the test based on the agreed test procedures as proposed by the bidder and agreed upon by the Bank, keeping in view the Bank's future load of transactional users. The implementation shall not be cleared for Go-Live, unless the testing is conducted successfully and is cleared by the Bank.

The successful bidder will be responsible for arranging the necessary environment for performance testing.

8.1.2 Interoperability Testing

All interactions between systems should be tested and validated by business users.

8.1.3　Development of Acceptance Test Cases / Scripts

The successful bidder shall develop and document such test cases / scripts (comprising inspections, routines, demonstrations, and/or performance benchmarks) as are necessary for the conduct of the Acceptance Procedures and the demonstration of the achievement of the Acceptance Criteria.

Each documented test case / script shall (as a minimum):

- Explain the purpose of each test
- Cross-reference each test to the appropriate detailed requirement (requirement traceability)
- Cross-reference each test to the appropriate Acceptance Procedure
- Detail the conduct and performance of each test, including in respect of each such test:
  o A technical specification of the test down to a level, which identifies the individual transaction or operation
  o A specification of the initial state of the deliverables, any pre-set files, and other necessary data together with details of the data to be input into the system
  o The personnel required from the bidder and the Bank in order to carry out the test
  o Anticipated results of the test (including, where appropriate, any anticipated error conditions) defined in sufficient detail to allow an objective measure of pass/fail to be made

The test cases / scripts shall be developed such that the Acceptance Procedures can be reasonably completed within the timeline set out in the Implementation Plan (and any associated project plan), including allowance for appropriate and reasonable correction and retesting.

Conducting Acceptance Procedures

- The successful bidder shall submit the deliverables for acceptance on the first day of the Acceptance Procedures Period and shall, in conjunction with the Bank, conduct the Acceptance Procedures in accordance with all the applicable provisions of this agreement.
- The successful bidder and the Bank shall make the personnel referred to in the test cases / scripts available during the Acceptance Procedures Period.
- The Bank shall operate the deliverables during the Acceptance Procedures Period in accordance with such reasonable requirements as successful bidder may make known to the Bank from time to time.
- During the Acceptance Procedures Period, the Bank shall not repair, modify, or adjust the deliverables except with the prior written consent of the successful bidder.
- The occurrence of an incident shall result in the raising by the Bank of an Incident Report. The Bank shall make available to the successful bidder copies of all Incident Reports during the conduct of the Acceptance Procedures to which they relate.
- An Incident Report shall only be deemed to be resolved when it has been signed by the Bank's representative in confirmation of resolution. Such confirmation shall not be unreasonably withheld or delayed following the resolution of an incident.
- While conducting the Acceptance Procedures, the Bank's representative shall maintain the Acceptance Test Report.

- In the event that there are no outstanding Incident Reports at the conclusion of the Acceptance Procedures Period, the Bank's representative shall complete the Acceptance Test Report in confirmation of the acceptance of the deliverables and provide the successful bidder a copy of the completed Acceptance Test Report as notification of the successful completion of the Acceptance Procedures.

8.1.4   User Acceptance Testing

The successful bidder shall develop the acceptance test procedures in mutual agreement with the Bank and shall conduct tests to demonstrate the conformance to the required process maps and operations response times. The acceptance tests should be carried out before the Go-Live functions and a report submitted on the successful conclusion of these tests. Any function will be allowed to Go-Live only after the successful conclusion of these tests. The successful bidder will be responsible for planning the availability of the Bank's resources required to execute/review the User Acceptance Testing.

It is to be noted that the UAT of different systems will be different and the successful bidder shall take this fact into consideration.

Acceptance Criteria

The following Acceptance Criteria shall apply for the system:

Adequately tested

- Test cases / scripts completed and provided
- All test issues (integration and regression testing) resolved
- Business acceptance of the test results
- Regression test results provided and accepted

Clearly and completely documented

- Documentation delivered for:
  - Software Design Document
  - Functional and Technical Scripts for all developments and interfaces

Adequate training of users and support organization

- Capability transfer to support organization completed
  - Knowledge transfer to the Bank completed and acknowledged
  - Confirmed per module and level of support required
  - Internal knowledge transfer to the rest of the Bank's teams has taken place
  - Bank users have been informed of the support guidelines and trained in all aspects of the solution
- End-user training delivered and confirmed adequate by business stakeholders.

- End-user proficiency has been tested and confirmed in a post Go-Live environment.

Correct and complete set of data

- Data completeness confirmed by business stakeholders

Comply with functional requirements specifications

- Confirmed by business analysts per module/functional area.

- Impact on system sizing and performance has been evaluated and applicable measures are in place.

- System changes and maintenance activities are confirmed to adhere to the existing Commercial IT governance procedures.

Controllable and agreed post Go-Live support agreement in place

- All Go-Live and project issues (from the formal project issues register) are permanently resolved (i.e., no workarounds in place).

- Scope of required Support Services defined and documented.

- Applicable amendments to the Support Services agreements established and in place.

- Acceptance of the solution into the support organization and Support Services agreement by both the Bank IT Head and the bidder Service Delivery Manager.

Acceptance or Rejection

- If the Bank determines that a deliverable successfully operates in accordance with, and otherwise conforms to, the specified acceptance criteria, it will notify the successful bidder in writing that it accepts the deliverable. If the Bank determines that a deliverable does not operate in accordance with, or otherwise conform to, the applicable acceptance criteria, it will provide the successful bidder with a written notice describing the defect.

- The successful bidder shall have twenty-one (21) calendar days (or such other period as may be mutually agreed in writing between both parties) from the date it receives the Bank's notice of defect to correct (at no additional cost to Bank) the deliverable.

- If the successful bidder delivers a corrected version of the deliverable, then Bank will be entitled to repeat the testing process. If the successful bidder fails to deliver, within the period stated as above, a version of the deliverable that conforms to the specified acceptance criteria, then Bank may reject the deliverable and terminate all or any part of the contract upon notice to the successful bidder without financial liability or obligation for the portion terminated.

- Acceptance of a deliverable shall not constitute a waiver by the Bank of any rights it may have based on Intellectual Property's warranties.

Any changes to the system based on the feedback from the testing reports will be done without any additional scope/cost to the Bank.

8.1.5 Final Acceptance

The final acceptance would be based on adherence to required response time, the integrity of the solution after installation, and no operational bugs. This would include fine-tuning of the software, ensuring all required related component software are installed and no debugging is required. The acceptance tests should be carried out within a month of Go-Live for each major module and a report should be submitted on the successful conclusion of these tests (The bidder would make the necessary changes to the application to ensure that implemented solution successfully goes through UAT). The commissioning/implementation of the software shall be deemed complete only after the satisfactory acceptance by the Bank management.

Please note that the final acceptance shall be carried out for each of the solution individually.

9. Data Migration

All data upload/download programs/interfaces required to carry out the migration shall be carried out by the bidder as per scope. The Bank requires migration of data of all existing customers to the new system.

Following are the details of the activities to be carried out as a minimum, by the bidder for the data migration activities. The list of activities below is only indicative and should not be construed as being an exhaustive list. The bidder should propose its own migration methodology and related set of activities based on the requirements below.

Pre-migration Activities

- Identify data source and its details

- Run system extracts and queries

- Conduct user interviews and awareness programs on data migration process

- Review migration scope and validation strategy

- Create work plan and milestone dates

- Identify data-cleansing needs and expectations

- Create data prep worksheets

- Clean up source data in current system

- Format unstructured data in other systems

- Run extracts and queries to determine data quality

- Create metrics to capture data volume, peak hours, and off-peak hours

Data Cleansing and Quality

One of the main activities in this stage will be to clean the data to minimize data quality issues in the data sources.

A data quality issue can be categorized into two types:

- A 'semantic' data quality issue in which data does not comply with 'As Is' business rules

- A 'physical' data quality issue in which the data does not comply with application rules, data definitions, or validations in either existing source systems or new applications

While there are synergies between migrations and cleansing, there can be number of challenges that can be faced, as follows:

- Identification of 'semantic' data quality issues requires an in-depth knowledge of the business domain, which will require Bank users' involvement.

- Resolution of such quality issues require subjective judgement, which draws on business expertise.

- Many data quality issues require resolutions that are too complex to automate successfully through the back-end and can only be fixed manually via the front-end application.

- Data migration is a critical activity, which requires as stable a dataset as possible.

- Data migration must be complete before implementation, whereas only a small proportion of cleansing of 'semantic' quality issues is likely to be critical to the implementation and operation of the new system.

As part of the migration process data from the source systems may be 'transformed' to make it compatible with the target application. The data transformation logic may be able to fix simple 'physical' data quality issues, such as (following list is not exhaustive):

- Removal of leading and trailing white space

- Removal of illegal character types

- Mapping of invalid codes to valid codes

- Change of case, e.g., uppercase to lowercase.

Key Activities during Data Migration

- Create/verify data element mappings

- Run data extracts from current system(s)

- Create tables, scripts, and jobs to automate the extraction

- Address additional data clean-up issues

- Execute application-specific customizations

- Run mock migrations

- Conduct internal data validation checks, including business rules and referential integrity checks

- Perform data validation

- Prepare migration validation reports and data movement metrics

- Review migration validation reports and metrics

- Record count verifications on the new system

- Reconcile or resolve any exceptions or unexpected variations

- Sign off on migration validation

Post-migration Activities

- Complete data migration reports and cross-reference files/manuals

- Data archiving as per the Bank's requirement

10.   Project Deliverables

The following table presents the project deliverables:

Table 2:

S. No.	Deliverable	Details
1)	Detailed Project Plan and Inception Report	The report will cover the following aspects: • Project organization and management plan • Software design and development plan • Pre-commissioning, operational, and user acceptance testing plan • Capacity plan • Hardware delivery and installation plan • Network design, delivery, and installation plan • Change management, communication, and training plan • Warranty service plan • Risk management plan • Task, time, and resource schedules • Go-Live Plan • Training Plan • Quality assurance and control process details (Please refer to *Annexure V*) • Technical and operational procedures, which must include (but not limited to) detailing on methods, tools, techniques, Logical Data Model for DW, SOA Governance Methodology, and Operating Model
2)	Architecture Deliverables	The deliverables will consist of: **Core Deliverables:** • Solution Architecture • Guidelines and Best Practices • Applied Standards **Solution Domain:** • Solution Architecture Document • System Glossary • System Use Case Model • System Use Case Specifications • User Interface (UI) Prototypes • Out-of-the-Box (OOB) Process Blueprints (provided by OEMs) • Design Model • Rules Design Model • Data Model • Implementation Model • Deployment Model

S. No.	Deliverable	Details
3)	Business and Software Requirement Specifications (BSRS) Document	The BSRS document will cover the following business aspects: • Functional Requirements as finalised after meeting users • Changes in business processes/new rules The BSRS document will also cover the following aspects: • Software Functionality Requirements • Software Requirements Specifications • Customization Requirements Specifications • Formats of all input (data entry) screens • Naming conventions followed for the tables and fields • Format of all reports that would be generated by the solution • Access control mechanisms, data security requirements, and audit trails to ensure that databases are not tampered or modified by unauthorized users • External Interface Specifications, including API and Web Services High level design (HLD) and low level design (LLD)
4)	Software Design Document (SDD)	The SDD document will cover the following aspects: • High-level design and architectural views • User Interface design • Logical and physical component mapping • Collaboration and sequence diagrams of components • Details of validation rules and constraints (Integrity/Check/Referential, etc.) to be applied • Business rules and processing logic used for all services • All database structure and detailed description of fields and tables • Data flow diagrams (DFDs) and entity relationship (ER) diagrams • Tools and techniques to be used
5)	Detailed Hardware and Network Specifications	This document will cover the following aspects: • Hardware and network sizing and specifications based on application requirements, traffic and load, usability, scalability and performance • Network specifications
6)	Hardware Installation Completion Report	This document will certify the completion of hardware setup.
7)	Unit, Component Integration and System Integration Testing Plan, Test Cases and Test Report	Deliverables: • Unit test plan, unit test cases and unit test reports • Component integration test plan, component integration test cases and component integration test reports • System Integration test plan, System Integration test cases and System Integration test reports

S. No.	Deliverable	Details
8)	User Acceptance Testing Plan and Test Cases	This document will detail : • Test plan and Test cases for user acceptance testing
9)	Go-Live Plan	The rollout plan will cover the following: • Rollout approach • Key dependencies • Key Performance Indicators (KPIs) for successful rollout • Planned service disruption • Rollback strategy
10)	Change Management Strategy	• This document will detail the change management, communication, and training strategy in conformance with the need for change interventions, communication, and training as analysed and agreed with the Bank
11)	Workshops/ Trainings Completion Report	This document will cover the following aspects: • Workshops/training conducted • Computer based training • Name/department details of various participants in the workshops/trainings • Feedback formats • Procedure for making changes (e.g., text changes) to the computer-based Training • Training material for future
12)	Operational Procedures Manual	• This document will cover in detail the procedures for operating various modules of the application.
13)	Administration Procedures Manual	This document will cover in detail the procedure for administering various modules of the application.
14)	Security Policy and Procedures Manual	This document will detail out the security policy that will be applied to the system and operations, which will also detail out different procedures and formats required for operationalizing the policy.
15)	Go-Live/ Application Launch Report	This document will cover the following aspects: • Release notes for the application delivery • Results of tests conducted on the application immediately post Go-Live • Any issues/errors noted in the testing

S. No.	Deliverable	Details
16)	Contingency Plan Document	This document will cover the following aspects: • Emergency response procedures • Data backup arrangements, procedures, and responsibilities • Data archiving strategy and procedures • Disaster recovery procedures and responsibilities • Business Continuity Plan and procedures
17)	Periodic Progress Reports	The periodic progress reports would summarize the following: • Results accomplished during the prior period • Cumulative deviations to date from schedule of progress milestones as specified in the agreed and finalized project plan • Corrective actions to be taken to return to planned schedule of progress; proposed revisions to planned schedule • Other issues and outstanding problems; proposed actions to be taken • Resources that the bidder expects to be provided by the Bank and/or actions to be taken by the Bank in the next reporting period • The reporting period for the progress reports shall be weekly.
18)	Object Code and Intellectual Property Rights	• Bidder should provide along with the object code, and systems specifications, the other library files used and third-party propriety files used in running the developed software to the Bank without any cost and the bidder shall provide the same along with other deliverables. If bidder updates/amends the codes to complete the assigned contract in full, covered by the SRS pertaining to this agreement or amended SRS to complete the assigned contract covered by this agreement, and in doing so, if any third-party propriety files or other library files are used, such files shall also be provided to the Bank on completion of the work, without any additional cost. • The customised solution for the Bank deployed according to the BFRS shall be the exclusive property of the Bank.
19)	User Manuals	• The bidder should provide User Manuals for each of the initiatives
20)	Training Report	The bidder should provide: • Training coverage report • Training assessment report

11.   Project implementation plan

The bidder is required to provide a detailed implementation plan for the MCIB project. The modules may be implemented in the following order (this table is indicative only).

Table 3:

Sr. No.	
1	Core System
2	Module 1
3	Module 2
4	…

Project Management Report (to be appended to Project deliverables)

The successful bidder would be required to provide periodic reports on the project progress. The formats of the reports would be finalized after commencement of the project. An indicative list of reports is provided below:

Table 4:

Project Stage	Report	Periodicity
Implementation	Update on progress – This report should provide the following details: • Project progress – vis-à-vis planned timelines • Tasks completed during the week • Issues and concerns • Current period's accomplishment • Pending action items from previous reporting period • Next steps • Interventions required	• Weekly • Monthly
Maintenance	• Periodic update on maintenance activities • Periodic SLA performance reports • Payment reconciliation reports	• As per SLA requirements/as mutually agreed between the Bank and the bidder

12.   Proposal Instructions and Conditions

The proposal must be direct, concise, and complete. All information not directly relevant to this RFP should be omitted. The Bank will evaluate the bidder's proposal based upon its clarity and the directness of its response to the requirements of the project as outlined in this RFP.

12.1   General Instruction

The Bank seeks a specific proposal responsive to this RFP in every respect and detail, rather than a mere compilation of materials and promotional information used in other transactions. The Bank will be appreciative of the quality and responsiveness of the proposal.

12.2   Documents Comprising the bidder s' Proposal

- Technical proposal
- Commercial proposal
- Any other information that is required to be submitted in the proposal process

12.3   Technical Proposal

The technical proposal should contain a detailed description of how the bidder will provide the required services outlined in this RFP. It should articulate in detail, as to how the bidder's technical solution meets the requirements specified in the RFP. The technical proposal must not contain any pricing information. In submitting additional information, please mark it as supplemental to the required response. If the bidder wishes to propose additional services (or enhanced levels of services) beyond the scope of this RFP, the proposal must include a description of such services as a separate attachment to the proposal.

Bidders should submit a separate document for their hardware proposal, which should include the hardware/OS details including all the components required for the solution, the network setup, and a complete packing list.

The technical proposal should address the following at a minimum and should be structured in logical sections dealing with corresponding requirements as laid out in the following table:

Table 5:

	Bid Requirements	Bidder's Responses	Reference
1	Acknowledgement of Bid Form (Annexure VI)		
2	Executive summary, giving an overview of the proposal		
3	Bidder 's understanding of the project and scope of work		
4	Technical requirements (Please refer to Section 7 and provide responses to each requirement)		
5	Approach and methodology of design, development, and implementation of the solution (best practice and industry standard)		

6	Proposed project organization structure
	    o Project organization structure
	    o Role and responsibility
	    o CV matrix (Annexure X)
	    o Profiles		

7	Agreement to the proposed Project Deliverables (Refer to Section 10)		

8	Bidder's Profile including OEMs and consortium members:
	    o Bidder's profile
	    o Bidder's latest audited financial statements
	    o Certification from original equipment manufacturers (OEMs)
	    o List of all consortium members including brief description of nature of products and services, date, form and state of incorporation, contract administrator and company principals (name, title and business address).		

12.4   Commercial Proposal

Following are the guidelines to be followed for the commercial proposal:

- The commercial proposal should be submitted along with the eligibility and technical proposals but in a separate sealed envelope.
- Unless expressly indicated, the bidder shall not include any technical information regarding the services in the commercial proposal. Additional information may be submitted to accompany the proposal. In submitting additional information, please mark it as supplemental to the required response. Prices shall be quoted entirely in United States Dollar (USD) and must be all inclusive of expenses, rates, and taxes (Taxes and levies should be shown separately).
- Bidders are expected to work out an enterprise licensing deal at the lowest prices instead of a variable model such as user based or CPU/core based.
- Commercial proposal should not be conditional
- Bidders are expected to design payment terms keeping in mind lowest total cost of ownership (including NPV) for the Bank. These terms could include, but are not limited to, licenses paid for only when the project is close to go live, deployment of hardware first for test and development and staggering of the production environment to when it is actually needed.
- All Software warranty and Maintenance cost will be applicable from Go-Live date but not from the purchase date.
- Any customization need arising in this project during the implementation phase will be at the bidder's own cost and responsibility.
- The commercial proposal must be submitted in the format specified in Annexure XI of this RFP.

12.5   Format and Submission of Bids

Technical proposals must be submitted in two hard copies as well as in a soft copy format in a non – rewritable CD. The words "Technical Proposal – Bank of Mauritius MCIB Project" shall be written in indelible ink on the CD. In case of discrepancy between the CD (soft copy) and the hard copy, the hard copy shall prevail. The envelope shall be super scribed "Technical Proposal – Bank of Mauritius MCIB Project" at the top right-hand corner.

A separate document should be submitted for hardware (for evaluation purposes).

The commercial proposal shall be submitted in two hard copies which shall be **signed by the authorized signatory** and submitted in sealed envelopes super scribed "Commercial Proposal – Bank of Mauritius MCIB Project" at the top right-hand corner.

The Technical and Commercial Bids should be submitted in separate sealed and clearly marked envelopes. The two sealed separate envelopes should be put in one larger envelope marked "Bank of Mauritius MCIB Project" and should be addressed to the Bank of Mauritius at the address specified in this RFP.

The presentation / proof of concept will be conducted as per the Bid Information Sheet in Section 1 and will form part of the Technical Evaluation as mentioned at Section 13.

The bidder shall bear all costs associated with the preparation and submission of the bids. The Bank will under no circumstances, be responsible or liable for any cost thereof regardless of the conduct or outcome of the bidding process.

Failure to comply with the above submission formats may entail rejection of the bid.

12.6   Period of Validity of Proposals

The proposals shall be valid for a period of 180 days from the bid closing date. A proposal valid for a shorter period may be rejected as nonresponsive. On completion of the validity period, unless the bidder withdraws his proposal in writing, it will be deemed to be valid until such time that the bidder formally (in writing) withdraws his proposal.

In exceptional circumstances and at its discretion, the Bank may solicit the bidder's consent for an extension of the validity period. The request and the responses thereto shall be made in writing (by letter, fax or email). The commercial proposal of successful bidder should be valid for five (5) years from the date of go live of the MCIB Project.

12.7   Correction of errors

Bidders are advised to exercise adequate care in quoting the prices. No excuse for corrections in the quotes will be entertained after the quotations are opened. All corrections, if any, should be initialled by

the person signing the proposal form before submission, failing which the figures for such items may not be considered.

Arithmetic errors in proposals will be corrected as follows:
In case of discrepancy between the amounts mentioned in figures and in words, the amount in words shall govern. The amount stated in the proposal form, adjusted in accordance with the above procedure, shall be considered as binding, unless it causes the overall proposal price to rise, in which case the proposal price shall govern.

12.8　Acknowledgement of Understanding of Terms

By submitting a proposal, each bidder shall be deemed to acknowledge that it has carefully read all sections of this RFP, including all forms, schedules, and annexures hereto and has fully informed itself as to all existing conditions and limitations.

12.9　Bidding Terms and Conditions

a) The Bank expects bidders to adhere to the terms and conditions of this RFP and would not accept any deviations from the same.

b) Responses to this RFP should not be construed as an obligation on the part of the Bank to award a contract for any services or combination of services. Failure of the Bank to select a bidder shall not result in any claim whatsoever against the Bank and the Bank reserves the right to reject any or all proposals in part or in full, without assigning any reason whatsoever.

c) By submitting a proposal, the bidder agrees to promptly contract with the Bank for any work awarded to the bidder. Failure on the part of the awarded bidder to execute a valid contract with the Bank within twenty-one (21) days of issuance of Letter of Acceptance (LoA) will lead to the Bank going ahead with next best bidder and relieve the Bank of any obligation to the bidder and a different bidder may be selected.

d) The bidder must strictly adhere to the delivery dates or lead times identified in their proposal. Failure to meet these delivery dates, unless it is due to reasons entirely attributable to the Bank, may constitute a material breach of the bidder performance and attract liquidated damages. In the event that the Bank is forced to cancel an awarded contract (relative to this RFP) due to the bidder's inability to meet the established delivery dates, the bidder shall be responsible for payment of 200% of the costs incurred by the Bank for re-procurement of such undelivered goods or services. The liability in such an event will be limited to the value of the contract. In addition to this, the bidder shall also be liable to the liquidated damages as may be fixed by the Bank as per section 12.19 "Liquidated Damages".

e) The Bank, neither accepts responsibility for, nor relieves the bidder of responsibility for the performance of all provisions and terms and conditions of this RFP and expects the bidder to fulfil all the terms and conditions of this RFP.

f) The bidder represents that the proposed software solution and its documentation and/or use of the same by the Bank shall not violate or infringe the rights of any third party or the laws or regulations under any governmental or judicial authority. The bidder further represents that the documentation to be provided to the Bank shall contain a complete and accurate description of the software and services (as applicable) and shall be prepared and maintained in accordance with the highest industry standards. The bidder represents and undertakes to obtain and maintain validity throughout the project, of all appropriate registrations, permissions and

approvals, which are statutorily required to be obtained by the bidder for performance of the obligations of the bidder. The bidder further undertakes to inform and assist the Bank for procuring any registrations, permissions, or approvals, which may at any time during the contract period be statutorily required to be obtained by the Bank for availing services from the bidder.

g) The bidder undertakes to provide appropriate and trained human as well as other resources required to execute the various tasks assigned as part of the project, from time to time.

h) The Bank would not assume any expenses incurred by the bidder in preparation of the response to this RFP and also would not return the bid documents to the bidder.

i) The Bank shall not be held liable for costs incurred during any negotiations on proposals or proposed contracts or for any work performed in connection therewith.

j) The bidder shall be responsible for managing the activities of its personnel. The bidder shall be liable for any acts, deeds, or things done by their employees, agents, etc., which is outside the scope of power vested or instructions issued by the Bank. The bidder shall be the principal employer of the employees, agents, etc., engaged by bidder and shall be liable for all the acts, deeds, or things, whether the same is within the scope of power or outside the scope of power, vested under the contract to be issued following this RFP.

k) In no event, the Bank shall be the employer of the employees, agents, etc., engaged by bidder. No right of any employment shall accrue or arise, by virtue of engagement of employees, agents, etc., by the bidder for any assignment under the contract to be issued following this RFP. All remuneration, claims, wages, dues, etc., of such employees, agents, etc., of bidder shall be paid by bidder alone and the Bank shall not have any direct or indirect liability or obligation, to pay any charges, claims, or wages of any of bidder's employee, agents, etc. The bidder shall hold the Bank, its successors, assignees, and administrators fully indemnified and harmless against loss or liability, claims actions, or proceedings, if any, that may arise from whatsoever nature caused to the Bank through the action of its employees, agents, etc. However, the bidder would be given an opportunity to be heard by the Bank prior to making of a decision in respect of such loss or damage.

l) The Bank shall inform the bidder of all breaches and claims of indemnification and, shall grant the bidder sole authority to defend, manage, negotiate, settle such claims and make available all reasonable assistance in defending the claims at the expense of the bidder.

m) The bidder's representative and local office (if any) shall be the contact point for the Bank.

n) The bidder should ensure that the hardware delivered to the Bank, including all components and attachments are brand new and the software and hardware delivered are the latest released versions. In case of software supplied with the system, the bidder should ensure that the same is licensed and legally obtained with valid documentation made available to the Bank.

o) The bidder shall procure in the name of the Bank all user-specific software licenses for the Bank. The bidder shall also provide other licenses for applications, operating system, and database as required by the Bank to successfully utilize the solution. The bidder shall provide the licenses for all software being a part of its proposed solution to the Bank.

p) The bidder shall be liable for any penalties or claims arising from wrong installation and usage of licenses purchased under the contract and used for this project.

q) The bidder shall ensure that the solution provided and sized by the bidder is capable of meeting the Bank's current and future transaction and business volumes. Empirical evidence of the

appropriateness of the server sizing by means of comparison with benchmarked data on a similar environment as proposed to the Bank.

r) The bidder shall perform the services and carry out its obligations under the contract with due diligence and efficiency, in accordance with generally accepted techniques and practices used in the industry and with professional and training/consulting standards recognized by national/international professional bodies.

s) Project team: The Bank will have the right to interview the proposed team members of bidder who will be working on this project. Once selected, the team members cannot be changed without prior approval of the Bank. However, the Bank will have the right to ask the bidder to replace a team member, at its sole discretion, during the course of the project.

t) The Bank requires that the bidder provides professional and objective services and at all times, hold the Bank's interest paramount, strictly avoiding conflicts with other assignments / jobs or their own corporate interest and act without consideration for future work. The bidder has an obligation to disclose any situation of actual or potential conflict that impacts its capacity to serve the best interest of the Bank, or that may reasonably be perceived as having this effect.

u) The Bank will award the contract to the successful bidder. No contract will exist between the Bank and any sub-contractor working for the bidder. The onus is on the bidder to ensure that all terms and conditions of the contract with the Bank are complied with by the bidder as well as any sub-contractors.

v) The bidder shall state whether it is currently involved in any litigation or arbitration or any other legal process which may result in financial or legal liability. The financial exposure as a result of the litigation arbitration or other legal process should be provided as well as the basis on which the financial exposure has been calculated. The bidder shall disclose other exposures that could result from the litigation, arbitration or other legal process and state whether this financial or other exposure materially prejudice the bidder's financial position or its ability to successfully and timely implement any contract which may be awarded to it pursuant to this RFP.

12.10   Language of Bid

All submission of bid including all correspondence and related documents must be made in English language only.

12.11   Bid Currencies

All quoted prices shall be in United States Dollar (USD).

12.12   Request for Clarifications

All prospective bidders wishing to request for clarifications on the content, form and/or any other details contained in the RFP document may write to the Bank as per format specified in Annexure VII using the contact details below:

Chairperson - Tender Committee
Bank of Mauritius
Sir William Newton Street
Port Louis
Mauritius
Email: Tender.Committee@bom.mu

All questions should make reference to specific sections of the RFP. If a change or explanation is deemed necessary for all potential bidders, the Bank will notify all potential bidders by addendum to the RFP which will be communicated to all bidders.

If questions are technical in nature, the Bank will identify the appropriate stakeholder and arrange for such questions to be answered. To ensure fairness, all questions and answers, business or technical in nature, must be addressed to the Chairperson - Tender Committee and sent in writing to the address specified at Section 12.12 or sent by email to Tender.Committee@bom.mu

The deadline for submitting any question is as per the Bid Information Sheet. Bidders' questions, along with the Bank's responses, will be aggregated in an anonymous fashion and communicated to all bidders. Bidders are advised to lump their queries.

12.13   Contacting the Bank

No bidder shall contact the Bank on any matter relating to its bid as from the closing date of submission of bids up and until the time the contract is awarded.

12.14   Award of Contract

The Bank will award the contract to the successful bidder whose bid has obtained the highest bid score in accordance with the provisions of evaluation criteria.

As stated in Section 3, the Bank reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the contract award, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Bank's action.

A bidder who gives false information in the bid document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future tender exercise at the Bank.

12.15   Notification of Award

Prior to the expiration of the period of bid validity, the Bank shall under cover of the LoA notify the successful bidder in writing that its bid has been accepted.

The LoA shall, subject to the signing of a contract, signify the formation of the contract between the successful bidder and the Bank. Other bidders shall, thereafter, be notified that their bids have not been successful.

12.16   Performance Security

Within 21 days after receipt of the LoA, the successful bidder shall sign the contract and deliver to the Bank a performance security equivalent to 10% of the contract amount in the form of a Bank Guarantee or Bond from a local commercial bank, denominated in USD as mentioned in the LoA. The Bank Guarantee shall be kept valid three months, beyond the tentative completion period of project.

In case the Bank decides to implement the project in a phased manner over several years, the contract value of the project will be determined by the Bank and will represent the main phase of the project.

In case where performance security is provided by the successful bidder in the form of a Bank Guarantee, it shall be issued at the Bank's option, by a bank located in Mauritius, or by a foreign bank acceptable to the Bank through a correspondent bank located in Mauritius.

In the event of the successful bidder being unable to service the contract for whatever reason, the Bank would invoke the performance bond guarantee. Notwithstanding and without prejudice to any rights whatsoever of the Bank under the contract in the matter, the proceeds of the performance security shall be payable to the Bank as compensation for any loss resulting from the bidder's failure to perform/comply with its obligations under the contract. The Bank shall notify the bidder in writing of the exercise of its right to receive such compensation indicating the contractual obligation(s) for which the bidder is in default and the bidder will have to pay it within thirty (30) days of the notice date.

The Bank shall also be entitled to make recoveries from the bidder 's bills, performance security, or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.

In case the project is delayed beyond the project schedule as mentioned in this RFP, for the reasons attributable to the bidder, the performance bank guarantee shall be accordingly extended by the bidder for the duration equivalent to the delays caused in the project.

12.17   Signing of Contract

Within thirty (30) days of receipt of the Contract Form, the successful bidder shall sign with date and return an original copy of the contract to the Bank.

12.18   Corrupt or Fraudulent Practices or financial or other serious crimes

The Bank requires that bidders observe the highest standard of ethics during the procurement process and execution of contracts. All bidders, their directors and shareholders, shall sign a declaration that they have not and will not be involved in corrupt or fraudulent practices or financial or other serious crimes.

Any proposal and/or award will be automatically rejected by the Bank if and when it determines that the bidder(s) has/have engaged in corrupt or fraudulent practices when competing for the contract in question.

Any bidder who is found to have been involved in corrupt or fraudulent practices shall be debarred from participating in future procurement at the Bank.

12.19   Liquidated Damages

The successful bidder with whom the Bank will enter into a contract for the provision and delivery of the work and services as prescribed in this RFP and to the satisfaction of the Bank will be required to pay liquidated damages for delays in the provision and delivery of those work and services up to a sum equal to 0.5% of the value thereof to the Bank for each week that delivery is delayed up to a maximum of 10% of the contract amount.

12.20   Non-Disclosure & Confidentiality

This document contains information that is privileged or otherwise confidential and is restricted to your company's use in responding to the Bank's requirements. You may not provide this document or any portion of this document to other service providers or suppliers outside your company, without prior written agreement from the Bank of Mauritius. Electronic and paper documents shall be destroyed or returned to the Bank upon completion of this RFP.

The addressee also acknowledges that information shared within the RFP document is the intellectual property of the Bank of Mauritius and is subject to a non-disclosure agreement as recognized by the copyright and intellectual property protection laws.

Participants to this RFP are de facto under strict non-disclosure and confidentiality agreement with the Bank and each party therefore mutually undertakes:

• Not to use or circulate the Confidential Information within its own organisation except solely to the extent necessary for the purposes intended by its disclosure, and not to use the Confidential Information in any way which would or might be harmful to the other party;
• To ensure that all persons to whom the Confidential Information is disclosed are made aware of its confidential nature and of their obligations under this Agreement;
• To effect and maintain adequate security measures to safeguard the Confidential Information from unauthorised access, use and misappropriation; and
• To notify the other party of any unauthorised use, copying or disclosure of the Confidential Information of which it becomes aware and to provide all reasonable assistance to the party to terminate such unauthorised use and/or disclosure.

12.21   Software License and Source Code Requirements

The supplier may place the source code (and the procedures necessary to build the source into executable form) for the application software, within 30 days of formal acceptance thereof, in escrow with a reputable agency acceptable to the Bank (preferably a bank or an established software escrow firm in Mauritius) for the duration of the Operations and Maintenance period. The escrow will be released and become the property of the Bank in the event that the contract is terminated for either default or insolvency, or should the supplier cease or give notice of intention to cease to provide maintenance or technical support services for the software as required by the contract.

The release will be effected by the agent within 15 days of receipt of written demand from the Bank thereof. The contents of the escrow shall be kept current with the most recent release of the software as long as the Bank contracts with the supplier for software maintenance, within 30 days of installation of said release into production operation at the Bank's site. The escrow shall be established so as to maintain the last three versions deposited, and the expense thereof shall be the responsibility of the Bank. The Bank may require, with 30 days' written notice, that the supplier demonstrate the currentness of the escrow contents by actually compiling the contents thereof on a suitably configured system to be provided by the Bank.

The supplier shall remedy any deficiencies noted through such an exercise within 30 days or face the imposition of liquidated damages. Such liquidated damages will be limited to the extent necessary for

the Bank, at its discretion, to attempt to obtain the current source from the supplier using all available and necessary means, make the necessary adaptations itself to correct the deficiencies, and/or purchase and install a replacement for the Software in question.

Should the contract be terminated for convenience of the Bank or terminate normally when the supplier has completed all its obligations thereunder, the escrow shall be released in favour of the supplier and the Bank shall have no further claim thereof.

12.22   Force Majeure

Neither party shall be liable for any delays or non-performance directly or indirectly resulting from circumstances or causes beyond its reasonable control.

12.23   Bank's right to terminate the process

The Bank may terminate the RFP process at any time and without assigning any reason. The Bank makes no commitments, express or implied, that this process will result in a business transaction.

This RFP does not constitute an offer by the Bank. The bidder's participation in this process may result in the Bank selecting the bidder to engage in further discussions and negotiations toward execution of a contract. The commencement of such negotiations does not, however, signify a commitment by the Bank to execute a contract or to continue negotiations. The Bank may terminate negotiations at any time without assigning any reason.

13.   Evaluation Methodology

All proposals will undergo a two-stage evaluation process, with evaluation of the technical proposal being completed prior to any price proposal being opened and compared. The Technical evaluation will include a Presentation / Proof of Concept (POC). Bidders will be called upon for the POC at short notice. The commercial proposal will be opened only for bids that pass the minimum technical score as per the Bank's internal evaluation methodology. The Bank will then evaluate the financial proposal.

The Bank will examine the bids to determine whether they are complete, whether they contain any computational errors, whether the required securities have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

The technical and commercial scores will be combined in accordance with the Bank's internal policy.

14.   Payment Terms and Schedule

14.1   Payment Schedule:

Payment would be linked to delivery and acceptance of each area mentioned below and bidders should provide breakdown of their total costs thereof:

14.1.1 Software Procurement Payment

Table 6:

Milestone per Phase	Payment	Comments
Software license procurement at contract allocation	20% of license fees	Bidder should share a detailed project plan at the beginning of the project with details of software license procurement plan. The same needs to be agreed between the bidder and the Bank.
Software installation and configuration in Production Environment	50% of license fees	
Final Go-Live	30% of license fees	

The licensing structure including supporting documents should be clearly explained and provided by the bidder in its proposal.

14.1.2 Hardware Procurement Payment

Table 7:

Milestone per Phase	Payment	Comments
Hardware procurement at contract allocation	25% of hardware procurement cost	The bidder should share a detailed project plan at the beginning of the project with details of hardware procurement plan. The same needs to be agreed between the bidder and the Bank
Hardware configuration and operationalization on commissioning of hardware	60% of hardware procurement cost	
Performance tuning after completion of first quarter of post-commissioning stabilization from the date of go-live	15% of hardware procurement cost	
A bank guarantee for the full value of the hardware and valid from award of contract to six months after commissioning of hardware, should be submitted to the Bank.		
Hardware commissioning includes:	Delivery of Hardware and Accessories Installation of Hardware Installation and configuration of OS	

14.1.3 Design, Development and Implementation Payment

Table 8:

Sr. No.	Milestone per Phase	Milestone percentage
1	On contract allocation	20%
2	On acceptance of 'BSRS'	10%
3	Successful completion of UAT and sign-off on the acceptance certificate On completion of testing, complete implementation, and successful Go-Live	45%

| 4 | Completion of training, knowledge transfer, and submission of technical and operational manuals | 15% |
| 5 | After completion of first quarter of post-go live stabilization support from the last date of go-live | 10% |

14.1.4 Support & Maintenance (S&M) Payment

Bidders should submit their Maintenance Costs related to Software License, Hardware and Support over the next 5 years after warranty period (where applicable), based on an agreed Service Level Agreement (SLA) (8x5). Bidders should also propose costs for a (24x7) SLA.

Bidders are also expected to provide estimated man-day rates in USD for any change requests post-implementation which should be fixed for the next five years.

Payments related to support and maintenance (S&M) will start after Preliminary Acceptance Certificate (PAC) is obtained for the system.

The Bank should have rights to latest versions of the application under the S&M contract.

Bidder should perform patch management of the application under the S&M. Bidder must follow a mutually agreed change management process. All changes will be initiated by Bank's user and should be approved by a Change Management Board (CMB) which will comprise designated Bank's staff members. After obtaining the costs, the CMB will provide the go-ahead for the changes.

The bidder should provide post-implementation on-site support for both hardware and software for a period of six months.

14.2   Payment Terms

The project shall follow a model wherein bidder will be required to finance all the expenses, capital and operational, related to their scope of work in this project. The Bank shall pay them back the above expenditure subject to certain terms and conditions described below:

- The bidder would be paid by the Bank for the above expenditure strictly as per the rates and amounts quoted by the bidder in their commercial proposal and agreed by the Bank.
- Payment related with Go-Live shall be made only after issuance of a Preliminary Acceptance Certificate (PAC).
- Support & Maintenance (S&M) period starts after issuance of all PACs.
- Payment will be subject to strict adherence to service-level agreement (SLA) signed between the Bank and the bidder. The bidder should provide an SLA for the Bank's approval.
- Payment shall be subject to penalty adjustment, if any, revealed during the SLA calculation. Following conditions for penalty would be applicable in case for not meeting the SLAs:
  o The Bank shall have the right to levy penalties for delay in the milestones mentioned above as per agreed project plan.
  o Delay and its magnitude shall be assessed by the Bank and conveyed to the bidder for necessary action.
  o Delay in two or more milestones which do not have a direct consequential relationship shall be treated separately.

- o Delay in two or more milestones which do have a direct consequential relationship shall be treated together only to the extent of time duration provided in the agreed project plan.
- The bidder should provide separate cost component for the procurement of hardware, software, licenses, design, development and implementation of system, post implementation support and any other components.

15.   Annexures

15.1   Annexure I: IT Architecture

IT Architecture.pdf

15.2   Annexure II: Functional Requirements Specifications

Worksheet CSA
RFP_CSA - v2021011

15.3   Annexure III: Information Security Requirements

1. A different platform should be provided for test which is distinct from production. Data from the production environment should never be used on the test platform. Data to be used on environments should be first authorised by the Bank.

2. Database proposed and implemented for the systems should allow for encryption of sensitive data, auditing of user access and transactions in the data base. Furthermore, it shall also provide data masking functionalities.

3. Unnecessary database users (e.g. root, admin), default passwords and stored procedures shall be eliminated and the principle of least privilege for the application database to defend against SQL query poisoning shall be followed.

4. During implementation, secured protocols shall be used to communicate with the database and efficient indexing shall be implemented for rapid data retrieval.

5. Application design should prevent Bank's IT support and admin resources to have access to or able to view live and production data as part of their normal day to day activity. Restricted administrative access should be implemented.

6. Solution provider shall apply the latest stable patches and updates available on all systems deployed. This shall not be done prior to testing on test environment at the Bank and the changes shall be authorised by the Bank.

7. Applied firmware, updates and hotfixes shall be downloaded only from sites recommended by the suppliers. Hardware or systems rendered useless due to wrong manipulation of firmware should be replaced by a new one and the damaged systems should remain in the custody of the bank.

8. OS Hardening shall be performed for all systems deployed for this solution especially on the production server prior to going live.

9. Application should provide user the functionality to setup complex passwords consisting of uppercase, lowercase and special characters. The application should have a separate user administration module for user access administration.

10. Proper mechanism shall be implemented to ensure that user access reviews are properly replicated to the DR site.

11. User Access to modules shall be on a least privilege and on a need to know basis.

12. Certificates to be used for HTTPs implementation shall not be self-generated and should be certified either by a certifying authority or by using an offline root CA.

13. The application should create session keys with lengthy strings or random number to prevent guessing of valid session key.

14. Application should regenerate session IDs after a successful login to prevent session fixation attack.

15. Application shall provide configurable session time-outs and account lockout with proper reset mechanism.

16. Encryption of data and session key that is transferred between the user and the web servers should be implemented. HTTPs or equivalent secured implementation will be required for all web based applications.

17. Security and risk mitigation should be formal design criteria in any Software Development Life Cycle (SDLC) process and start with threat and risk assessment of the proposed system, identification of controls, implementation of those controls, and testing and review. Security should not be an afterthought, and controls retrofitted in an ad hoc way only after security weaknesses are identified. Suppliers will be required to consider the OWASP Top Ten application security risks during the design and implementation of the systems.

18. Application controls for input, processing and output functions shall be implemented. They should include methods to help ensure data accuracy, completeness, validity, verifiability and consistency, thus achieving data integrity and data reliability. Also controls shall consist of edit tests; totals; reconciliations and identification; and reporting of incorrect, missing or exception data.

19. Automated controls should be coupled with manual procedures to ensure proper investigation of exceptions. Implementation of these controls helps ensure system integrity; that applicable system functions operate as intended; and that information contained by the system is relevant, reliable, secure and available when needed.

20. Application shall be designed to capture all user access and activity in the system. Logs shall be kept for auditing purposes. Archiving and rapid retrieval of these logs shall be a mandatory feature.

21. User access to application shall preferably be based on two-factor authentication. The solution provided shall be integrated seamlessly to prevent complexity and management overheads. The supplier may integrate their application with the Bank's existing two-factor authentication system which is based on Open OTP solutions.

22. Web server and Application server administration console should be disabled once the application and web configuration has been deployed. As far as possible, the admin console port should be changed from the default and a new well documented port should be used.

23. Anti-virus software/licenses (Symantec solutions) shall be provided for all servers deployed for this project. The update server should be provided to enable the live update of the anti-virus definition.

24. Security controls shall be implemented based on the risk management process of the Bank and it should be documented to explain how the inherent risks have been mitigated and the residual risk after the application of the security controls. This shall also document the control risk.

25. Vulnerability assessment and penetration testing (VAPT) shall be conducted on the systems prior to going live by a third party auditing firm who should provide a certificate. The cost of the VAPT should be borne by the bidder. The solution provider shall be responsible to apply the recommendation after the exercise to eliminate the vulnerability through proper technical, administrative or physical controls.

26. All production servers will be disconnected from the Internet. Updates and patches of the application will be done either manually or via a proxy server.

15.4   Annexure IV: Hardware requirements

The Bank envisions the hardware configuration to be made up of a system running at the main site, with one active and one instance at the DR site (1+1). Data should be replicated in near real-time replication with a switch-over to/from the main site satisfying RPO requirements of 2 hours and an RTO requirement of 30 minutes. Bidders are expected to propose and implement a workable solution that will be scalable and seamlessly deploy the different modules required by the Bank. Bidders may propose a multi-tier logical architecture with services properly segregated.

In a vision to optimise licenses, the bidder may consider re-using licenses of products already used at the Bank e.g. virtualisation software, database licenses, among others.

Computer Systems

The bidder should propose infrastructure solution from world leading enterprise IT solution provider. The system should be hosting the Production, DR, and Test environment. Bidders are expected to design an overall architecture that will allow critical services to be hosted on different systems or VMs to allow for performance, compatibility, security, ease of management and controls. Bidders will be expected to implement the different landscape (Production, DR, Test) in different network zones for security. This will be controlled by the Bank's firewall.

The system should provide dual Fibre/Ethernet connectivity for external appliances. The internal Ethernet switch from the hardware should provide features to segregate network traffic through VLAN configuration. The bidder will be expected to implement IP multi-pathing (MP) for all Ethernet connectivity through the internal switches to the external core switch at the Bank.

The Bank may perform testing to ensure that the provider has properly configured the FC and Ethernet multipathing. The Chassis should be equipped with redundant and hot swappable power and cooling modules.

The CPU and memory for the hardware should be properly sized to sustain the load as expected on the application based on the number of users and modules to be deployed. At normal time, the CPU and Memory of operations, the usage shall not be more than 50%. The number of hardware proposed shall be in line with the design proposed and meet the failover criteria.

The licensing cost of the software required shall be optimised through the use of appropriate virtualisation technologies.

In case the bidder is opting for Oracle Database, appropriate server should be proposed to host the database in order to optimize license cost. In term, the Bank's current database can be migrated on the new server. For non-Oracle Database, virtual machine running on VMWare virtualization should be used on Intel server. For memory type databases, bidders shall ensure that the sizing for the memory in the hardware has been adequately done and such memory allocation will not have any performance impact.

A detailed specification sheet of the proposed Hardware Systems should be provided by the bidder.

Storage

In case the bidder is opting for VMWare technology, VMware vSAN licenses or equivalent should be included in the proposal.

The number of disks on each system to be proposed should be properly sized by the bidder to cater to host all the applications to be provided with the project implementation with the expected growth for the next 5 years. The number of disks proposed should be in line with the manufacturers' recommendation to provide maximum performance and protection of data. The bidder can use a mix of Solid State Disks (SSD) and Hard Disk Drive (HDD).

Global hot spare on the storage should be provided to provide for disks failures and the number of such disk shall be in line with the recommended number for the total number of disks in the storage. The storage should provide hot swappable components such as disks, power supply and fan modules. The storage should be scalable for future expansion. Storage shall provide latest replication technology that will be required to replicate data between the Main and DR site.

A detailed specification sheet of the proposed storage should be provided by the bidder.

High-Availability (HA) and Failover

The bidder is expected to implement high-availability solutions, with dual power supply and network connectivity, as far as possible. Bidders shall ensure that the modules proposed operate effectively in a HA and failover mode. Bidders are requested to demonstrate in a detailed architecture and write-up on how the HA and failover will be implemented and demonstrate during the proof of concept. Application and data shall be available in case of a failover to the DR site. User access layer shall be readily available to maintain the required Recovery Time Objectives. Data for the applications shall be replicated to the DR site without any loss. Bidders are required to propose the technology that will enable real time replication of data. Application accessing any file share or repository outside the database used to maintain application consistency shall also be replicated real time. The technology used for the replication of the file shares or external repository shall be proposed or designed and implemented by the bidder.

Bidder is expected to implement failover mechanism to the DR site in case of loss of services in main site. The time taken to activate the DR site should be less than 2hr. Bidder shall pay attention that on the main site no data loss shall be accepted during the failover process and the reverting back of the services back to normal shall not exceed 24hr.

Please note that no failover features will be required for test environments.

A detailed specification sheet of the proposed HA technology should be provided by the bidder, with all features available and that will be implemented.

Network Connectivity

The Bank has 2 core Cisco switches model 4506E in VSS mode. Two free line cards slots are available on each switch. Bidders are required to quote for Cisco 10G ethernet line cards if the servers support 10G and the required SFP modules. Bidder is expected to configure the connectivity in aggregate and redundant mode. For copper 1G connectivity, free ethernet ports are available on the core switch, which can be used.
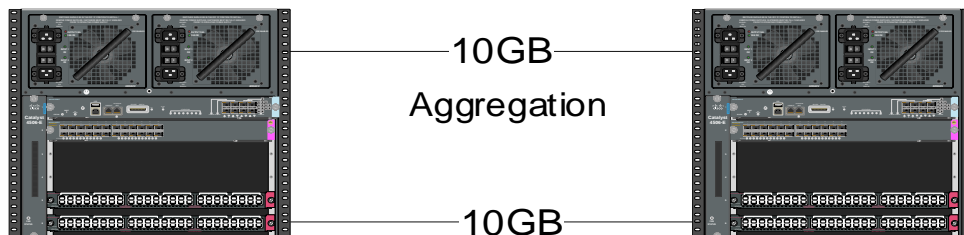
Data Backup infrastructure

The Bank currently uses Veritas Backup Exec v16 and EMC Datadomain as the backup solutions for different systems. The media used for the former is tape drive and the latter is on disks.

It is recommended to have one central backup solution for the Bank, both on disk and tape. It is required to use existing hardware (tape library and Datadomain) as far as possible. A list of existing equipment and license is found in the table below. Deduplication, compression and encryption, which is currently not available, shall be proposed. The system should have the capacity to replicate data backups to the DR site without the control of the backup software. However, the backup software should be able to retrieve data from DR to clients in the main site. The system should be scalable with the possibility to connect expansion trays to extend the backup storage capacity. The bidder is expected to provide a complete solution with all the licenses required on the client, master server, media server and the disk appliance to achieve the backup strategy.

	Head Office	DR Site
Appliance	EMC Datadomain DD2200 version 6.0.2.20 (Capacity 10Tb). No free slots available.	EMC Datadomain DD2200 version 6.0.2.20(Capacity 10Tb). No free slots available.
	IBM TS3100 System Storage Tape Library	
Software	Networker 9 (for Disk). Runs on virtual machine.	Networker 9
	Veritas 16 (for Tape). Runs on physical machine (IBM)	
Physical Server hosting Veritas	IBM System x3650 M4. CPU 2x4c. RAM 32GB	

The backup software shall have the following features:

- Graphical user interface for administration, management, configuration and monitoring of all backups
- Error Checking, Backup & Date verification, Error notification/reporting and alerting from the master and media server.
- Online Backup of Database to disk system through agents. Should support all major databases and specifically the database proposed for the solution.
- Features such as Job Scheduler and Viewing of scheduled operations on real time
- Allow backup administrators to monitor Job activity and designate the priority of jobs based on requirement.
- Provide management reports and report scheduling facilities
- Enable administrators to test run a job before a regularly scheduled backup Job Test Run checks tape capacity, user credential and other criteria to identify potential problems that can prevent successful job completion and notifies the administrator Confirm available backup capacity
- Provide Role Based Access on the management software
- Allow Automatic Job Retry in case of first time failure due to resource constraints
- Should be able to provide job logs that present a job summary, identification of success or failure conditions, provide detail of job history
- Should provide Incremental and differential Backup facility

A detailed specification sheet of the proposed backup technology shall be provided with all features available and how the different components proposed will be integrated for a workable solution.

Malware Detection and Protection

All servers proposed, installed and configured shall be provided with anti-malware software, to prevent attack by malwares. It should provide protection against even the most sophisticated attacks that evade traditional security measures, such as root kits, zero-day attacks, and mutating spyware. It should include proactive technologies that automatically analyse application behaviours and network communications to detect and block suspicious activities, as well as administrative control features that allow you to deny specific device and application activities deemed as high risk.

The Bank uses Symantec Endpoint Protection for the existing servers and bidder should cater for additional licenses for the new servers.

Data Cabinet

The Bank will provide rack space for the equipment.

Data Network

Bidder should provide and cater for all network (Fibre Optics and Copper) cables. All network patching works and labelling should be included.

Product Specifications for Main Site

1. **Server Hardware**

Item	Details	Remarks
Make		Should have proven track records
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
No of Servers/Blades Proposed		
Built in Devices		
No of Fans		
Power Required		
Power Redundancy scheme		
Power Monitoring and Management Mechanism		
Supported IO Modules		
Number of Switch Modules		Provide details on the feature of the switch module
Number of Fibre Modules (IPT or SAN Switches)	Specify	Provide details on the feature of the Fibre module
Quantity of Supported IO modules		
Rack Unit Required		
System Management and		

support tool Details		
Chassis RAS Features		
Maximum number of CPU supported		
No of CPU Proposed		
CPU Specification		
Maximum Memory supported on each server		
Memory Proposed on server		
Memory Specification proposed		
Memory Type supported		
No. of Expansion Slots Available		
No. of Free Expansion Slots		
Number of disk bays on each Blade/Number of free disk bays		
Maximum Internal storage on each server		
RAID Supported on each server		
Number of Network Interface Supported and Proposed		
Hot Swap Components on the server		
System Management and support tool Details		
Operating System Supported		

2. **Storage**

Item	Details	Remarks
Make		
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Quantity of Disks Proposed		
Quantity and Capacity of HDD per server (min 10k rpm)		
Quantity and Capacity of SSD per server		
Scalability		
Availability of spare disk?		
Number of free slots on each server		
Aggregate Speeds		
Management Access to device		
Management Software Supported		
AC Power Requirement		
Rack Unit Required		
No of Power Supplies		

3. **10GB switch module for Cisco 4506E**

Item	Details	Remarks
Make	Cisco	
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Quantity of Line Card (one on each core switch)		
Number of ports (10G)		
L2-4 Jumbo Frame support		
Total number of SFP modules provisioned		
Models of SFP modules		
Interface speed supported on SFP modules		
Fiber Optics patch cord model and quantity provisioned (5m)		
Power Rated		
Warranty		
Smartnet (8/5/4)		

4. **Failover/Licenses**

Item	Details	Remarks
Software Provider Name for failover to DR		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
No of license proposed		
Type of license proposed (Server Base or Virtual CPU base)		
Operating System Supported		
Fail over configuration to DR (Active-Passive)/ (Active-Active)		
Failover Mechanism to DR Services /VM failover		Bidder to elaborate in proposal how failover and recovery will be achieved.
List agent provided		
VSAN or equivalent		

5. **Backup Infrastructure**

Item	Details	Remarks
Name of Backup Software		
Version Proposed		
Software Provider Name		Manufacturer's ISO certificate to be provided

Release Date		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
No of license proposed		
Type of license proposed (Server Base or Virtual CPU base) or any other		
Server proposed for Master server		Bidder to provide a detail specification of the media server
Operating System Supported for Master		
Operating System Proposed for Master Server		
Server proposed for media server (if necessary)		Bidder to provide a detail specification of the media server
Operating System proposed for media server		
Support EMC Datadomain 2200 (Y/N)		
Support IBM System Storage TS3100 (Y/N)		
Support Encryption, data at rest (Y/N)		
Cluster Technology proposed for Media and Master Failover		Bidder to elaborate in proposal how failover will be achieved through clustering.
Any other license required		
Backup Software Specifications		
Graphical user interface for administration, management,		

configuration and monitoring of all backups		
Error Checking, Backup & Date verification, Error notification/reporting and alerting from the master and media server.		
Online Backup of Database to disk system through agents. Should support all major databases and specifically the database proposed for the solution.		
Features such as Job Scheduler and Viewing of scheduled operations on real time		
Allow backup administrators to monitor Job activity and designate the priority of jobs based on requirement.		
Provide management reports and report scheduling facilities		
Enable administrators to test run a job before a regularly scheduled backup Job Test Run checks tape capacity, user credential and other criteria to identify potential problems that can prevent successful job completion and notifies the administrator Confirm available backup capacity		
Provide Role Based Access on the management software		
Allow Automatic Job Retry in case of first time failure due to resource constraints		
Should be able to provide job logs that present a job summary, identification of success or failure conditions, provide detail of job		

history		
Should provide Incremental and differential Backup facility		
Backup Disk Appliance System (extension if necessary)		
Make		
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Quantity of System Proposed		
Raw Capacity of the Disk System		
Number of Controllers in Disk System		
CPU/Memory in per Controller		
Number of IO Modules in Enclosure		
Number and Types of IO Ports supported		
Number and Type host interface supported		
Data Management Protocol Supported in the Disk System		
Maximum number of disk slots in Disk System		
Number of Disk proposed in the Disk System		
Type of disk proposed		

Supported RAID level in the Disk System		
Maximum Number of expansion trays supported		
No of Expansion Slot proposed		
Software feature provided without license		
Software feature provided with license		
System Management Features		
No of Power Supply in Disk System		
Power requirement of Disk System		
No of Power Supply in expansion tray		
Power requirement of Disk System		
Data Management Protocol proposed		Bidder to elaborate in proposal how data backup infrastructure will be implemented
Data Backup Replication to DR Site		Bidder to elaborate in proposal how replication of the data backup will be implemented to the DR site and how backup can be restored to main site from DR site and vice-versa

Disaster Recovery Site Infrastructure

The bidder will have to provide the same technology stack for the deployment of the Disaster Recovery infrastructure. No failover will be required for the services, test training and UAT system will not be required at the DR site. Single unit of all equipment is expected at the DR site. The RPO will be as close as possible to the time of crash and RTO for all the application as part of this project will be 30 minutes. The Bank will operate a warm DR site for this project whereby data generated from the application will be replicated. All applications will be

installed and configured on specified hosts and once a DR situation arises, the consistency of the database is ensured and the application is started for the users to access.

For the data backup infrastructure, no failover of the master and media server will be required however, a tape drive must be provided for recovery purposes. The tape drive will be used in during Disaster Recovery events whereby data backup will be done on the disk system but a dual backup will be done on tape for additional data backup protection and tape will be off-sited.

The bandwidth connectivity between Head Office and DR site is 100MB, Layer 2. IP addresses of the servers can be on same subnet.

Product Specifications for DR site

1. **Server Hardware**

Item	Details	Remarks
Make		Should have proven track records
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Maximum number of Blade supported		
No of Servers Proposed		
Built in Devices		
No of Fans		
Power Required		
Power Redundancy scheme		
Power Monitoring and Management Mechanism		
Supported IO Modules		
Number of Switch Modules		Provide details on the feature of the switch module
Number of Fibre Modules (IPT or SAN Switches)	Specify	Provide details on the feature of the Fibre module
Quantity of Supported IO modules		
Rack Unit Required		

System Management and support tool Details		
Chassis RAS Features		
Maximum number of CPU supported		
No of CPU Proposed		
CPU Specification		
Maximum Memory supported on each server		
Memory Proposed on server		
Memory Specification proposed		
Memory Type supported		
No. of Expansion Slots Available		
No. of Free Expansion Slots		
Number of disk bays on each Blade/Number of free disk bays		
Maximum Internal storage on each server		
RAID Supported on each server		
Number of Network Interface Supported and Proposed		
Hot Swap Components on the server		
System Management and support tool Details		
Operating System Supported		

2. **Storage**

Item	Details	Remarks
Make		
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Quantity of Disks Proposed		
Quantity and Capacity of HDD per server (min 10k rpm)		
Quantity and Capacity of SSD per server		
Scalability		
Availability of spare disk?		
Number of free slots on each server		
Aggregate Speeds		
Management Access to device		
Management Software Supported		
AC Power Requirement		
Rack Unit Required		
No of Power Supplies		

3. **Top of the rack switch**

Bidders are required to quote for top of the rack 10G switches if the servers support 10G connection for the DR site. 10G SFP modules will be required for uplink on existing Cisco switches.

Item	Details	Remarks
Make		
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Quantity of Line Card (one on each core switch)		
Number of ports (10G)		
L2-4 Jumbo Frame support		
Total number of SFP modules provisioned		
Models of SFP modules		
Interface speed supported on SFP modules		
Fiber Optics patch cord model and quantity provisioned (5m)		
Power Rated		
Warranty		
Smartnet (8/5/4)		

4. **Backup Infrastructure**

Item	Details	Remarks
Name of Backup Software		
Version Proposed		
Software Provider Name		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
No of license proposed		
Type of license proposed (Server Base or Virtual CPU base) or any other		
Server proposed for Master server		Bidder to provide a detail specification of the media server
Operating System Supported for Master		
Operating System Proposed for Master Server		
Server proposed for media server (if necessary)		Bidder to provide a detail specification of the media server
Operating System proposed for media server		
Support EMC Datadomain 2200 (Y/N)		
Support IBM System Storage TS3100 (Y/N)		
Support Encryption, data at rest (Y/N)		
Cluster Technology proposed for		Bidder to elaborate in

Media and Master Failover		proposal how failover will be achieved through clustering.
Any other license required		
Backup Software Specifications		
Graphical user interface for administration, management, configuration and monitoring of all backups		
Error Checking, Backup & Date verification, Error notification/reporting and alerting from the master and media server.		
Online Backup of Database to disk system through agents. Should support all major databases and specifically the database proposed for the solution.		
Features such Job Scheduler and Viewing of scheduled operations on real time		
Allow backup administrators to monitor Job activity and designate the priority of jobs based on requirement.		
Provide management reports and report scheduling facilities		
Enable administrators to test run a job before a regularly scheduled backup Job Test Run checks tape capacity, user credential and other criteria to identify potential problems that can prevent successful job completion and notifies the administrator Confirm available backup capacity		
Provide Role Based Access on the		

management software		
Allow Automatic Job Retry in case of first time failure due to resource constraints		
Should be able to provide job logs that present a job summary, identification of success or failure conditions, provide detail of job history		
Should provide Incremental and differential Backup facility		
Backup Disk Appliance System (if necessary)		
Make		
Model		
Manufacturer		Manufacturer's ISO certificate to be provided
Release Date		Certificate from Supplier to be provided
End of Life Date from supplier		Certificate from Supplier to be provided
End of support Date from supplier		Certificate from Supplier to be provided
Quantity of System Proposed		
Raw Capacity of the Disk System		
Number of Controllers in Disk System		
CPU/Memory in per Controller		
Number of IO Modules in Enclosure		
Number and Types of IO Ports supported		
Number and Type host interface supported		

Data Management Protocol Supported in the Disk System		
Maximum number of disk slots in Disk System		
Number of Disk proposed in the Disk System		
Type of disk proposed		
Supported RAID level in the Disk System		
Maximum Number of expansion trays supported		
No of Expansion Slot proposed		
Software feature provided without license		
Software feature provided with license		
System Management Features		
No of Power Supply in Disk System		
Power requirement of Disk System		
No of Power Supply in expansion tray		
Power requirement of Disk System		
Data Management Protocol proposed		Bidder to elaborate in proposal how data backup infrastructure will be implemented
Data Backup Replication to DR Site		Bidder to elaborate in proposal how replication of the data backup will be implemented to the DR site and how backup can be restored to main site from DR site and vice-versa

15.5   Annexure V: Quality Assurance

Quality Assurance Checklist:

- The bidder should set up an IT Implementation Quality Assurance and Risk Management Team.
- The bidder should review and report to the Bank on the overall Project Charter (for business Go-Live) and provide inputs to align the programs.
- The bidder should provide inputs in view of the selection of members from the Bank to form part of the Quality Assurance and Risk Management team.
- The bidder should assist in identifying the needs for the Quality Assurance and Risk Management team setup and assist in prioritizing the same.
- The bidder should review IT project risks, issues, and budgets and provide inputs for mitigation of risks and issues related to IT projects.
- The bidder should ensure that the implementation methodology complies with all the Bank approved enterprise policies, IT principles, IT policies, and IT standards.
- The bidder should ensure through monthly audits and reviews that technical implementation shortcuts (e.g., hard coding of code, implementation of the detailed design, coding practices that reduce the flexibility of the solution etc.) are not adopted during IT solution implementation. The bidder will share the results of these audits/ reviews with the Bank and any exceptions will be duly reported.

Quality Assurance Deliverables

The bidder should deliver on the following during the course of their association with this end-to-end IT solution implementation project:

- Periodic analysis and reporting to the Bank of planned versus actual progress of the delivery of end-to-end IT solution implementation tasks. This analysis will include tasks with high slippages, ideas/suggestions to improve the progress.
- Review and report on the risk management plan prepared, assessing the quality of risk identification, likelihood of occurrence, impact on timely and successful implementation of the IT project, and risk mitigation strategies.
- Regular review of the IT project risks, risk intensity, and risk mitigation steps required and steps taken and suggest course corrections.
- Ensuring the tracking of the risk management plan to closure and reporting to the Bank thereon.
- Review and report to the Bank on whether the IT solutions implemented are compliant with the Bank's IT standards, policies, and principles.
- Prepare and present an IT Solution Quality Assurance Plan for approval by the Bank.
- Undertake quality audits and reviews in accordance with the IT Solution Quality Assurance Plan and report to the Bank thereon.

- Review and report to the Bank on enterprise and IT policies, standards, and principles compliance issues of the IT solution being implemented and assist the Bank in resolving the issues. Compliance audits of IT solution during implementation are mandatory.
- Review and report to the Bank on any variations to the agreed IT architectures and technical designs during the end-to-end IT solution implementation.
- Review the software programs being developed on an ad hoc basis and report to the Bank of any discrepancies in coding practice (e.g., hard coding, implementation of the design).

15.6   Annexure VI – BID Form

Chairperson Tender Committee

BANK OF MAURITIUS

SIR WILLIAM NEWTON STREET

PORT LOUIS

Dear Sir / Madam,

REQUEST FOR PROPOSALS - MCIB PROJECT

In accordance with the Instructions to Bidders and Specifications for the execution of the above works, we, the undersigned offer to undertake the above works to the entire satisfaction of the Bank:

1. We acknowledge that the Appendix to the 'Bid Form' forms part of our bid.

2. We undertake, if our bid is accepted, to commence the works as soon as is reasonably possible after the receipt of the Letter of Acceptance.

3. We agree to abide by this bid for a period of 180 days from the date of bid opening and it shall remain binding upon us and may be accepted at any time before the expiry of this period.

4. Unless and until a formal agreement is prepared and executed, this bid together with your written acceptance thereof shall constitute a binding Contract between us.

5. We understand that you are not bound to accept the lowest bid or any bid you may receive without giving any reason whatsoever.

Name of bidder: …………………………………………………………………………………………………

Address: ……..

Telephone: ……………………………………………………………………………………………………….

Email: ……….

[Insert Name and Signature of First Director]   [Insert Name and Signature of Second Director]

[Insert Date]   [Insert Date]

Company Seal:. ………………………………………………………………………………………………………

15.7   Annexure VII – Request for Clarifications

Bidders requiring specific points of clarification may communicate with the Bank during the specified period using the following format. The column Clarifications is reserved for the Bank to respond to bidder's queries.

Query Serial No.	Section/Clause in the RFP *(along with the page number)*	Current Specification	Query (In terms of Clarification or Modification or Addition of New clause)	Clarifications
1				
2				
3				
4				

15.8   Annexure VIII – Team Structure

Please provide information about the resources that will be deployed by the bidder for proposed implementation as per the template below. Please provide this information phase wise.

Item	Onsite Effort	Offsite Effort
Total number of persons/ month to be deployed for the following stages during the project: • Implementation and development • Go-Live • Post-Go-Live stabilization • Warranty • Annual maintenance		
Persons/ month of resources with less than five years of experience		
Persons/ month of resources with greater than five years and less than ten years of experience		
Persons/ month of resources with greater than ten years of experience		
Persons/ month for Program Manager		
Persons/ month for Subject Matter Expert (SME)		
Persons/ month for Solution Architect		
Persons/ month for System and database Administrator		
Persons/ month for QA Lead		

Project Effort

Solution (MCIB)	Project Stages	Team member (20+ years of work experience)	Team member (15 to 20 years of work experience)	Team member (10 to 14 years of work experience)	Team member (5 to 9 years of work experience)	Team member (3 to 5 years of work experience)
MCIB	Requirement Gathering (BSRS)					
	Development					
	UAT					
	Rollout					
	Operation & Maintenance					
Add more solutions as per your proposed solution/architecture						
Total						

15.9　　Annexure IX - Compliance with Bidding Terms and Conditions

Please specify all deviations from the contractual conditions as given in the Bidding terms and conditions (Section 12.9), along with the relevant clause as mentioned in the RFP document as per the template below:

Serial. No.	Clause number	Text in the clause	Description of the deviation

15.10   Annexure X – CVs of the project team personnel

Please submit the CVs of the proposed project team personnel as per the format provided below. The CVs of the identified project manager, project lead(s), and all other team members constituting the project team needs to be provided here.

The following are mandatory profiles, which the Bank considers as "Key Personnel" for this project-

1. Project Manager
2. Project Team
3. Subject Matter Expert (SME)
4. Solution Architect
5. System and database Administrator
6. QA Lead

These mandatory profiles will be assessed by the Bank team, so please provide the CVs of those team members who will be part of the project.

Format for the Profiles	
Name of the person	
Current Designation/Job Title	
Current Job Responsibilities	
Proposed Role in the Project	
Proposed Responsibilities in the Project	
Academic Qualifications: • Degree • Academic institution graduated from • Year of graduation • Specialization (if any) • Key achievements and other relevant information (if any)	
Professional Certifications (if any)	
Total Number of Years of Relevant Experience	
Number of Years with the Current Company	
Summary of the Professional/Domain Experience	
Number of Complete Life Cycle Implementations of projects Carried Out	
The Names of Customers (Please provide the relevant names)	
Past Assignment Details (For each assignment, provide details regarding name of organizations worked for, designation, responsibilities, tenure) Prior Professional Experience covering: • Organizations Worked for in the Past	

- o   Organization name
- o   Duration and dates of entry and exit
- o   Designation
- o   Location(s)
- o   Key responsibilities

- Prior Project Experience
  - o   Project name
  - o   Client
  - o   Key project features in brief
  - o   Location of the project
  - o   Designation
  - o   Role
  - o   Responsibilities and activities
  - o   Duration of the project

Please provide only relevant projects.

15.11   Annexure XI – Format for Commercial Bids

Total Overall Cost for Five Years (for the whole project)

Serial No.	Item	Total Cost
1.	Software License	
2.	Hardware	
3.	Design, Development, and Implementation+ post Go-Live Support	
4.	Support &Maintenance for five years	
5.	Taxes and Duties	
	Total	

Breakdown of cost per module

(Module 1) cost:

Serial No.	Item	Total Cost
1.	Software License	
2.	Design, Development, and Implementation	
3.	Support &Maintenance for five years	
4.	Taxes and Duties	
	Total	

(Module 2) cost:

Serial No.	Item	Total Cost
1.	Software License	
2.	Design, Development, and Implementation	
3.	Support &Maintenance for five years	
4.	Taxes and Duties	
	Total	

(Optional components, if any) cost:

Serial No.	Item	Total Cost
1.	Software License	
2.	Design, Development, and Implementation	
3.	Support &Maintenance for five years	
4.	Taxes and Duties	
	Total	

Software Procurement Cost:

Serial No.	Software Component	OEM	Make and Version	License Arrangement	No. of Licenses (Provide	Price per license	Total cost (Inclusive of all	Break up of Taxes

				environment-wise break up)		Taxes)	and Duties
i.							
ii.							
iii.							
iv.							
v.							
Total							

Hardware Procurement Cost:

Serial No.	Hardware Component	OEM	Make and Version	Description (OS, Processor, Architecture, RAM, HDD, etc.)*	Quantity (Provide environment-wise break up)	Unit Price	Total cost (Inclusive of all Taxes)	Details of Taxes and Duties
i.								
ii.								
iii.								
iv.								
v.								
	Total							

*Hardware description should clearly mention about the scalable components (e.g. RAM, HDD etc.) and indicate the rate for future scale up.

Design, Development, and Implementation Fees

Serial No.	Solutions / Modules/ Sub-Modules	Fees	Taxes	Total Cost
i.	Module 1			
ii.	Module 2			
iii.	List down other systems			
	Total			

Serial No.	Solutions / Modules/ Sub-Modules	Fees	Taxes	Total Cost (man-month)
i.	Post Go-live Onsite support			
ii.				
iii.				
	Total			

Support and Maintenance Cost:

Serial No.		Year 1		Year 2		Year 3		Year 4		Year 5	
		Fees	Taxes	Fees	Taxes	Fees	Taxes	Fees	Taxes	Fees	Taxes
i.	Module 1										
ii.	Module 2										
iii.	List down										

	other systems									
	Total									

Man-Day Rate for change requests:

Description	Man-Day Rate (USD)

Bill of Materials:

Bill of Materials - v20201210.xlsx