BANK OF MAURITIUS

Replacement of existing data network and PABX infrastructure

06 March 2015

BANK OF MAURITIUS
Website: https://www.bom.mu

INVITATION FOR BIDS
Replacement of existing data network and PABX infrastructure

1. The Bank of Mauritius (Bank) invites bids in sealed envelopes from eligible and qualified bidders for the supply, installation, configuration and commissioning of network equipment and Voice over IP (VoIP) support and telephony equipment, as described in the bidding documents.

2. A complete set of the bidding documents in English may be downloaded from the Bank's website at https://www.bom.mu

3. Bidders may send questions, if any, by email to CTC@bom.mu or write to Chairperson Tender Committee, Bank of Mauritius, Sir William Newton Street, Port Louis, Mauritius, by 17th March 2015 at latest.

4. Bids must be deposited in the **Tender Box B** at the address given below on or before **Monday 6th April 2015 up till 15.00 hours (local time)**. Electronic bidding shall not be permitted. Late bids will be rejected. Bids should be addressed to:

The Chairperson, Tender Committee
Replacement of existing data network equipment and PABX infrastructure
Bank of Mauritius,
Sir William Newton Street,
Port Louis
Mauritius

5. The Bids should be submitted in a sealed envelope and should contain a Technical Proposal and a Financial Proposal. The Technical Proposal and the Financial Proposal should be separate documents and provided in separate sealed envelopes within the main envelope. They should be marked appropriately as per specifications in bidding documents.

6. The Bank reserves the right to accept or reject any bid and to annul the bidding exercise and reject all bids without thereby incurring any liability to any bidder or any obligation to inform bidders of the grounds of its action.

Bank of Mauritius
06 March 2015

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Schedule of Activities and Events

Sr No.	Particulars	Timeline (Date and Time)
1	RFP Issuance Date	06 March 2015
2	Last Date of Receiving Clarifications Before the Pre-bid Meeting	17 March 2015
3	Pre–bid Meeting	24 March 2015
4	Date for publishing Pre Bid Responses	27 March 2015
5	Last Date of Submission of RFP Response (Closing Date)	06 April 2015

1. Introduction

1.1 Purpose

The general intent of this document is to identify the most qualified bidder(s) to assist the Bank of Mauritius ("BoM" or "Bank") in the implementation and support of bidder-provided data network equipment and PABX infrastructure. Bidders are expected to submit Technical and Commercial proposals, as noted in Section 3.3 (Method of Submission of Bids) and Section 3.2 (Format of Responses), by proposing a solution and a plan that meet the requirements provided in Appendix C (Technical Specifications) and related appendices 'Appendix A' through 'Appendix G'.

The requirements included within this document are critical factors in evaluating the adequacy of a bidder's proposed solution. All requirements must be addressed by the bidder. Further, the bidder must provide a detailed implementation plan that addresses requirements, dependencies, assumptions, costs, and timelines. It is also requested that the bidder provides both technical and functional documentation regarding the proposed solution.

The Request for Proposal (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 Bank of Mauritius and any successful bidder as identified after completion of the selection process as detailed under Section 4 Evaluation Methodology.

1.2 Background

The Bank of Mauritius is the regulatory authority for financial institutions as defined in the Banking Act, 2004 including commercial banks, money changers, non-deposit taking institutions and foreign exchange dealers. The Bank is currently making use of network equipment and components which are reaching or have reached their end-of-life, and intends to implement new system features, which cannot be supported by the existing network devices.

The Bank is therefore inviting responses from eligible bidders to replace the existing data and voice network devices inclusive of installation, implementation, configuration, testing, training and support. The proposed solution should comply with the requirements laid out in the later sections of this RFP.

1.3 Overview of the RFP

This section outlines the contents of the document and provides specific guidance on how each section should be used:

- **"Section 2 Scope of Work"** provides all the system requirements which must be considered by the bidder when proposing a detailed solution design;
- **"Section 3 Instructions for Bidders and General Conditions"** provides instructions to bidders as well as the terms and conditions which must be followed by a bidder for the response to be accepted;
- **"Section**

- **4. Evaluation** Methodology**"** provides the procedure for bid evaluation and criteria which will be considered when rating the technical and financial proposals; and
- **"Section 5.Appendices"** provides all the forms and tables which need to be filled in by the bidder and included in respective sections in the response to this RFP.

2.Scope of Work

2.1 Current State of Infrastructure

The current network architecture at the Bank allows remote connection from the licensed financial institutions and other authorised organization. The Bank is also connected to its Disaster Recovery site (DR) and Rodrigues office. Since the different entities connect to the Bank to access critical applications on a daily basis, it is of utmost importance to have a robust and resilient network infrastructure for an effective service delivery.

The Local Area Network (LAN) of the Bank connects the 19 levels for internal communications. There are approximately 250 workstations across 19 levels. The Bank currently has 13 physical servers, 32 blade servers running in a virtualised environment to serve the different purposes of the Bank. The level switches are generally connected to the core switches through fibre optic cables in redundant mode.

The table below provides an overview of the number of switches currently in use at the bank.

EXISTING SWITCHES / FIREWALLS				
LEVEL	**NO. OF 24-PORT SWITCHES**	**NO. OF 48-PORT SWITCHES**	**NO. OF 32-PORT SWITCHES**	**NO. OF 30 PORT SWITCHES**
0,1, Mezzanine	3			
3		1		
4		1		
5	1			
7	1	1		
8	1	1		
10	1	1		
11	1	1		
12		1		
13		1		
14		1		
15		1		

EXISTING SWITCHES / FIREWALLS				
LEVEL	**NO. OF 24-PORT SWITCHES**	**NO. OF 48-PORT SWITCHES**	**NO. OF 32-PORT SWITCHES**	**NO. OF 30 PORT SWITCHES**
16	1			
19		2		
Distribution Switch (Redundant mode)		2		
Core Switch (Redundant mode)				2
Server zone Switch	1	1		
Server zone Switch	2			
Server zone Switch	2			
Firewall	2			

The DR site consists of 40 work spaces and same number of servers as at the main site. The main site and the DR site are currently operating in an active-passive failover mode.

The current telephony system consists of approximately of 250 IP phones and a PABX server.

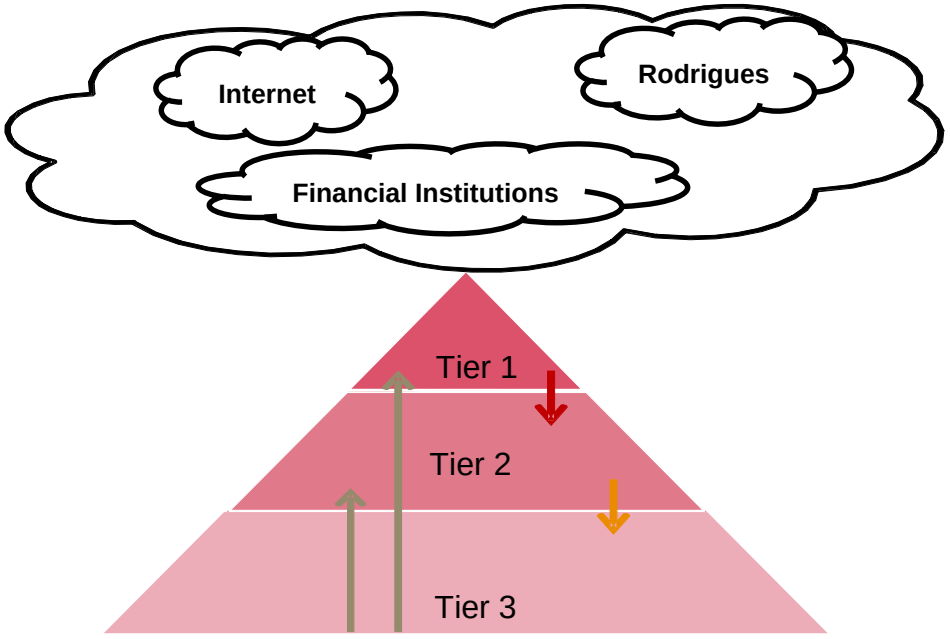
2.2 Solution Requirements

This is a turnkey project and the bidders will be responsible for end to end implementation of the solution proposed by them. Bank will not provide man power or any other support for implementation of the plan. The bidders are expected to envisage costs associated with the following components:

- Core Switch
- Level Switch / Access Switch
- Firewalls
- Intrusion Prevention System
- Network intelligence tool
- PABX Infrastructure
- Specification of phones
- Wireless Infrastructure
- Wireless and Cable LAN tester

2.2.1 Data Network Infrastructure Requirements

As the applications accessed by the different entities are web-oriented, the model used to provide a secure application hosting facility should therefore be of minimum three-tier architecture. Such model offers separate presentation, application and data layers. The graphic below depicts the standard service communications trust model.



The bank requires at least a three-tier architecture based on the guidelines provided below. However, it is open to the bidder to propose additional tiers based on good practices for added security. Details of the proposed model should be documented in the response to this RFP.

This model segregates each tier, using firewalls to separate each layer. Communications originating in a less trusted tier may only access the next tier down (Tier 1 being the least trusted and Tier 3 being the most trusted zone). Similarly, segregation is maintained by only allowing communication from more trusted to less trusted tiers to occur one tier at a time. The combination of segregation and firewall restrictions between layers provides an increasing level of trust in lower layers.

Each layer of the hosting model should provide certain functionality, such as Load Balancing of servers. Resilience and high availability fail-over, of core components is also a deliverable.

Network Segregation

The web, application and data zones should be hosted within 3 separate tiers. The design should cater for “ring fencing” of each web service and restricting communication between nodes by “communities”. Within each zone the underlying switch fabric would need to support Private Virtual Local Area Network (PVLAN) functionality. The switches would be configured with “promiscuous” firewall ports able to communicate with any host within the tier, and individual servers connected to “community” ports only able to talk to other servers within the same “community”. This design retains control into and out of the tier by the firewall / routing devices and restricts which servers can communicate with each other.

Tier 1 – Untrusted layer

Tier 1 is used to provide web services to the outside world (commercial banks, general public). Tier one layer will be filtered via an external firewall and subsequent traffic to other tiers will pass through an internal firewall. Tier 1 layer can be segregated into different zones (e.g. web services accessible to licensed financial institutions and web services provided through internet to public) to enhance the security of this tier.

Tier 2 – Semi-trusted layer

The Tier 2 layer handles requests for information from presentation servers and retrieves this information from the database server in the Database layer, applies various processing functions to that data, and send the results back to the devices in Tier 1. Processing requests from Tier 1 will go through an internal firewall before arriving at Tier 2. Tier 2 can be segregated into different zones to host application servers that are accessed by financial institutions and internal servers.

Tier 3 – Trusted layer

Tier 3 stores the Bank's application data. The database layer is the most secure and logically segregated area of the hosting network. Tier 3 hosts database servers that store information. This tier keeps data neutral and independent from Tier 2. Requests from Tier 2 to Tier 3 will have to go through the internal firewall before reaching Tier 3. Tier 3 can be segregated into multiple zones to host internal and externally accessed database servers. (E.g. database servers receiving request from other institutions and those handling requests from the internal LAN only).

Management Zone

The management zone will host all the system administrators' machines. They will be provided access to the different zones from the internal network.

Configuration

The servers at the Bank are not currently configured in the tiered network architecture. It is the responsibility of the successful bidder to configure the network devices being implemented (including switches and firewalls) to assign the required network segregation and advise the Bank on the changes required to be made on other devices and servers (e.g. change of IP address). The successful bidder should work in accordance with the Bank and other third parties to minimise any service disruption when making changes to existing configurations and setting up the new devices.

Below are generic guidelines for the tiered network architecture:

- Network traffic security:
    - External Firewall Policy - Only HTTP or HTTPS traffic or any future agreed port, such as LDAP proxy, should be allowed from the internet or WAN through into the web interface. All the external facing servers must have granular level policy defined to allow service access without compromising the security.
    - Internal Firewall Policy - Only known application ports should be open between the web (Tier 1) and application (Tier 2) layers.
    - Internal Firewall Policy - Only known data ports should be open between the application (Tier 2) and database layer (Tier 3).
    - Any traffic initiated from the web interface (Tier 1) must terminate within a firewall protected zone.
    - Internal User – internal user can have direct access to Tier 2 and Tier 3 after going through the internal firewall.
    - All internal and external traffic should go through a firewall, which should be configured to detect and block (and alert for) any malicious traffic.
    - The firewall must be in active/passive mode, providing full UTM functionalities.
    - The firewall must provide server load balancing capabilities.
- Proper load balancing shall be configured to prevent overload of network devices and to maintain optimal

response time.

- Redundancy for critical network devices should be catered for. There should be no single point of failure in the proposed network architecture.
- Access from the internet to protected resources must be via a two-factor authentication VPN.
- A network intelligence tool should be provided so that administrators within the management VLAN receive real time alerts for any system downtime, service degradation or intrusion attempt.

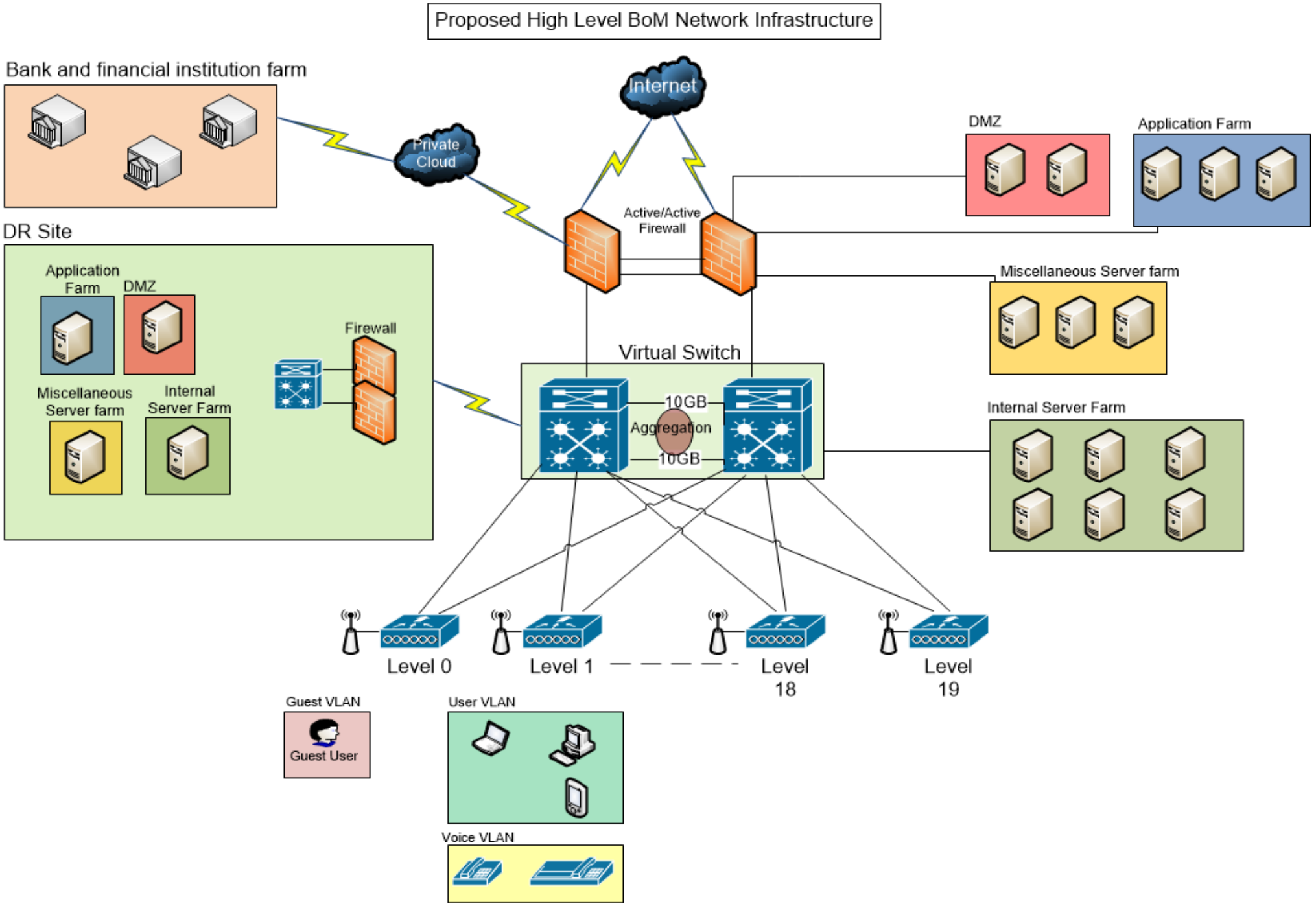
Guiding principles

Security - The information architecture should ensure confidentiality, authenticity, and integrity, and comply with legislation. There should be a reliable exchange of information that can take place in conformity with an established security policy, where information is protected against unauthorized access, denial of service, and intentional / accidental modification. AAA protocol must be implemented on all devices, using a RADIUS or TACACS server. The server must be able to provide report generation. A virtual machine will be made available for the successful bidder.

Availability - Systems should be capable and highly available. Both the data and voice network components should be reliable and this may imply clear setting of service level agreements (SLAs) and catering for redundancy (no single point of failure) in the architecture.

Performance and Scalability - Systems should have an acceptable response time and the infrastructure should be scalable to allow additional capacity, bandwidth and volume of users in the near future and beyond.

Flexibility - The systems should be easily adjustable to new frames of reference as well as upgrades at a predictable cost as provided in the cost breakdown.


Proposed High Level BoM Network Infrastructure
Bank and financial institution farm
Internet
Private Cloud
DMZ
Application Farm
Active/Active Firewall
DR Site
Application Farm
DMZ
Firewall
Miscellaneous Server farm
Internal Server Farm
Miscellaneous Server farm
Virtual Switch
10GB
Aggregation
10GB
Internal Server Farm
Level 0
Level 1
Level 18
Level 19
Guest VLAN
Guest User
User VLAN
Voice VLAN

2.2.2 Disaster Recovery Site Requirements

The existing firewalls at the Bank's head office are on Juniper technologies (SRX550, active/passive). These firewalls need to be redeployed at the DR to protect the infrastructure. The bidders must provide quote for full UTM licenses for the appliances. The Bank also requires new network equipment for its DR site located in a separate physical location in Mauritius. The Bidder is required to propose for the following equipment at the DR site:

- IPS supporting the external firewall;
- Core switch (Layer 3 48ports)
- Integrate the DR to Head Office on Layer 2 connection.

Details of the above equipment should be provided as required in Appendix C - Technical Specifications and Appendix D.

2.2.3 Wireless Infrastructure

The Bank requires user mobility on every floor. This includes data traffic as well as voice, which will be in 2 different VLANs. The surface area on each floor is not too large and one access-point on each floor would be sufficient. However bidders are welcome to make preliminary site survey before quoting.

The average number of users/devices that would connect to a single access-point concurrently would be in the range of 5 to 10. However the bidder must make provisions on 3 floors where the access-points must support a maximum number of concurrent devices of around 40.

The wireless system must also be configured to allow guest users to access Internet freely. However proper filtering/segmentation must be done, (e.g. private VLAN), so that these users/devices must at no point in time have access to the network of the bank and to each other.

Management and monitoring

The access-point must be managed through a wireless controller.

Real-time monitoring is required on all access-points and as well as connected devices. Administrators must be able to block a particular connected device with simple clicks.

2.2.4 PABX Infrastructure Requirements

The Bank is inviting bidders to propose a new telephony system at the main site which should support the phone features (refer to TABLE XIV: PHONE FEATURES in Appendix C) and also meet the following requirements provided below:

Flexibility

System critical components including Voice Gateways, call managing software and power and network components shall be resilient such that no failure in any critical component of the telephony system shall result in loss of service for any user of the system.

Redundancy

The proposed solution should cater for redundancy of critical components. Critical components consist of call managing software / control server / equipment, power supplies, and gateways but not limited to the aforementioned devices. The solution should cater for 1 + 1 redundancy at the main site only and no PABX hardware is required at the DR.

Scalability

The proposed solution should be scalable. Bidders should cater for addition of new telephone sets in future. Bidders are invited to include pricing of additional equipment for any future purchase (within duration of contract between bidder and the Bank) and implementation issues and challenges if the Bank decides to add new telephone sets to the proposed solution.

Availability

The telephony system shall provide high levels of availability. As such the system must be designed so as to minimize any service outage due to downtime in any system component.

Numbering Plan

The management of the telephony traffic, in addition to the mapping of each telephone number to each telephone set, will be handled by the telephony system. The telephony system should provide an internal numbering plan which will be accessible both internally through 4 digit extension and externally.

Mobility

The telephony system must provide call mobility through smart mobile phone, supporting Android, IOS, Blackberry and Windows OS.

Integration

The system must be integrated with the bank's Microsoft Active Directory.

Call Managing Software

The actual solution shall include a call managing software / call control, switching and gateway equipment and software for proper administration and management of features of the new telephony system.

Management and administration

The administration and management of the system should be through a web based interface.

Quality of Service and LAN segregation

Virtual LANs have to be implemented to segment voice traffic, and QoS priorities set to improve on call quality and network performance.

Class of Service

Proper class of service has to be implemented to define permissions different extensions will be having on the PABX system.

Switching Capabilities

The telephony system should be able to provide for the following call switching capabilities:

1. Voice Handling
2. Integration with media like for example fax, e-mail and video but also cater for other types of applications through the use of Computer Telephony Integration (CTI). The CTI feature is optional.

Recording of voice calls

The system should enable the recording of voice calls as well as inform external parties calling the Bank that their voice conversation may be recorded. The response should include details of the different types of storage units which can be used, quality of voice messages recorded and the storage size recommended (including for archiving). Proper access controls have to be implemented in relation to access to saved voice files and stored files must be encrypted.

The storing period must be adjustable and should be able to store externally for backup.

Remote access

Bank's staff must be able to use the telephony system remotely, both through VPN and VPN-less.

Voice Mail

Each user must have a voice mail account and message personalisation must be possible. Notification must be sent through email, integrated with the Microsoft Exchange and secured over SSL or TLS.

Reporting

A comprehensive call detail records must be implemented. Customised report generation must be available and the data must be available for at least 6 months.

Telephone features.

Telephone users at the Bank have been classified into five categories. A brief overview of the different categories is provided below:

Executives: Comprises of top management of the Bank

Management: Comprises of Heads and senior members of each department

Users: Comprises of analysts and officers

Meeting rooms: Comprises of meeting rooms on all levels

Reception: Consists of receptionists and phone operators

The features required in the phone set by each category are provided in TABLE XIV: PHONE FEATURES.

IP Phone sets

The following quantity of IP phones (hardware) will have to be provided as stated in the table below.

Description	Quantity
To be used by all Executives	3
Management	20
Users	200
Meeting rooms	15
Reception	5 + 1 PC**

**Desktop Software for phone application has to be installed on the existing PCs.

2.2.5 Other Requirements

Time Synchronisation

The successful bidder is expected to configure one device as primary NTP (Network Time Protocol) server and all network, security and PABX infrastructure devices will need to be synchronised with the primary NTP server.

Cabling

Bidders must quote for a portable network tester that will analyse performance of copper cables, fibre optics and wireless. The solution must provide graphical representation of the results. Furthermore:

- The successful bidder should initiate the engagement with an initial assessment of the Bank's network to understand the cabling pathways and identify gaps related to cabling.
- Certain fibre optic cables may require replacement and the successful bidder shall budget to replace missing or damaged fibre optic cables across the floors.
- All cables and ports should be properly labelled and documented.
- The cost for any additional cabling (if required) will be borne by the Bidder.
- Tagging and Tracing of Network Components (existing and proposed) and Cables to be done of the entire LAN-WAN architecture mentioned in scope of work.
- This will include all the new equipment / cables (copper / fibre) that are introduced as a part of the installation process of equipment and also include already laid equipment / cables (copper / fibre).
- Cable Tagging should be decided in co-ordination with Bank and must be approved by Bank of Mauritius.
- Cable dressing should be as per the standard norms. All the cables must be neatly tied together at each and every location.

Training Delivery

- The successful bidder is expected to conduct staff trainings on the usage of the new phones and desktop software to the different types of users in different sessions to accommodate all the staff. Additionally, trainings should be provided to the IT administrators on the usage and management of the IP Phones and all network equipment implemented.
- Participants must, at the end of the course, be able to train other users or new entrants in standard use of the system. All user manuals for the system must be available at the start of the course. Reference / Training materials will have to be provided to the staff being trained.
- Training should be timed with the availability of equipment to allow staff to put their newly acquired skills in practice.

- Training on the security devices must be done by professional trainers. If training session need to be done overseas, the bidder should include in the cost for 2 staff of the bank and should be done prior to the implementation of the project.

The following information is to be provided in the technical proposal:

- Details of course content to be provided;
- Number of training sessions per type of users (for example more training sessions may be required for middle management);
- Duration of each training session; and
- Relative experience of trainer.

IPv6 implementation

The bank is planning to move to IPv6 within the next five years. In this context bidders must explain how the equipment proposed will facilitate IPv4 to IPv6 migration.

Software and Licenses

- Bidders must provide adequate number of licenses for each type of software and hardware proposed (as appropriate) and must explain clearly its licensing policy in the Cost Breakdown (Appendix G).
- The Bidders should propose the most appropriate licensing policy which is most cost effective to the Bank.
- Bidders should include any cost associated with the licensing policy in Appendix G Appropriate charges should be quoted for the maintenance and support of software proposed.

Electrical and other Facilities

The successful bidder should carry out appropriate tests on the existing electrical installation and earthing in order to ensure that their proposed equipment works safely. If the existing electrical system is not adequate, bidders will be expected to make the necessary recommendations. Electrical installation should however not be quoted for.

As part of their response, bidders should propose:

- Electrical requirements for the proposed equipment (earthing, power connection, cabling, etc.)
- Cooling and environmental requirements for the operation of the servers, switches and other related equipment.
- The specifications for UPS and electrical generators for the components of the system.

Bidders should propose sockets and plugs conforming to British Electrical Standards. If this is not the case, bidders should make necessary arrangements (by providing appropriate adapters) for all equipment to operate safely. Furthermore, the electrical plug on all equipment supplied should be accompanied by an appropriate fuse corresponding to the power requirement of the proposed equipment.

Support Services

The response time of the bidders for any problem and the maximum down time should be as per the Support and Maintenance Contract to be agreed upon, during warranty period as well as during the maintenance period. The bidders shall provide preventive and remedial maintenance to keep the proposed hardware in good operating conditions. The bidders shall propose DR strategy they will deploy in the event of a prolonged breakdown of equipment installed as part of the IT contingency plan. The bidders will provide details of its maintenance and support strategy and the working arrangements with partners (if any) to support the solution.

Insurance Cover

The successful bidder shall take a comprehensive insurance coverage in favour of the Bank on the proposed systems. Relevant charges should be included in the cost of the proposal.

Project Manager

The bidder should appoint a dedicated project manager for the overall duration of this project and who will act as a single point of contact. The project manager does not need to be onsite at all times but should be readily available to respond to queries when contacted. The same project manager should be made available from solution design to commissioning, go-live and post-support.

Documentation

Separate documents containing each of the following must be submitted:

- Logical organization, IP addressing and sub-netting map of the entire Bank LAN-WAN architecture, separately for all locations.
- VLAN scheme of the entire Bank LAN-WAN architecture
- Complete configuration of every device that is installed in MS word, PDF format, etc.
- Physical cabling layout and device location map clearly showing all the uplinks
- Inventory of all the devices installed at all the locations in the scope clearly outlining the type of switch, model number, port count, building name within the plant, plant name and floor number (wherever applicable)
- The Operation and Maintenance (O&M) manual for troubleshooting and maintenance has to be provided for each type of device installed.
- Authorization Letter of the manufacture stating the product has the most recent / stable version of the Operating System that is to be installed at the site must be submitted for all the equipment.
- Authorization Letter of the manufacturer stating the product has the most recent / stable Hardware device that is to be installed at the site for all the equipment must be submitted for all the equipment.
- The bidder shall not quote for the products, who's End of sale / End of Support has been declared or will reach the due date in less than six years, by the Original Equipment Manufacturer (OEM). Bidders should provide the certificate assuring the same. In the event if any equipment supplied by the selected Bidder reaches either end of support or end of life within the period of warranty or Annual Maintenance Contract (AMC), the selected Bidder has to replace the equipment at no additional cost to Bank.

Format for OEM authorization form has been provided Appendix I of this RFP Document.

2.3 Phases of Implementation and Support

The implementation of the project should include the following phases amongst others and reflected in the work plan to be provided by the bidders:

- Analysis of existing network topology and Architecture: This includes review of existing network, documentation of the findings, proposed new architecture and detailed design of the new topology.
- Shipment of Hardware: This includes ordering and receipt of hardware. This should not exceed a period of two months (eight weeks) after contract award.
- Installation and configuration: This includes the installation and configuration of the hardware and software needed for the successful running of the system, including all its components at the various locations where it is intended to be used.
- Testing and Training: This includes the successful testing of the system and all its components at the various locations where it is intended to be used, by the bidder and by users. It also consists of the training of end users and system administrators, and other technical staff.
- Trial run: This consists of the successful running of the system and all its components at the various locations where it is intended to be used, for a consecutive period of two weeks (10 working days), in a production environment.

- Go-Live: Following the mock-run (successful running of the system for a consecutive period of 10 working days - two weeks) the system will be declared operational. At that point the system shall be considered as being commissioned.

NOTE: The overall duration of the Implementation Phase should not exceed 6 months from the date of issuance of Purchase Order to the successful bidder.

Detailed documentation as applicable for each of the above mentioned phases should be provided by the bidder in due course. This includes detailed network diagrams and configurations of systems implemented.

3.Instructions for Bidders and General Conditions

3.1. Request for Additional Information

To obtain additional information or clarification regarding the contents of the RFP, bidders are requested to send their questions by email to CTC@bom.mu or write to “Chairperson Tender Committee, Bank of Mauritius, Sir William Newton Street, Port Louis, Mauritius”.

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 published on the Bank’s website.

If questions are technical in nature, the Chairperson Tender Committee 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 flow through the Chairperson Tender Committee or by email to CTC@bom.mu

The deadline for submitting any question is 17 March 2015. Bidder questions, along with Bank’s responses, will be aggregated in an anonymous fashion and communicated to all bidders via the Bank’s website.

3.2. Pre Bid Meeting

The Bank plans to hold a pre-bid meeting on 24 March 2015 at the address specified in Bid details under introduction note in order to bring greater clarity on the scope of work and terms of the RFP being floated. The Bidders are expected to use the platform to have all their queries answered. Bidders are requested to send their queries relating to RFP to the Bank’s office by e-mail, well in advance (latest by 17 March 2015), so that the same could be discussed during the Pre-Bid meeting with interested Bidders. All queries along with bank responses will be uploaded on the bank website on 27 March 2015.

Interested Bidders will be allowed to participate in the Pre-Bid meeting. The Bank will allow a maximum of 2 representatives from each Bidder to participate in the pre-bid meeting.

Non-attendance at the Pre-bid Meeting **will not** be a cause for disqualification of a Bidder.

The Bank will have liberty to invite its project/technical consultant or any outside agency, wherever necessary, to be present in the pre-bid meeting to reply to the queries of the Bidders in the meeting.

3.3. Format of Responses

This section provides all the key components to be included in the response to this RFP. It should be made clear that such responses will be the principal basis of the supplier evaluation and that a failure to provide the required details may disbar the supplier from being considered. It is therefore essential to have considered the evaluation process before preparing the response. It should also be made clear that the supplier is invited to go beyond the required

responses to demonstrate any additional value they can bring to the organisation. It is recommended that each section in the response is numbered. Below are the key sections which the response should contain:

TECHNICAL PROPOSAL

Section	Overview	Template(s)
1. Cover Letter	A cover letter should be prepared and signed by the bidder, expressing an interest in working with the Bank and identify key value propositions.	Table I - BIDDER'S STATEMENT - Bidder's Statement*As provided in Appendix A* *To be used in addition to custom cover letter.*
2. Bidder Information	Background of the bidder and sub-contractors (if any) who are proposing services or their product as part of the response to this RFP.	Table II - GENERAL BIDDER INFORMATION *As provided in Appendix B* Compliance to Eligibility Criteria *As mentioned in Section 4.3 Eligibility Criteria.* Additional details can be provided as an appendix in the response or within this section.
3. Proposed Solution	Provide details of the proposed technology / architecture (diagrams) for the Bank's environment. This includes data network devices, security and PABX infrastructure. The bidders should provide good practices for implementing the proposed solution along with the explanation as to how the proposed solution will assist the Bank in meeting such good practices.	**Table III - BIDDER SUPPORT SERVICES**Table III - BIDDER SUPPORT SERVICES *As provided in Appendix B* Table IV - TECHNICAL COMPLIANCE FOR CORE SWITCH Table V - TECHNICAL COMPLIANCE FOR DISTRIBUTION SWITCH Table VI - TECHNICAL COMPLIANCE FOR LEVEL SWITCH Table VII - PROPOSED SWITCHES Table VIII - TECHNICAL COMPLIANCE FOR FIREWALLS Table IX - TECHNICAL COMPLIANCE FOR INTRUSION PREVENTION SYSTEM (IPS)

Section	Overview	Template(s)
		Table X - TECHNICAL COMPLIANCE FOR NETWORK INTELLIGENCE TOOL Table XI - TECHNICAL COMPLIANCE FOR PABX INFRASTRUCTURE Table XII - PHONE FEATURES *All the above tables are provided in Appendix C* Table XV - TECHNICAL COMPLIANCE FOR WIRELESS ACCESS POINTS Table XVI - TECHNICAL COMPLIANCE FOR WIRELESS CONTROLLER Table XV – Bill of Materials - Hardware Table XVIVIII – Bill of Materials – Software *As provided in Appendix C.9 & Appendix C.12* Table XVII - SECURITY COMPLIANCE *As provided in Appendix D* NOTE: The Bill of Materials provided in Technical and Commercial Proposals should match in the particulars and the quantities proposed. No commercial or pricing figures should be mentioned in the technical proposal.
4. Approach & Methodology	Provide detailed approach and methodology which will be used by the bidder to successfully implement the proposed solution within the proposed timeframe. The approach should include details about the initial assessment to be conducted by the successful bidder to assess the adequacy of cabling and to determine the implementation plan to minimize service outages. Implementation would consist of, but not limited to the following: 1.Assessment of existing network topology and architecture,	*Bidders to use their own template*

Section	Overview	Template(s)
	2.Propose new high level and low level design of network topology and architecture taking into consideration security, availability and performance, 3.Configure all equipment and servers (if required) according to the new network topology 4. Ensure new equipment is tested and fully operational, 5.Transfer live operations to new network without major downtime of live operations.	
5. Project Plan & Timeline	Provide detailed project plan for the full implementation of the proposed system. This should include a timeline with all necessary milestones (initial assessment, cabling if required, acquisition, installation, integration, acceptance testing, go-live etc.), as well as a list of critical dependencies and assumptions.	*Bidders to use their own template*
6. Engagement Team	The project governance structure and resumes of the proposed team members identified for this engagement, with their individual qualifications and experience in performing similar projects.	Table XVIII - TEAM QUALIFICATIONS AND EXPERIENCES *As provided in Appendix E* *Additional details to be provided on the team structure along with their roles and responsibilities, if successful.*
7. Citations	Details of previous experience by the bidder, including client names, description of work done and solution implemented. Additionally, at least two (2) references from prior projects of similar scope, technical complexity, and systems architecture. These references should consist of contact names and telephone numbers of customers currently using the proposed solution and who have permitted the Bank to contact them.	Table XIX - DETAILS OF RELEVANT PAST EXPERIENCE Table XX - REFERENCE SITES *As provided in Appendix F*
8. Masked Commercials	Bidders are to provide masked commercial proposal in order ensure	Table XXI – COMMERCIAL PROPOSAL FORMAT

Section	Overview	Template(s)
	that the latter is as per the prescribed format. **NOTE**: No pricing information should be present in this section. Any proposal containing commercial information in this section is liable to be rejected.	*As provided in Appendix G*
8. Appendices	Any documents/reports which illustrate the bidder's experience or qualifications may be included as an additional Appendix to the proposal.	*Bidders to use their own template*

COMMERCIAL PROPOSAL

Section	Overview	Template(s)
1. Cover Letter	A cover letter should be prepared and signed by the bidder to express an interest in working with the Bank and to identify key value propositions. It can be similar to the cover letter used for submitting Technical proposal.	Table I - BIDDER'S STATEMENT - Bidder's Statement*As provided in Appendix A* *To be used in addition to custom cover letter.*
2. Total Commercial Cost	The cost of hardware, design, installation and implementation, support should be provided in the prescribed format. This is the final amount which will be quoted by the bidder for all the mentioned services in this RFP and will be basis the financial evaluation of the bidder.	Table XXI – COMMERCIAL PROPOSAL FORMAT *As provided in Appendix G*

3.4. Method of Submission of Bids

Bidders submitting bids by hand shall enclose the Technical and Commercial proposals, in separate sealed envelopes, duly marking the envelopes as **"TECHNICAL PROPOSAL"** and **"COMMERCIAL PROPOSAL"**. These envelopes containing the technical and commercial proposals shall then be enclosed in one single (outer) envelope.

The inner and outer envelopes shall:

a. Bear the name and address of the Bidder;

b. Be addressed to the Bank as follows:

The Chairperson Tender Committee
Replacement of existing data network and PABX infrastructure
Bank of Mauritius
Sir William Newton Street
Port Louis
Mauritius

Two copies of the Technical and Financial proposals are required to be deposited in the **Tender Box B** in a single outer envelope along with the Bid Security (Earnest Money Deposit) and addressed to the Chairperson of the Tender Committee at the address stated above.

International bidders, proposals received through courier services will be collected at the reception desk of the Bank and deposited in the **Tender Box B**.

In addition, bidders must submit separate electronic copies of the Technical and Financial proposals in Microsoft Word, Excel or PDF format on CD, DVD or portable storage media such as USB pen drives. The electronic copies of the Technical and Financial proposals should be attached with their respective printed versions.

Bids (two copies of the proposal) must be deposited in the **Tender Box B** at the address above on or before **Monday 6 April 2015 up to till 15.00 hours (local time) at latest.** The Bank shall not consider any bid submissions that arrive after the date and time specified in this RFP. Any bid received by the Bank after the cut-off date and time for submission of bids shall be declared late and will be rejected

All responses will be considered as the final bid by the supplier and any post bid negotiation will be limited to finalising the contract document which expresses the substance of the bid.

The Bank may, at its discretion, extend the cut-off date for the submission of bids by providing an addendum to this document (which will be published on the website of the Bank), in which case all rights and obligations of the Bank will be final in this regard.

3.5. Bill of Materials and Price in Commercial Quotation

The prices quoted of the items present in the bill of materials only in Table XXI – COMMERCIAL PROPOSAL FORMAT in Appendix G will be considered. Any subsequent price additions will not be permitted. Bidders are to take full responsibility to ensure that the bill of materials in Technical and Commercial proposals match with each other. In case of discrepancies, the bill of materials and the commercial quotation in the hard copies of the proposals will be considered as final.

3.6. Multiples Submissions Permitted

Multiple submissions of response to RFP by each Vendor / Service Provider will be permitted.

3.7. Only One Solution Permitted per Submission

The bidder should propose, in one submission, only one technical solution meeting the requirements of the bank along with clear bill of materials indicating the type and number of devices. Multiple solutions in a single proposal are not allowed. Proposals with multiple solutions will be rejected by the bank.

3.8. Validity and Nature of Bid

Submission will be valid only if:

- Copies of the RFP responses are submitted before the aforementioned closing time.
- Submission by Fax transmission will not be accepted.
- Response is submitted in two separate sealed envelopes with separate marking “Technical Proposal” & “Commercial Proposal”
- All separate copies of RFP and attachments must be provided in a sealed envelope or sachet.

3.9. Registration of RFP Response/Bids

Registration will be considered by Bank of Mauritius receiving the RFP response in the above manner (Section 3.8- Validity and Nature of Bid). The RFP response must be accompanied with all documents, information, and details required. If the submission to this RFP does not include all the information required or is incomplete it is liable to be rejected.

All submissions, including any accompanying documents, will become the property of Bank of Mauritius. Recipients shall be deemed to license, and grant all rights to, Bank of Mauritius to reproduce the whole or any portion of their submission for the purpose of evaluation, to disclose the contents of the submission to other Recipients who have registered a submission and to disclose and/or use the contents of the submission as the basis for any resulting RFP process, notwithstanding any copyright or other intellectual property right that may subsist in the submission or accompanying documents.

3.10. Language

Responses to this RFP shall be written and presented in the English language.

3.11. Authorisation to Bid

The proposal must be signed by an official from the bidder's firm who has the legal authority to commit the firm to the proposed services.

3.12. International Bidders

International bidders must partner with local companies in order to bid. The latter must be able to provide first and second level technical support.

3.13. Validity Period of Response

Responses to this RFP will be considered to be valid for at least one hundred and eighty (180) days after the submission date. Bank reserves the right to request extension of the bid validity period from the bidders.

3.14. Incurred Costs

The Bank will not be held liable for any costs incurred for the preparation of responses to this RFP or any other costs incurred prior to the execution of a contract by both the bidder and the Bank. Bidders should ensure that all costs for equipment, software, services, documentation, training, etc. are included in the bid. No monies will be paid to the successful bidder other than those expressly stated in the bid, unless those expenses are agreed upon in writing by both parties.

3.15. Currency of Bid

For evaluation and comparison purposes, the bidder is required to convert all prices across various currencies into an amount in a single currency which is the **Mauritian Rupee (MUR)**. The successful bidder will be contracted to the stated amount in Mauritian Rupee only.

3.16. Errors in Proposal

Bidders or other authorised representatives are expected to be fully informed regarding the conditions, requirements, and specifications before submitting bids. Failure to do so will be at the proposer's own risk, and it cannot secure relief on a plea of error. Neither law nor regulations make allowance for errors pertaining to omission or commission on the part of proposers. Each recipient must notify Bank of Mauritius of any error, omission, or discrepancy found in this RFP document.

3.17. Collusion

The Bidder, by affixing its signature on the proposal, agrees to the following: "Proposer certifies that this RFP is made without previous understanding, agreement, or connection with any person, firm, or corporation making a proposal for the same services, and is in all respects fair, without outside control, collusion, fraud, or other illegal action."

3.18. Conflict of Interest

Bidders are required to disclose the names of any officials or employees of the Bank who have a material financial interest in the bidder's firm.

3.19. Patent Fees, Royalties, and Licenses

If the bidder elects and desires to use any design, trademark, device, material, or process covered by letters of patent or copyright in the RFP response, the bidder shall indemnify and save the Bank from any and all claims for infringement caused by the use of any such patented design, device, trademark, copyright, material, or process in connection with the work agreed to be performed under the contract. Bidders shall indemnify the Bank for any costs, expenses, or damages which the Bank may be obliged to pay by reason of any infringement at any time during the prosecution of or after completion of the work.

All indemnities shall survive notwithstanding expiry or termination of Contract and Bidder shall continue to be liable under the indemnities.

3.20. Liquidated Damages

Liquidated Damages for delay:

In case of delayed supply or implementation, the supplier shall be liable to pay as Liquidated damages at the rates specified below, for each completed week of delay or part thereof, on the purchase order value of the Solution.

Liquidate Damages rate per week or part thereof	Delay Period
1% of the contract price with a maximum cap of 10%	For each week of delay

The bank may however extend the time of completion under Force Majeure conditions.

Liquidated damages for non-performance:

If the specifications of the RFP are not met by the Bidder during various tests, the Bidder shall immediately rectify or replace the same to comply with the specifications as defined in the RFP and within the committed response time, failing which the Bank has the sole right either to reject or to accept it finally by recovering the suitable amount as deemed reasonable by the Bank out of the payments due to the vendor or even by invocation of Performance Guarantee.

Both the above clauses are independent of each other and are applicable separately and concurrently.

The bidder agrees and considers that the liquidated damages set out herein above are fair and reasonable and that he will raise no objection or dispute with regard to the bank's right to recover the liquidated damages.

The liquidated damages shall be deducted / recovered by the bank from any money due or becoming due to the bidder under this purchase contract or may be recovered by encashment of bank guarantees or otherwise from supplier.

3.21. Payment Terms

The payment terms for the entire project are divided into two phases: Capital Expenditure and Operational Expenditure. These are to be adhered to, by the successful bidder and shall be as follows:

Capital Expenditure (CapEx) Payment Terms

- **Advance Payment**: Twenty (20) percent of the contract price shall be paid within thirty (30) days of signing the contract against a bank guarantee for the equivalent amount,
- **Delivery of all materials**: Thirty (30) percent of the contract price shall be paid upon delivery of all materials (including switches, firewalls, phones, and others as required in this bid document and proposed by the bidder),
- **Commissioning of equipment**: Thirty (30) percent of the contract price shall be paid upon implementation of the data network and PABX equipment in line with the technical specifications and security requirements and after successful testing by the Bank,

- **End of Warranty Period**: The remaining twenty (20) percent of the contract price shall be paid to the successful bidder after the expiry of the warranty period and after satisfaction of the Bank of the performance of the bidder;

The payments are subject to applicable penalties covered as mentioned in the Section 3.28 – Service Level Agreement

Operational Expenditure (OpEx) Payment Terms

After "go live" and on start of the support and maintenance phase, payments to the bidder will accrue monthly, but will be payable on a quarterly basis based on invoicing, after deducting applicable penalties covered as mentioned in the Section 3.28 – Service Level Agreement.

3.22. Subcontracting

Details of all subcontractors, partnership and/or joint venture should be disclosed in the bidder's response in Appendix B Bidder Capabilities in this RFP. No change in the subcontractors, partnership and/or joint venture will be allowed except with the written authorisation of the Bank.

Bidders must provide full details therein along with signed partnership or related work arrangement agreement clearly defining the roles of their partners engaged.

3.23. Oral Presentations and Site Visits

The selected bidder(s) may be required to make oral presentations and/or site visits to supplement their proposals, if requested by the Bank. The Bank will make every reasonable attempt to schedule each presentation at a time and location that is agreeable to the bidder(s). Failure of a bidder to conduct a presentation for the Bank on the date scheduled will result in rejection of the bidder's proposal.

3.24. Warranty

Bidders should provide a warranty that shall commence from the 'Go-Live' date of the system. All deliverables and services, including but not limited to:

- System software
- Application software (if any)
- Hardware shall be covered by a one (1) year warranty.

3.25. Commissioning

Bidders shall furnish all necessary supervision, labour, materials, hardware, software, documentation (user and technical including network diagram supported by proper labelling of devices and connections), training (user and technical), technical support and supplies necessary to implement and maintain the system.

Bidders are required to prepare all necessary commissioning documents in duplicate and submit the same to the Bank for verification by Bank staff.

3.26. Information Provided

The RFP document contains statements derived from information that is believed to be reliable at the date obtained but does not purport to provide all of the information that may be necessary or desirable to enable an intending contracting party to determine whether or not to enter into a contract or arrangement with Bank of Mauritius in relation to the provision of services. Neither the Bank of Mauritius nor any of its employees, agents, contractors, or advisers gives any representation or warranty, express or implied as to the accuracy or completeness of any information or statement given or made in this RFP document.

3.27. Confidentiality

The RFP document is confidential and is not to be reproduced, transmitted, or made available by the Recipient to any other party. The RFP document is provided to the Recipient on the basis of the undertaking of confidentiality given by the Recipient to Bank of Mauritius. Bank of Mauritius may update or revise the RFP document or any part of it. The Recipient acknowledges that any such revised or amended document received is subject to the same terms and conditions as the original and subject to the same confidentiality undertaking.

The Recipient will not disclose or discuss the contents of the RFP document with any officer, employee, consultant, director, agent, or other person associated or affiliated in any way with Bank of Mauritius or any of its customers, suppliers, or agents without the prior written consent of Bank of Mauritius.

3.28. Disclaimer

Subject to any law to the contrary, and to the maximum extent permitted by law, Bank of Mauritius and its officers, employees, contractors, agents, and advisers disclaim all liability from any loss or damage (whether foreseeable or not) suffered by any person acting on or refraining from acting because of any information, including forecasts, statements, estimates, or projections contained in this RFP document or conduct ancillary to it whether or not the loss or damage arises in connection with any negligence, omission, default, lack of care or misrepresentation on the part of Bank of Mauritius or any of its officers, employees, contractors, agents, or advisers.

3.29. No Legal Relationship

No binding legal relationship will exist between any of the Recipients / Respondents and Bank of Mauritius until execution of a contractual agreement.

3.30. Evaluation of Offers

The RFP document will not be construed as any contract or arrangement, which may result from, the issue of this RFP document or any investigation or review carried out by a Recipient. The Recipient acknowledges by submitting its response to this RFP document that it has not relied on any information, representation, or warranty given in this RFP document.

3.31. Earnest Money Deposit (EMD)

As part of compliance, intending bidders should pay along with RFP an Earnest Money Deposit of MUR 150,000/- (Mauritian Rupees One Hundred and Fifty Thousand Only). The earnest money shall be paid by Demand Draft/Bankers Cheque/Pay Order drawn in favour of Bank of Mauritius – payable in Mauritius. The earnest money will not carry any interest. The EMD will be refunded immediately to non-Selected RFP Respondents. In case of selected respondents, the deposit will be adjusted against the Security Deposit payable under the terms of contract.

The EMD made by the bidder will be forfeited if:

- The Respondent withdraws his tender before processing the same.
- The Respondent withdraws his tender after processing but before acceptance of “Letter of Selection for Final RFP” issued by Bank.
- The Selected Respondent withdraws his tender before furnishing an unconditional and irrevocable Performance Bank Guarantee/Security Deposit.
- The Respondent violates any of the provisions of the term and conditions of this tender specification.

3.32. Performance Bank Guarantee

The Selected bidder has to provide an unconditional and irrevocable Performance Bank Guarantee of 10% of the contract value from a licensed commercial bank in Mauritius towards due performance of the contract in accordance with the specifications, terms and conditions of RFP document, within 15 days from the date of award

of contract. The Bank Guarantee shall be kept valid three months, beyond the tentative completion period of project.

Format for furnishing Performance Bank Guarantee is provided in Appendix H of this RFP.

3.33. Service Level Agreement

1. Bank expects all the devices to be available 99.9% of the time with latency not exceeding 100 milliseconds during the warranty and AMC period for equipment and services delivered by the successful bidder to Bank. This will be calculated on monthly basis. Resolution procedure on occurrence of any amount of downtime related to the equipment and services delivered will be as follows:
   a. Bank will log the ticket with the Successful Bidder by means of a phone call and/or an email and/or incident reporting portal. Phone number / email / URL to lodge a complaint/ticket must be provided to the Bank on or before the 'Go Live' date.
   b. The off-site technical support from the bidder should be provided 24 hours a day, 7 days a week (24x7). Bidder should ensure that back to back OEM support if any should be available 24x7. Proof outlining the same should be provided.
   c. Following conditions apply:
      - If the device is termed faulty/non-operational, the replacement should be made within the first 4 hours after the ticket was logged considering the criticality of the business requirements of Bank. The replacement must be with a new device only. If the faulty device cannot be replaced with a new device, a temporary device has to be installed and made operational at the location. The replacement with the new device should, however, happen within 48 Hours after the ticket was logged.
      - If the device is not termed faulty/non-operational and the ticket is not closed by the bidder during the time frame described in Step 2, the ticket will have to be escalated to the respective OEM. It is the responsibility of the bidder (with assistance from OEM) to resolve the ticket within 24 hours.
   d. Up-time calculation will include availability of the devices on working as well as non-working hours.
   e. Scheduled downtime will be excluded from the availability calculations.

2. Any deviation from the figures mentioned above will invoke penalty payments. The penalty deductions are linked to the bidder payables as below:
   a. Implementation SLA: Any delay in the agreed implementation plan would be chargeable as below:
      i. Network Infrastructure: MUR 10,000 per day
      ii. Security Infrastructure: MUR 8,000 per day
      iii. Voice Infrastructure: MUR 5,000 per day
      iv. Disaster Recovery (DR) Site Infrastructure: MUR 5,000 per day

   The same shall be recoverable from the bank guarantee / security deposit

   b. Support Phase SLA: Penalty for non-achievement of SLA requirements is mentioned below:

   i. Uptime:

>=99.9%	Full Payment
95% <= to < 99.9%	Penalty 5% of monthly amount
90% <= to < 95%	Penalty 10% of monthly amount
80% <= to < 90%	Penalty 20% of monthly amount
< 80%	No Payment

   ii. Latency:

Below 100 ms	Full Payment
100 <= to < 200 ms	Penalty 5% of monthly amount
200 <= to < 300 ms	Penalty 10% of monthly amount
300 <= to < 400 ms	Penalty 20% of monthly amount
<= 400 ms	No Payment

   iii. Incident Response

99% or above Response	Full Payment
95% <= to < 99.9%	Penalty 5% of monthly amount

80% <= to < 95%	Penalty 10% of monthly amount
60% <= to < 80%	Penalty 20% of monthly amount
0 <= to < 60%	No Payment

3. If the total value of deductions due to penalties reaches 10% of the total value of contract, the Bank reserves the right to forfeit the Bank Guarantee and terminate the contract.

3.34. Execution of SLA/NDA

The winning bidder must execute (a) a Service Level Agreement, which would include all the services and terms and conditions of the services to be extended as detailed herein and as may be prescribed by the Bank and (b) Non-disclosure Agreement. The bidder must execute the SLA and NDA within 1 month from the date of acceptance of Letter of Appointment.

3.35. Notification

Bank of Mauritius will notify the Respondents in writing as soon as practicable about the outcome of the RFP evaluation process, including whether the Respondent's RFP response has been accepted or rejected. Bank of Mauritius is not obliged to provide any reasons for any such acceptance or rejection.

3.36. Disqualification

Any form of canvassing/lobbying/influence/query regarding short listing, status etc. will be liable for a disqualification.

3.37. Defect Liability

- In case, the equipment delivered under the project period are found to be defective as to material and workmanship and / or not in accordance with the requirement, and / or do not achieve the guaranteed performance, the bidder shall replace such defective equipment at no extra cost to Bank without prejudice to the other remedies as may be available to the Bank under the contract.
- If the equipment supplied requires repeated services for making good of defects (maximum 3) during first month of the operation, the equipment will be required to be replaced with new stock.

3.38. Termination of contract

Bank reserves the right to cancel the order placed on the selected bidder by providing one month's notice and recover expenditure incurred by Bank on the following circumstances:

- Bank reserves the right to make changes (modify/delete) to the sites.
- In case of any changes in Bank's business plan, Bank may terminate any part or entire services to be rendered by giving a notice period of 1 month.
- The selected bidder commits a breach of any of the terms and conditions of the bid.
- The progress regarding execution of the order accepted, made by the selected bidder is found to be unsatisfactory.
- If the selected bidder does not perform satisfactorily or delays execution of the contract, Bank reserves the right to get the balance contract executed by another party of its choice by giving 1 month notice for the same. In this event, the selected bidder is bound to make good the additional expenditure, which Bank may have to incur in executing the balance of the contract. This clause is applicable, if for any reason, the contract is cancelled.
- Alternatively at the discretion of the Bank, if the Contract is cancelled during Warranty, the bidder shall repay all the payment received from Bank and remove all the equipment supplied and installed by the bidder without any extra cost to Bank. Bank shall not be liable for anything, whatsoever, in this regard. If the contract is cancelled during support and maintenance phase, Bank shall deduct payment on pro-rata basis for the unexpired period of the contract.

- In addition to the cancellation of purchase order, Bank reserves the right to appropriate the damages through encashment of Performance Guarantee given by the Bidder.

3.39. Force majeure

- Force majeure is herein defined as any cause, which is beyond the control of the selected Bidder or Bank as the case may be, which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance, such as:
    - Natural phenomenon, including but not limited to floods, droughts, earthquakes, epidemics, etc.
    - Acts of any Government, including but not limited to war, declared or undeclared, priorities, quarantines, etc.
    - Terrorist attacks, public unrest in work area, etc.
- If a Force Majeure situation arises, either party (Bank & Bidder) shall within ten (10) days from the occurrence of such a cause notify the other in writing of such causes. The Bidder or Bank shall not be liable for delay in performing his / her obligations resulting from any Force Majeure cause as referred to and / or defined above.

3.40. Dispute Resolution

If a dispute, controversy or claim arises out of or relates to the contract, or breach, termination or invalidity thereof, and if such dispute, controversy or claim cannot be settled and resolved by the Parties through discussion and negotiation, then the Parties shall refer such dispute to arbitration.

Both Parties may agree upon a single arbitrator or each Party shall appoint one arbitrator and the two appointed arbitrators shall thereupon appoint a third arbitrator.

The arbitration shall be conducted in English and a written order shall be prepared.

The venue of such arbitration shall be in Mauritius. The decision of the arbitrator shall be final and binding upon the Parties, provided that each Party shall at all times be entitled to obtain equitable, injunctive or similar relief from any court having jurisdiction in order to protect its intellectual property and confidential information.

3.41. Change Orders

The Bank may, at any time, by a written order given to the successful bidder, make changes within the general scope of the Contract. If any such change causes an increase or decrease in the cost of, or the time required for the successful bidder's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the successful bidder for adjustment under this clause should be asserted within thirty (30) days from the date of successful bidder's receipt of Bank's change order.

3.42. Substitution of Project Team Members

During the project, the substitution of project team including project manager identified for the assignment will not be allowed unless such substitution becomes unavoidable to overcome the undue delay or that such changes are critical to meet the obligation. In such circumstances, the Bidder, as the case may be, can do so only with the prior written concurrence of the Bank and by providing the replacement staff of the same level of qualifications and competence. If the Bank is not satisfied with the substitution, the Bank reserves the right to terminate the contract and recover whatever payments(including past payments and payment made in advance) made by the Bank to the Bidder during the course of the assignment pursuant to this RFP besides claiming an amount equal to the contract value as liquidated damages. However, the Bank reserves the unconditional right to insist upon the

Bidder to replace any team member with another (with the qualifications and competence as required by the Bank) during the course of assignment pursuant to this RFP.

4. Evaluation Methodology

Each Recipient acknowledges and accepts that the Bank may, in its sole and absolute discretion, apply whatever criteria it deems appropriate in the selection of organizations, not limited to those selection criteria set out in this RFP document. The issuance of RFP document is merely an invitation to offer and must not be construed as any agreement or contract or arrangement nor would it be construed as any investigation or review carried out by a Recipient. The Recipient unconditionally acknowledges by submitting its response to this RFP document that it has not relied on any idea, information, statement, representation, or warranty given in this RFP document.

- The objective of the evaluation process is to evaluate the bids to select an effective solution at a competitive price.

- Through this Request for Proposal, Bank aims to select a Bidder/ application provider who would undertake the designing and implementation of the required solution. The Bidder shall be entrusted with end-to-end responsibility for the execution of the project under the scope of this RFP. The Bidder is expected to commit for the delivery of services with performance levels set out in this RFP with a Service Level Agreement.

- The Bank has adopted a two bid process in which the Bidder has to submit (1) Technical Bid and (2) Commercial Bids separately but at a time as stipulated.

- The Bank shall evaluate the Technical Bids initially and based on Technical Bid evaluation and shall undertake evaluation of the Commercial bid of the technically qualified proposals only. This will be followed by a techno-commercial process for the technically qualified bidders.

Bank will be evaluating the bids and its decision on selecting the bidder will be final.

4.1 Opening of Bids by the Bank

4.1.1 Opening of Eligibility Criteria & Technical Bids

1. The Bank will open the Eligibility Criteria & Technical bid in the presence of Bidders' representatives who choose to attend.

2. Those Bidders satisfying the eligibility criteria and accepting the terms and conditions of this document shall be short-listed for further evaluation.

3. The Bank will examine the bids to determine whether they are complete, whether required information has been provided as stated in the bid document, whether the documents have been properly signed, and whether bids are generally in order.

4. The Bank reserves the right to accept or reject any bid and annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for the Bank's action.

5. To assist in the examination, evaluation and comparison of bids the Bank plans to, at its discretion, ask the Bidders for clarification and response shall be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.

4.1.2 Opening of Commercial Bids

1. Technically qualified bidders will be informed about the date and time of opening of commercial bid and they will be invited to participate in the opening of the bid. The Commercial Bid (Part II) will be opened by the Bank notwithstanding the presence of the bidders.

2. The Bidders' names and bid prices will be recorded at the bid opening.

3. Commercial bids of technically non-responsive Bidders shall be returned un-opened.

4.2 Eligibility Criteria

The bidder is required to meet the following eligibility criteria and provide adequate documentary evidence for each of the criteria stipulated below:

S. No.	Criteria	Supporting Document to be submitted along with RFP Response	Bidders Response
1.	The Bidder should be a registered Company/Entity **in a country recognised by the United Nations.**	Certificate of Incorporation Proof of Permanent Office Location within Mauritius for International Bidders having a presence in Mauritius	
2.	The bidder must warrant that it is a going concern/firm, financially solvent, i.e., able to meet all its debts as and when they fall due. The Bidder's net worth should be positive.	Audited balance sheet and profit and loss statement of the bidder and supporting document for the past 3 financial years. Certificate from Chartered Accountant (CA) or external auditor for financial solvency.	
3.	The Bidder should have had an annual turnover of MUR 100 million or more in each of the previous three financial years i.e. 2010-11, 2011-12 & 2012-13.	As above	
4.	The bidder should have made profits for the past 3 years in succession i.e. 2010-11, 2011-12 & 2012-13.	Profit and Loss statement of past three years.	
5.	The Bidder should not be involved in any legal case that may affect the solvency /existence of firm or in any other way affect the bidder's capability provide/ continue the services to the Bank. The company should not be blacklisted by any Government agency in Mauritius.	Self-declaration signed by Company Secretary or Board approved Authorized Signatory.	
5.	Bidder must have experience of executing similar projects in at least 2 banks or large organizations (project size of more than 50 million) in the past 3 years.	Appendix F	
6.	Must have at least one Project Manager and one additional member on rolls who	Appendix E	

S. No.	Criteria	Supporting Document to be submitted along with RFP Response	Bidders Response
	have similar experience as that of the (Project Manager) team leader		
7.	The project manager should have been personally involved in at least 2 similar assignments in the past and have an experience of 5 years or more to manager such projects. Staff turnover should not be less than 2 years.	Appendix E	

4.3 Technical Evaluation Procedure

Technical Bid will be evaluated on the basis of completeness of the RFP submissions and the products/ solution offered by the bidder. The compliance with Section 3.3 (Method of Submission of Bids) for the products offered is mandatory. Post cut- off date, the Bank shall review and evaluate each submission to determine the interested bidders who are available and qualified on the basis of the predetermined criteria.

Formal interviews of shortlisted bidders may be conducted by the Bank based upon the assessment of written responses, pricing, etc. In addition to formal interviews, the Bank may work with the bidder to schedule a site visit if applicable,

4.4 Technical Evaluation Criteria

The evaluation of the RFP will include, but will not be limited to, the following criteria:

- Closeness of fit of proposed solution to the Bank's functional requirements, including breadth and depth of product coverage and functionality.
- The ability of the bidder to provide personnel with the necessary experience.
- The degree of compliance to the RFP in terms of the response structure and completeness of information provided.
- Bidder's experience in providing these types of services and similar technology infrastructure and experience in the specific solution proposed
- Compatibility, reliability, flexibility, expandability, redundancy, security and scalability of the proposed solution
- Costs of system implementation (including training and maintenance), financial stability of the bidder and commitment to their product(s) and their clients.
- Approach and implementation plan which the bidder has proposed and their plan on minimising possible services outage.
- Reliability and performance of the software, demonstrated by a proven track record at other customer sites (which can be assessed during site visits).
- Support capability of the bidder, including installation assistance, technical support, user training and ongoing software maintenance.
- Risks associated with the proposed solution and its implementation.

The above list is not exhaustive. During the evaluation process, it is likely that the Bank will request clarification of responses and on-site systems demonstrations sessions from some bidders.

The Technical Scoring Methodology is provided below:

Sl No.	Criteria	Weightage	Information Provided Meets Minimum Requirement (50%)	Information Provided Exceeds Requirement (75%)	Information Provided Significantly Exceeds Requirement (100%)
	Organizational Capabilities				

Sl No.	Criteria	Weightage	Information Provided Meets Minimum Requirement (50%)	Information Provided Exceeds Requirement (75%)	Information Provided Significantly Exceeds Requirement (100%)
1	Relevant experience in Network (LAN & WAN) implementation and support with Banks/or Equivalent organizations in the last 5 years Meets: 5 Exceeds: 8 Significantly Exceeds: 10	10			
2	Relevant experience in Security (Firewall, IDS/IPS, SIEM) implementation and support with Banks/or Equivalent organizations in the past 5 years Meets: 5 Exceeds: 8 Significantly Exceeds: 10	10			
3	Relevant experience in PABX (VOIP) implementation and support with Banks/or Equivalent organizations in the last 5 years Meets: 5 Exceeds: 8 Significantly Exceeds: 10	10			
4	Must have experience in implementation and maintenance of DR in at least 2 Banks/or Equivalent organizations in the last 5 years Meets: 5 Exceeds: 8 Significantly Exceeds: 10	5			
	Sub- Total	**35**			
	Resource Capabilities				
5	Engagement Manager should have handled such projects in the firm Meets: 5 projects Exceeds: 8 projects Significantly Exceeds: 10 projects	5			
6	Person identified for managing the overall project should have	5			

Sl No.	Criteria	Weightage	Information Provided Meets Minimum Requirement (50%)	Information Provided Exceeds Requirement (75%)	Information Provided Significantly Exceeds Requirement (100%)
	managed such projects in firm for at least 5 years. Meets: 5 years Exceeds: 8 years Significantly Exceeds: 10 years				
7	Proposed team must have experience in executing similar projects in banks out of which at least one should be a licensed commercial bank. Meets: All team members with 1 Bank experience. Exceeds: 8 Bank exp. Significantly Exceeds: 15 or more bank exp.	5			
	Sub- Total	15			
	Technical Proposal				
8	Technical Proposal with detailed break-down of activities to be performed, effort estimation, manpower to be deployed on a project-to-project basis	15			
9	Technical Proposal with detailed on how the bank can make the maximum use of the technology proposed and how it will be implemented.	15			
10	Demonstration of in-depth understanding of Bank's project requirements through the technical presentation.	10			
11	Proposed a detail plan on how the DR will be implemented to provide business continuity.	10			
	Sub- Total	50			
	Total Marks	100			

4.5 Short listing of Technically Qualified Bidders

Technically qualified Bidders will be shortlisted based on the following criteria:

Bidders scoring 75% or above in the technical evaluation will be short-listed for commercial evaluation. However, in case there are less than 3 Bidders who score 75% or above, the Bank may, at its discretion, choose the top 3 scoring Bidders subject to the bidder scoring 65%.

The technical score T = Score from Technical Evaluation

The Relative Technical Score (RTS) for the Bidders will be calculated based on the following basis:

$$RTS_x = \frac{T}{T_{High}} * 100$$

Where,

RTS_x: Relative Technical Score of each Bidder

T: Technical Score of bidder

T_{High}:Technical Score of the Bidder with Highest Technical Score

4.6 Commercial Evaluation Criterion

Prices quoted by the bidders will be valid for 180 days from the date of submission and the commercials quoted within will be valid for entire period of contract i.e. 5 years. The lowest price quoted by the bidder will become **C_{low}**

4.7 Computation Methodology for arriving at "Least Price/Least Quote"

Bank will give 70% weightage to technical score while comparing the commercial quote. The Procedure is as under:
A "Score (**S**)" will be calculated for all qualified bidders using the following formula:

$$S = \frac{C_{low}}{C} X + \frac{T}{T_{High}} (1 - X)$$

Where:

C: nominal price quoted

$\mathbf{C_{low}}$: Price quote of the lowest nominal bid.

T : Technical evaluation score and

$\mathbf{T_{High}}$: The score of the technically highest bidder.

In case of 70%-30% weightage for technical-commercial, **X** will be equal to 0.3.

Sr. No.	Bidder	Technical Evaluation Marks (T)	Nominal Bid Price (C)	$\frac{C_{low}}{C}$ * 0.3	$\frac{T}{T_{high}}$ * 0.70	Score (S)
1	ABC	95	71	0.85 * 0.3 = 0.26	1 * 0.7 = 0.7	0.96
2	XYZ	85	65	0.92 * 0.3 = 0.28	0.89 * 0.7 = 0.62	0.90
3	UVW	80	60	1 * 0.3 = 0.3	0.84 * 0.7 = 0.59	0.89

In the above example, ABC, with the highest combined techno-commercial score becomes the successful bidder.

Bank of Mauritius reserves the right to negotiate the price with the selected bidder before awarding the contract. It may be noted that Bank will not entertain any price negotiations with any other bidder, till the least price bidder declines to accept the offer.

4.8 Contract with Bidder

The successful Bidder shall be required to enter into a contract with the Bank, within one month (30 days) from the award of the tender or within such extended period as may be specified by the Bank. The contract to provide professional services to implement the proposed system within the Bank's information technology environment shall remain in effect for five (5) years from the 'Go Live' which will be at the end of the implementation phase. Additionally, the Bank has the right to extend the contract for two (2), additional, one year periods under the same terms and conditions as specified in the original contract.

Should a rate increase be required for the option years (after the 5-year contractual agreement) which is separate to what has been provided in Appendix G in this RFP, the bidder must notify the Bank within ninety (90) days prior to the end of the then current term of the agreement. Any rate increase shall be mutually agreed between the Bank and the bidder. The decision to grant a rate increase is at the sole discretion of the Bank.

4.9 Reservations

The Bank reserves the right to reject any or all bids, or any part thereof, the right to waive informalities, and the right to amend the process, if such action is deemed to be in the best interest of the Bank.

Should award be made by the Bank and, prior to entering into a contract, subsequent information indicates that such award was not in the best interest of the Bank, the right is reserved to rescind said award without prior notice to proposers and either award to another proposer or reject all proposals.

5.Appendices

Appendix A – Bidder's Statement

Appendix B – Bidder's Capabilities

Appendix C – Technical Specifications

Appendix D – IT Security Compliance

Appendix E – Team Composition

Appendix F – Past Experience

Appendix G – Cost breakdown

Appendix A - Bidder's Statement

Table I - BIDDER'S STATEMENT

This form is to be signed by the Bidder and returned with the Bid response.

The undersigned certifies that, as a representative of the bidder, he/she has examined and is familiar with the attached proposal, including the specifications that all figures provided have been checked and verified, and that he/she understands that the Bank will not be responsible for any errors or omissions on the bidder's part.

The bidder further certifies that:

1. The bidder's response has been arrived at by the bidder independently and has been submitted without collusion with any other manufacturer or supplier of material, supplies, or equipment.

2. The contents of the bid response have not been communicated by the bidder, nor to its best knowledge and belief, by any of its employees or agents or other affiliated persons or entities, to any person not an employee, agent, or other affiliated person or entity of the bidder, or any other person not directly involved in responding to this solicitation.

3. The bid response will meet all requirements specified by the Bank, except those specifically identified to the contrary in the response. The pricing schedule is complete and includes pricing for all tools, equipment, transport, facilities, permits, hardware, software, materials, and labour required to perform the work as defined in this Request for Proposal except for cabling materials and labour where costing has been provided separately as requested in this RFP.

In the event a subcontractor(s) is to be used in performance hereunder, a bidder shall also advise such subcontractor(s) of the conditions herein contained and such subcontractor shall also be bound by the terms and conditions.

Printed Bidder Name: _____

Signed By: _____

(Authorized Officer or Owner)

Title: _____

Date: _____

Appendix B - Bidder Capabilities

Space is provided on each page for the bidder to provide the information requested. However, should this be insufficient, include/attach additional information as required.

Appendix B.1 - General Bidder Information

Table II - GENERAL BIDDER INFORMATION

GENERAL INFORMATION	RESPONSE
Name of primary bidder company name, contact person's name, current position/title, anticipated role in proposal process, address, telephone, fax and e-mail address. Date of incorporation & date of commencement of business, Major changes in Management in last 3 years (details to be provided), Names of Banker/s, Names and Designations of the persons authorized to make Commitments to the Bank (attach a copy of the board resolution authorizing the person to make commitments)	
Name of OEM/ sub-contractors, including company name, contact name, current position/title, and anticipated role in proposal process, address, telephone, fax and e- mail address. Date of incorporation & date of commencement of business, Major changes in Management in last 3 years (details to be provided), Names of Banker/s, Names and Designations of the persons authorized to make Commitments to the Bank (attach a copy of the board resolution authorizing the person to make commitments)	
Address of bidder and principal place of business in Mauritius.	
Name of affiliated solution bidder if any.	
Name of the holding company, if any.	
Provide explanation of your corporate structure. Is company publicly or privately held?	
Provide audited financial statements of the primary bidder company for the past 3 years with the proposal. Indicate revenue/turnover and net income for past 3 years.	

Provide audited financial statements of the OEM/Subcontractor for the past 3 years with the proposal. Indicate revenue/turnover and net income for past 3 years.	
Sales information from the past year for the specific product you are proposing.	
Identify any threatened, pending or past litigation within the last 5 years.	
Number of professional staff involved in supporting your proposed solution globally (development/technical, management, sales, consulting, and support). Provide breakdown by office location and function.	
Number of professional staff with more than 2 consecutive years' experience with your company by function (technical, management, sales, consulting, and support).	

Appendix B.2 - Bidder Support Services

Table III - BIDDER SUPPORT SERVICES

BIDDER SUPPORT SERVICES	RESPONSE
Describe the customer service organization facility available to the Bank (Structure, responsibilities, etc.)	
Will there be a dedicated customer service representative for the Bank along with a backup?	
Where is the main helpdesk facility located?	
Provide a description of helpdesk facilities including operating hours and general process for using the facility. *(The bank requires a 24x7 support service)*	
Is the helpdesk facility primarily telephone based or does it rely on an e-mail or a web based interface as the first point of contact?	
Are the functional and technical support staff native English and/or French speakers? Does the company have any plans to move support functions elsewhere?	
Is an issue tracking system used for historical purposes and cross-references?	
What is the average response time for support services? Are there established Turn-Around Times for problem resolution?	
What is the process for escalating a helpdesk issue?	
How are high priorities or high severity problems defined? What are the response times for these types of problems?	
What type of documentation is provided for the following: • System configuration. • Screen and field descriptions for call managing software, Firewall and other applications. • Glossary of terms. • Reporting guide (running, formatting, changing, creating reports). • Technical documentation.	

BIDDER SUPPORT SERVICES	RESPONSE
Where will the training courses be held?	
Is on-site custom training possible?	
Please outline the recommended training for the Bank staff prior to or during the system implementation (number of days, functions of the staff that should attend, etc.)	
What is the qualification and previous experience of the trainer?	
The successful bidder has to provide certification to the Bank's trainees for the training delivered. Provide details of the trainings and certification to be provided.	
How many previous versions of the solution do you support? What determines that a particular version of a system is no longer supported?	
Will you provide a minimum of 1 year of warranty after commissioning the equipment?	
Will you provide a minimum of 4 years of maintenance following the warranty period?	
Do clients have the choice of upgrading once new versions are released? At what point are clients required to upgrade?	
Do the applications provided have context sensitive on-line help (screen level, field level)?	

Appendix C - Technical Specifications

The following tables below provide the features that bidders need to specify in their response. Bidders should not limit themselves to only the features that are mentioned below. Bidders are invited to provide details where the keyword “Specify” is associated with the technical specification or state whether the specification is being offered in the device where a value has been given. For all specifications which the bidder complies with, a reference should be made to a specific section in the bidder’s response providing additional details on how this requirement will be achieved. Where the requirements are met using the features of the proposed product, details of such features should be provided.

All the devices should support IPv6 protocol.

Appendix C.1 - Core Switch

Table IV - TECHNICAL COMPLIANCE FOR CORE SWITCH

	Technical Specifications		
Sr. No	Description	Compliance	Remarks
	Minimum Requirements		
1.	Should be only of the following make: Cisco, HP or Juniper		
2.	Should be able to Cluster 2 switches in Active-Active mode, functioning as single Logical device. This setup should be capable of providing complete redundancy		
3.	Minimum Port requirement: 24 x 10/100/1000 BASE-T ports and 24 x 10 Gbps SPF+ ports from day one and should be further expandable for future scalability.		
4.	All Optics has to be from the same Switching OEM.		
5.	The switch should be Rack mountable. Mount Kit to be provided at no extra cost.		
6.	Should have at least 200 Mpps Packet Forwarding Throughput (Wire Speed)		
7.	The switch should only be a managed switch		
8.	Number of slots should be 6		
9.	Should Support AC power supply with autosensing enabled between 100 and 240 Volt		
10.	Shall support IPv4 and IPv6 from the day of installation.		
11.	Support for Hot Swappable Redundant Power supply and Field Replaceable Fan tray from Day 1		
12.	End of Sales. Please specify		
13.	End of Support. Please specify		
	Layer 2 & 3 Switching requirements		
1.	The architecture should be non-blocking and support wire speed		
2.	Should have IEEE compliance for 802.1Q VLAN, 802.1p QoS Prioritization, 802.1d STP, 802.3ad, 802.1w RSTP, 802.1s MSTP, 802.3ad LACP, IEEE 802.1ab Link Layer Discovery Protocol, IEEE 802.1X		
3.	Shall have minimum 4000 active VLAN support and 4000 VLAN IDs with Inter-VLAN Routing		
4.	Should be configurable to support at least 50000 MAC addresses		

	Technical Specifications		
Sr. No	Description	Compliance	Remarks
5.	Should support Jumbo Ethernet frames		
6.	Should have Layer 2 and Layer 3 QoS features.		
7.	Should support VTP, GVRP or equivalent protocol		
8.	Should support display and clear MAC address information in MAC Address Table for troubleshooting.		
9.	The switches should support QoS classification of incoming packets for QoS flows based on Layer 2, Layer 3, and Layer 4 fields. Should support 8 Hardware QoS Queues. Should support Ingress/Egress Queuing or QoS per port or user.		
10.	Should have Static, RIPv1/v2, OSPF and OSPFv3 from Day-1 and support for advance routing protocol like BGP and ISIS.		
11.	Support for MPLS functionality - Label-switching router (LSR) and label edge router (LER) functionality		
12.	Support for Lease Line termination and associated protocols		
13.	Should support L2 Switching with L2-L4 traffic classification		
14.	Should have Per-port broadcast, multicast, any cast and storm control or similar feature to avoid faulty clients from degrading the overall system performance		
15.	The device should be able to limit traffic flows based on MAC Source/Destination address, IP Source/ Destinations address, TCP/UDP port numbers etc.		
16.	The Device should be Software Defined Network (SDN) ready		
17.	Should support private VLAN		
18.	Should have Policy Based Routing feature		
	Security Requirements		
1.	Shall have 802.1x Network Security and Authentication		
2.	Should have dynamic port-based security to secure the access to an access-port or trunk-port based on MAC address.		
3.	Should have dynamic VLAN assignment		
4.	Should support security features like Dynamic ARP inspection, DHCP snooping, IP Source Guard, Static ARP MAC limiting etc.		
5.	Should support Standard ACLs and extended ACLs based on source/destination IP addresses and TCP/UDP ports		
6.	Should support multiple level of privileges and authentication for user access along with SSH support for secured device access.		
7.	Should support port mirroring feature for monitoring network traffic of a particular port/VLAN/group of ports/entire switch.		
8.	Should support monitoring of Port Status		
9.	Should support MAC filtering to prevent forwarding of any type of packet with matching MAC address.		
10.	Should have SSHv2 and SNMPV3 to encrypt traffic during Telnet and SNMP sessions.		
11.	Must support MAC based, port-based VLANs and tagged-based VLAN's		
12.	Should support RADIUS authentication to restrict unauthorized users from altering the configuration.		
13.	Should have DHCPv6 relay		
14.	Should support port security		

	Technical Specifications		
Sr. No	Description	Compliance	Remarks
15.	Must support IGMP Snooping, IGMP v1/2/3, IGMP filtering to provide multicast authentication by filtering out subscribers and limit the number of concurrent multicast streams available per port.		
	Management Requirements		
1.	Should have 10/100/1000 Mbps Management port for Out of Band Management.		
2.	Should be able to remotely monitor all the switches in the network		
3.	Should generates critical alerts and send it to admin ID configured		
4.	Should have SNMP V1/V2/V3, SSHv1 , SSHv2, NTP enabled		
5.	Should have HTTP/HTTPS web interface for configuration and management		
6.	Should have SYSLOG capabilities to enable system logging		
7.	Should have RMON -Remote Monitoring with 4 RMON groups (history, statistics, alarms and events)		
8.	Should have Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) support		
9.	Should have support to NTP client		
10.	Support FTP/TFTP for upgrading the operating System		
11.	Should Support Plug and Play Facility for easy Backup/ Restore and Upgrade of Configuration and OS.		
12.	Command Line Interface (CLI) support for configuration & troubleshooting purposes		
	Wireless Integration (Optional)		
1.	Ability to integrate wireless services.		
2.	Access points provisioning		
3.	Support IEEE 802.11ac		
4.	Wireless throughput		
5.	Number of access points supported		
6.	Number of wireless client supported		

Appendix C.2 - Distribution Switch (To be filled if applicable)

Table V - TECHNICAL COMPLIANCE FOR DISTRIBUTION SWITCH

Technical Specifications			
Sr. No	Description	Compliance	Remarks
	Minimum Requirements		
1.	Should be only of the following make: Cisco, HP or Juniper		
2.	For a 24-Port Switch, the device should have at least 24 Gigabit Ethernet SFP ports. All Optics has to be from the same Switching OEM.		
3.	Support for at least 4 x 10 Gbps SFP+ uplink ports		
4.	All Optics has to be from the same Switching OEM		
5.	Form factor 1U and 19" Rack mountable. Mount Kit to be provided at no extra cost.		
6.	Should have at least 65 Mpps Packet Forwarding Throughput (Wire Speed)		
7.	The switch should only be a managed switch		
8.	Supports AC power supply with autosensing enabled between 100 and 240 Volt		
9.	Shall support IPv4 and IPv6 from the day of installation		
10.	Support for Hot Swappable Redundant Power supply from Day one		
11.	Should have at least 256 MB DRAM and 32 MB Flash memory		
12.	End of Sales. Please specify		
13.	End of Support. Please specify		
	Layer 2 & 3 Switching Requirements		
1.	The architecture should be non-blocking and support wire speed		
2.	Should have IEEE compliance for 802.1Q VLAN, 802.1p CoS Prioritization, 802.1d STP, 802.3ad, 802.1w RSTP, 802.1s MSTP, 802.3ad LACP, IEEE 802.1ab Link Layer Discovery Protocol		
3.	Should support at least 4000 Active VLANs and 4000 VLAN IDs and Inter-VLAN routing		
4.	Should be configurable to support at least 24000 MAC addresses		
5.	Should support Jumbo Ethernet frames		
6.	Should have Layer 2 and Layer 3 QoS features.		
7.	Should support VTP, GVRP or equivalent protocol		
8.	The switches should support QoS classification of incoming packets for QoS flows based on Layer 2, Layer 3, and Layer 4 fields. Should support 8 Hardware QoS Queues.		
9.	Should support routing: Static, RIPv1/v2, OSPF and OSPFv3 from Day-1 and support for Advance routing protocol like BGP and ISIS without change of hardware in case required in future		
10.	Should support L2 Switching with L2-L4 traffic classification		
11.	Should have Per-port broadcast, multicast, any cast and storm control or similar feature to avoid faulty clients from degrading the overall system performance		
12.	The device should support IEEE 802.1p QoS policies		
13.	The device should be able to limit traffic flows based on MAC Source/Destination address, IP Source/ Destinations address, TCP/UDP port numbers etc.		

Technical Specifications			
Sr. No	Description	Compliance	Remarks
14.	The Device should be Software Defined Network (SDN) ready		
	Security Requirements		
1.	Shall have 802.1x Network Security and Authentication		
2.	Should have dynamic port-based security to secure the access to an access-port or trunk-port based on MAC address.		
3.	Should have dynamic VLAN assignment		
4.	Should support security features like Dynamic ARP inspection, DHCP snooping, IP Source Guard, Static ARP MAC limiting etc.		
5.	Should support standard and extended ACLs based on source/destination IP addresses and TCP/UDP ports		
6.	Should support port mirroring feature for monitoring network traffic of a particular port/VLAN/group of ports/entire switch.		
7.	Should support monitoring of Port Status		
8.	Should have port-based or VLAN based Mirroring capabilities.		
9.	Should support MAC filtering to prevent forwarding of any type of packet with matching MAC address.		
10.	Should have SSHv2 and SNMPV3 to encrypt traffic during Telnet and SNMP sessions.		
11.	Must support MAC based, port-based VLANs and tagged-based VLAN's		
12.	Should support RADIUS/ RADIUS with Active Directory authentication to restrict unauthorized uses from altering the configuration.		
13.	Should have DHCPv6 relay		
14.	Must support IGMP Snooping, IGMP v1/2/3, IGMP filtering to provide multicast authentication by filtering out subscribers and limit the number of concurrent multicast streams available per port.		
	Management Requirements		
1.	Should have 10/100/1000 Mbps Management port for Out of Band Management.		
2.	Should have SNMP V1/V2/V3, SSHv1 , SSHv2, NTP enabled		
3.	Should have HTTP/HTTPS web interface for configuration and management		
4.	Should support multiple level of privileges and authentication for user access along with SSH support for secured device access.		
5.	Should have SYSLOG capabilities to enable system logging		
6.	Should have RMON -Remote Monitoring with 4 RMON groups (history, statistics, alarms and events)		
7.	Should have Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) support		
8.	Should be able to remotely monitor ports in a Layer 2 switch network from any other switch in the same network		
9.	Should have support to NTP client		
10.	Should generates critical alerts and send it to admin ID configured		
11.	Should Support FTP/TFTP for upgrading the operating System		
12.	Should Support Plug and Play Facility for easy Backup/ Restore and Upgrade of Configuration and OS.		
13.	Command Line Interface (CLI) support for configuration & troubleshooting purposes		

Appendix C.3 - Level Switch

Table VI - TECHNICAL COMPLIANCE FOR LEVEL SWITCH

Technical Specifications			
Sr. No	Description	Compliance	Remarks
	Minimum Requirements		
1.	Should be only of the following make: Cisco, HP or Juniper		
2.	For a 24-port switch (Type I), the device should have 24X10/100/1000 BaseT ports and should have support for at least two 1 GbE Small Form-Factor Pluggable (SFP) uplinks and all ports should be PoE+ enabled on the switch. All Optics has to be from the same Switching OEM.		
3.	For a Non 24-port switch (Type II), the device should have at least 12 X10/100/1000 BaseT ports and should have support for at least two Dual Purpose 1 GbE Small Form-Factor Pluggable (SFP) or 10/100/1000 BaseT uplinks. It should be a Non PoE switch. All Optics has to be from the same Switching OEM.		
4.	For a Non 24-port switch (Type III), the device should have at least 12 X10/100/1000 BaseT ports and should have support for at least two Dual Purpose 1 GbE Small Form-Factor Pluggable (SFP) or 10/100/1000 BaseT uplinks. All ports should be PoE+ enabled. All Optics has to be from the same Switching OEM.		
5.	Should have 10/100/1000 Mbps Management port for Out of Band Management.		
6.	Form factor 1U and 19" Rack mountable. Rack Mount Kit to be provided at no extra cost.		
7.	The switch should only be a managed switch		
8.	Option/Alternative for redundant power supply should exist		
9.	Power and activity LEDs		
10.	Shall support IPv4 and IPv6 from the day of installation		
	Layer 2 Switching requirements		
1.	The architecture should be non-blocking and support wire speed		
2.	Should have VLAN trunk configuration capability		
3.	Should have IEEE compliance for 802.1Q VLAN, 802.1p QoS prioritization, 802.1d STP, 802.1w RSTP, 802.1s MSTP, 802.3ad LACP, IEEE 802.1ab Link Layer Discovery Protocol.		
4.	Should be configurable to support at least 4000 Active VLAN Support		
5.	Should support Jumbo Ethernet frames		
6.	Should support VTP, GVRP or equivalent protocol		
7.	Should support 8 Hardware QoS Queues.		
8.	Should support security features like IP source guard, Dynamic ARP inspection and DHCP snooping		
9.	Should be configurable to support at least 8000 MAC addresses		
10.	Should have support for Per-port broadcast, multicast, any cast and storm control or similar feature to avoid faulty clients from degrading the overall system performance		
11.	The device should be able to limit traffic flows based on MAC Source/Destination address		

Technical Specifications			
Sr. No	Description	Compliance	Remarks
12.	Should have Domain Name System (DNS) support		
13.	The Device should be Software Defined Network (SDN) ready		
	Security Requirements		
1.	Shall have 802.1x Network Security and Authentication		
2.	Should Support Access Control Lists (ACL's) - Standard as well as Extended		
3.	Should have port-based security		
4.	Should have dynamic VLAN assignment		
5.	Should support multiple level of privileges and authentication for user access along with SSH support for secured device access.		
6.	Should support port mirroring feature for monitoring network traffic of a particular port/VLAN/group of ports/entire switch.		
7.	Should support monitoring of Port Status		
8.	Should support MAC filtering to prevent forwarding of any type of packet with matching MAC address.		
9.	Must support MAC based, port-based VLANs and tagged-based VLAN's		
10.	Should support RADIUS/ RADIUS with Active Directory authentication to restrict unauthorized users from altering the configuration.		
11.	Should have port security to secure the access to an access-port or trunk-port based on MAC address.		
12.	Must support IGMP Snooping, IGMP v1/2/3, IGMP filtering to provide multicast authentication by filtering out subscribers and limit the number of concurrent multicast streams available per port.		
13.	Should have SSHv2 and SNMPV3 to encrypt traffic during Telnet and SNMP sessions.		
	Management Requirements		
1.	Should have SNMP V1/V2/V3, SSHv1 , SSHv2, RMON-I, RMON-II support		
2.	Should have HTTP/HTTPS web interface for configuration and management		
3.	Should have NTP enabled support to NTP client		
4.	Should be able to remotely monitor ports in a Layer 2 switch network from any other switch in the same network		
5.	Should Support Plug and Play Facility (USB port) for easy Backup/ Restore and Upgrade of Configuration and OS.		
6.	Command Line Interface (CLI) support for configuration & troubleshooting purposes		
7.	End of Sales. Please specify		
8.	End of Support. Please specify		

Table VII - PROPOSED SWITCHES

PROPOSED SWITCHES		
LEVEL	**NO. OF 24-PORT SWITCHES**	**NO. OF 48-PORT SWITCHES**
0,1, Mezzanine	1	1
3	1	1
4		1
5	1	
7		2
8		2
10		2
11		2
12	1	1
13	1	1
14		1
15		1
16	1	
19	1	1
Core Switch (Redundant mode)	1 FO module (24ports) per switch	2 modules non-PoE per switch

Appendix C.4 - Firewalls

Table VIII - TECHNICAL COMPLIANCE FOR FIREWALLS

Technical Specifications	Required	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Brand	Only vendors in “Leader” quadrant of Gartner Magic Quadrant for Unified Threat Management	
Number of devices	Minimum of 2	
Make	Specify	
Model (*Internal & external should be of different brand*)	Specify	
On board storage	At least 200GB	
Connectivity technology	Wired	
Data Link Protocol	Specify	
Network / Transport protocol	IPSec	
Firewall Throughput	At least 70 Gbps	
Connection rate	Specify	
Concurrent connection	Specify	
New Session per second	Specify	
VPN Support	Yes	
VPN Throughput	At least 30 Gbps	
Virtual System Support	Specify	
Active Standby and Active-Active stateful failover	Yes	
Asymmetric routing support with active- active redundancy	Yes	
Advanced HTTP inspection services	Yes	
Advanced HTTPS inspection services	Yes	
Tunnelling application control	Yes *Specify*	

Technical Specifications	Required	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Advanced Persistent Threat prevention	Yes *Specify if this feature is provided in IPS*	
Zero Day attack prevention	Yes *Specify if this feature is provided in IPS*	
Anti-Virus protection	At least 10GB	
Console to Command Line interSLB appliance (CLI)	☐ SSH v1 and v2 to CLI ☐ Web GUI- based single device manager (HTTP, HTTPS) ☐ Web GUI- based multiple device manager ☐ SNMP v2c MIBs and traps ☐ Authentication, authorization, and accounting (AAA): TACACS+ and RADIUS support ☐ Role-based administrative access ☐ Online upgrade	
Capacity - IPSec VPN peers	N/A	

Technical Specifications	Required	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Capacity - SSL VPN peers	N/A	
Virtual interfaces (VLANs)	Specify	
Operate in Layer 2 & Layer 3 mode	Yes	
Network Address Translation (NAT)	Yes	
Port Address Translation (PAT)	Yes	
Traffic Management Quality of Service per policy	Yes	
IP spoofing protection	Yes	
Malformed packet protection	Yes	
DoS and DDoS protection	Yes	
TCP reassembly for fragmented packet protection	Yes	
Configuration rollback, store multiple configurations and software images in compact flash memory	Yes	
Expansion Slot(s)	Specify	
Interfaces – Network (10GE)	At least 6 *Bidders must include SFP modules in cost if necessary*	
Interfaces – Network (100/1000 Mbps RJ 45 / SFP)	At least 12	
Interfaces – Management (Console - RJ-45)	Specify	
Interfaces – Management (Auxiliary- RJ-45)	Specify	

Technical Specifications	Required	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Interfaces - Hi-Speed USB	Specify	
Indicator LEDs	Yes	
IPS/IDS module (if integrated)	Specify	
Form Factor	Rack Mounted	
Energy Efficient	Yes	
RFC Compliance	Specify	
AC/DC Input Voltage and Current	100 to 240 VAC	
Safety Certifications	Specify	
Electromagnetic Emissions Certifications	Specify	
Operating Temperature	Specify	
Warranty	Minimum 1 year	
End of Sales.	Please specify	
End of Support.	Please specify	
Any other features proposed by supplier	Specify	

Appendix C.5 - UTM Intrusion Prevention System capability

Table IX - TECHNICAL COMPLIANCE FOR INTRUSION PREVENTION SYSTEM (IPS)

TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Inspected Throughput	At least 10 Gbps	
Latency	Specify	
Concurrent sessions	Specify	
Connections per second	Minimum 200,000	
Botnet protection	Yes	
Threat Protection	Specify	
Protocol Anomaly Detection	Yes	
Zero-day threat protection	Yes	

TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Evasion Identification and Mitigation	Yes	
Application Anomaly Detection	Yes	
Passive OS Fingerprinting	Yes	
Pre-Inspection Reputation Black Lists	Yes	
Blacklist IP addresses based on reputation	Yes	
Active protection	Yes	
Passive detection	Yes	
Inline simulation	Yes	
Network attack detection and prevention	Yes	
Brute force attack mitigation	Yes	
Availability of signature updates and facility for automatically distributing these updates to all IPS	Yes	
Save the attack information (timestamp, intruder IP address, victim IP address/port, and protocol information)	Yes	
Protected segments	Specify	
Monitoring interfaces	Specify	
Active-active	Yes	
Active-passive	Yes	
Hardware-level bypass	Specify	
Redundant power supplies	Yes	
Redundant storage	Yes	
Any other features proposed by supplier	Specify	
End of Sales	Please specify	
End of Support	Please specify	

Appendix C.6 - Network Intelligence Tool - Security Information and Event Management

Table X - TECHNICAL COMPLIANCE FOR NETWORK INTELLIGENCE TOOL

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Real time dashboard (Network topology, servers, etc.)	Yes	
Availability and Uptime Monitoring	Yes	
Traffic and Utilization Monitoring	Yes	
Network Device Health Monitoring (Router, Switch, Firewall, wireless access points)	Yes	
Network Mapping	Yes	
Custom Network Maps / Network Traffic Maps	Yes	
Network Traffic Analysis	Yes	
VoIP Monitoring	Yes	
VPN Connection monitoring	Yes	
Network Configuration Management	Yes	
Netflow Analysis	Yes	
IP Address Management	Specify	
Server Monitoring (Windows/ Linux/ Unix)	Yes	
VMware Monitoring	Specify	
Hyper-V Monitoring	Specify	
Systems Management	Specify	
Firewall Analyser	Yes	
System Health Monitoring	Yes	
Active Directory Monitoring	Yes	
Database Server Monitoring	Yes	
Exchange Server Monitoring	Yes	
Service Monitoring	Yes	
Windows Service Monitoring	Yes	
Process Monitoring	Yes	
Script Monitoring	Yes	
Website Monitoring	Yes	
Internet usage by user/ip address	Yes	
Email usage	Yes	

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
File/ Folder Monitoring	Yes	
Log File Monitoring	Yes	
Syslog Monitoring	Yes	
Windows Event Log Monitoring	Yes	
Email Alert	Yes	
SMS Alert	Yes	
Real-time analysis of logs captured and immediate notifications based on severity of security alerts	Yes	
End of Support	Please specify	

Appendix C.7 - PABX Infrastructure

Table XI - TECHNICAL COMPLIANCE FOR PABX INFRASTRUCTURE

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Brand	Only vendors in “Leader” quadrant of Gartner Magic Quadrant for Unified Communications	
Number of VOIP connections	Minimum of 250 users	
Number of mailboxes	Minimum of 250 users	
Terminal type	IP phones, video phones and soft clients, fax machines, Wi-Fi phones	
Number of analogue ports	Specify	
Number and type of digital ports	Specify	
Transmission speed	100/1000 Mbps	
Trunk protocol	SIP(mandatory) *Bidders are invited to specify other supported Trunk protocols*	
Built-in voice mail channels	Specify	
GSM/3G trunking	Yes *Bidders are invited to specify the number of SIM cards that can be supported or specify separate devices if not being supported.*	
PABX Failover	Yes	
Least Cost Routing feature	Yes	
Number of PRI cards	Minimum of 2 to support at least 30 simultaneous calls	
Administration software	Yes	
Web interface	Yes	
Remote monitoring	Yes	
Call Data record	Yes	

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Personalised Voice mail	Yes	
Standard Voice mail	Yes	
Voice mail on e-mail	Yes	
Integration with email application	MS Exchange, SNMP (Mandatory) *Bidders are invited to specify the other email applications supported by the proposed solution*	
Network-based Call recording	Yes *Bidders are invited to specify the storage type and infrastructure associated.*	
Receive and forward faxes through integration with Fax server	Yes	
Fax to Email	Yes	
Fax PDF Support	Yes	
Auto-attendant	Yes	
Call hunting	Yes	
Group pickup	Yes	
Music on hold	Yes	
Call back	Yes	
Call barring	Yes	
Call forward	Yes	
Call blocking	Yes	
Call waiting	Yes	
Forced authorization PIN number	Yes	
Reporting tools to generate specific reports	Yes	
Security event logging and reports	Yes	
Authenticated call	Yes	

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Encrypted call	Yes	
PIN and password management policy	Yes	
Integration with other platforms such as Microsoft Lync communicator, Cisco jabber, Skype, etc.	Yes	
Call-Transfer rules	Yes	
Conference features	*Bidders are invited to specify the conference features supported by the proposed solution*	
Self-care	Yes	
Voice mobility	Yes	
Android /IOS/Windows mobile collaboration	Yes	
IM	Specify	
Single number search	Yes	
Video Conferencing [point to point and multipoint]	Yes	
Remote devices connect (VPN-less)	Yes	
End of Sales	Please specify	
End of Support	Please specify	
The proposed PABX solution should also support all the phone features as illustrated in ***TABLE XIV: PHONE FEATURES***		

Appendix C.8 - Specification of phones

Table XII - PHONE FEATURES

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
1.	**Application Support** Support for XML and Java Midlet applications.	✓	✓				
2.	**Call Logs** Allows you to view records of your missed, received, and placed calls.	✓	✓	✓	✓	✓	
3.	**Call Waiting** 3.1 Indicates (and allows to answer) an incoming call that is received while on another call.	✓	✓	✓	✓	✓	
	3.2 Alerts user to an incoming call by producing a tone.	✓	✓	✓	✓	✓	
	3.3 Displays incoming call information on the phone screen.	✓	✓	✓	✓	✓	
	3.4 Puts ongoing call on hold while user is answering the new call and switches back to the previous call when the new call is ended.	✓	✓	✓	✓	✓	
4.	**Corporate Directory** 4.1 Allows the use of the phone to search for co-workers' numbers.	✓	✓	✓	✓	✓	

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
	4.2 Integration with active directory of Bank of Mauritius	✓	✓	✓	✓	✓	
5.	**Desktop Messaging software** 5.1 Allows user to dial number, access directory, send text messages, and configuration of the phone from the user's PC**.**	✓	✓	✓		✓	
	5.2 Integration of video conferencing, video messaging and instant messaging with other platforms such as Skype, jabber, etc**.**	✓	✓				
6.	**Direct Transfer** Allows you to connect two calls to each other (without remaining on the line yourself).	✓	✓	✓		✓	
7.	**Edit Dial** Allows editing of a number that is displayed in a call record before dialling the number.	✓	✓	✓	✓	✓	
8.	**Extended call-coverage capabilities** Module to display list of users extension and line status					✓	
9.	**Headset Support** Allows the use of a headset with the phone.					✓	
10.	**Help System** Allows on-the-spot information about phone features, buttons, and soft keys.	✓	✓	✓	✓	✓	
11.	**High definition video** High quality video for video conference call	✓	✓				

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
12.	**Hold** Allows move of a connected call from an active state to a held state.	✓	✓	✓	✓	✓	
13.	**IP Camera** Enable 2-way video calling between phones or video conferencing through a media conference unit.	✓	✓				
14.	**Integral switch** The phone should support the 10/100/1000BASE-T Ethernet connection through two RJ-45 ports (*one for voice and one for PC*).	✓	✓	✓	✓	✓	
15.	**Message-aging policy for secure messages** A message-aging policy for secure messages automatically deletes all secure messages that are older than the specified number of days.	✓	✓	✓	✓	✓	
16.	**Message Waiting Indicator** Light on the handset that blinks or glows to indicate an incoming call or new voice message.	✓	✓	✓	✓	✓	
17.	**Multiple Calls per Line Appearance** Allows each line on the phone to support multiple calls.	✓	✓	✓	✓	✓	
18.	**Multiple Lines per Phone** Allows handling of calls on multiple phone lines.					✓	

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
19.	**Mute** Allows disabling of the audio input for handset, headset, speakerphone, and external microphone, so the user can hear other parties on the call, but they cannot hear the user.	✓	✓	✓	✓	✓	
20.	**Navigation keys** Dedicated 4-arrow keys to scroll through menus and lists appearing on the LCD display screen.	✓	✓	✓	✓	✓	
21.	**On-hook Dialling** Allows entering of a phone number before getting a dial tone and then going off hook to complete the call.	✓	✓	✓	✓	✓	
22.	**Personal Address Book Service**						
	22.1 Allows creating a Personal Address Book that the user can access on the phone.	✓	✓	✓			
	22.2 Allows synchronization of data that is stored in Microsoft Windows, Microsoft Outlook, or Microsoft Outlook Express address book(s)	✓	✓	✓			
23.	**Phone Screen** 23.1 Displays phone features, call activity, and other information.	✓	✓	✓	✓	✓	
	23.2 High quality colour screen	✓	✓				
24.	**Power over Ethernet (PoE)** Ability to power over Ethernet.	✓	✓	✓	✓	✓	

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
25.	**Programmable Buttons** Allows quick access to pre-determined options	✓	✓	✓		✓	
26.	**Redial** Allows user to call the most recently dialled phone number by pressing a button.	✓	✓	✓	✓	✓	
27.	**Restore Phone Settings** Allows restoration of phone settings (contrast, ring type, and volume) to previous values.	✓	✓	✓			
28.	**Ring Tone Setting** Allows changing of the ring sound for each phone line.					✓	
29.	**Secure, private messaging** Secure, private messaging in order to prevent the playing of private messages accidentally forwarded outside Bank of Mauritius.	✓	✓	✓			
30.	**Communication protocol** The device should support Session Initiation Protocol (SIP) and Inter-Asterisk eXchange (IAX).	✓	✓	✓	✓	✓	
31.	**Speakerphone Mode** Allows talking and listening hands-free (without using a handset or headset).	✓	✓	✓	✓	✓	
32.	**Speech-Enabled Messaging** 32.1 Use of speech commands to play and process messages (play, record, reply, forward, delete, save, etc.).	✓	✓				

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
	32.2 Use of speech commands to edit and manage personal greetings.	✓	✓				
	32.3 Use of speech commands to call from directory	✓	✓				
	32.4 Use of speech commands such as pause, resume, speed up, slow down, skip ahead, and skip back to provide rich and granular control of messages and	✓	✓				
33.	**Speed Dialling** Allows the user to enter an index code, press a button, or select a phone screen item to place a call (rather than dialling the number manually).	✓	✓	✓		✓	
34.	**Touchscreen** Allows the user to press the phone screen to choose menu items, soft keys, and features	✓					
35.	**User Profiles feature** Option to make a user's personal settings accessible from any similar phone within the network of Bank of Mauritius.	✓	✓				
36.	**Voice Messaging** 36.1 Provides support for a voice-messaging service.	✓	✓	✓			
	36.2 User can play and process messages (repeat, reply, forward, delete, save).	✓	✓	✓			
	36.3 User can reverse, pause, or fast forward messages during playback.	✓	✓	✓			
	36.4 User can control volume and speed during message playback.	✓	✓	✓			
	36.5 You can pause or resume during message recording.	✓	✓	✓			
	36.6 You can address messages to multiple recipients.	✓	✓				

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
	36.7 You can hear before playing a message that it has been sent to multiple recipients.	✓	✓				
	36.8 User can search for messages by caller ID, name, or extension in saved messages with a message locator option,	✓	✓	✓			
	36.9 You can record a live conversation with a caller and have the recording sent to your mailbox.	✓	✓				
37.	**Voice messages shredding** Feature to shred voice messages for secure deletion.	✓	✓				
38.	**Volume Settings** 38.1 Allows the user to adjust the volume level for the currently active audio device (handset, headset, or speaker).	✓	✓	✓	✓	✓	
	38.2 When no audio devices are active, pressing the Volume button adjusts the ringer volume.	✓	✓	✓	✓	✓	
39.	**Wireless IP Phone** 39.1 Automatic keypad lock	✓					
	39.2 Call forward	✓					
	39.3 Call history lists	✓					
	39.4 Phone range should be at least 100 meters including wall obstacle	✓					
	39.4 Call pickup	✓					
	39.5 Call waiting	✓					

REQ #	FEATURES	TYPES OF USERS					BIDDER PROVIDES
		EXECUTIVES	MANAGEMENT	USERS	MEETING ROOMS	RECEPTION	(YES/NO /PARTLY) *SPECIFY IF PARTLY*
	39.6 Caller ID	✓					
	39.7 Corporate directory	✓					
	39.8 Conference	✓					
	39.9 Hold	✓					
	39.10 Message-waiting indicator	✓					
	39.11 Mute	✓					
	39.12 Personal directory	✓					
40.	**360-degree room coverage** 40.1 Ability to deliver a 360-degree room coverage for large conference room				✓		
	40.2 Maximum microphone sensitivity				✓		

Appendix C.9 - Wireless Access Point

Table XIII - TECHNICAL COMPLIANCE FOR WIRELESS ACCESS POINTS

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Make	Specify	
Model	Specify	
Country of Origin	Specify	
Compliance	The access points should be fully compliant with IEEE 802.11a, 802.11b , 802.11g, 802.11n, 802.11ac standards and Wi-Fi CERTIFIED	
Radio Communication/ Telecommunication equipments proposed must have a type approval Certificate from ICTA	Yes	
Certification	FCC, CE, Wi-Fi	
IEEE 802.11ac	Yes	
Backward compatibility	The access point should be configured for complete backward compatibility; and it should support 802.11b, 802.11g and 802.11n.	
AP Management	Access points should be managed with AP controller.	
Antenna	Specify whether internal or external	
Number of MIMO	Specify	
LAN ports	At least 1 GBps port	
VLAN support	At least 6	
Security features	Password enabled, WPA, WAP2/ AES Encryption, WEP Encryption, MAC Filtering, SSID Broadcast Enable/Disable	

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Encryption	Specify *AES,EAP, EAP-TLS, TLS, PEAP, TTLS, TKIP, WEP, WPA, WPA2,TKIP encryption enhancements: key hashing (per-packet keying), message integrity check (MIC) and broadcast key rotation via WPA TKIP.*	
802.1X	Yes	
RADIUS and Active Directory support	Yes	
Support for VoIP and multicast IP video streaming	Yes	
End of Sales	Please specify	
End of Support	Please specify	

Appendix C.10- Wireless Controller

Table XIV - TECHNICAL COMPLIANCE FOR WIRELESS CONTROLLER

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Make	Specify	
Model	Specify	
Country of Origin	Specify	
Manage all AP	Yes	
Number of AP supported	At least 30	
Roaming	Must support seamless roaming between AP.	
Rogue AP detection	Yes	
Support for 802.1x	Yes	
Support for RADIUS/TACACS/LDAP	Specify	

TECHNICAL SPECIFICATION	REQUIRED	COMPLIANCE(YES/NO) OR SPECIFICATION OFFERED
Network Ports	At least 1 GBps port	
Dynamic VLAN assignment capabilities	Specify	
Report generation	Yes	
End of Sales	Please specify	
End of Support	Please specify	

Appendix C.11- Proposed Bill Of Materials – Hardware

Please provide the count of proposed hardware devices in the below format

Table XV – Bill of Materials - Hardware

Bill Of Materials for Hardware		
Sr No	Particulars	Proposed Quantity

Appendix C.12– Proposed Bill Of Materials – Software

Please provide the count of proposed software components in the below format

Table XVIVIII – Bill of Materials – Software

Bill Of Materials for Software		
Sr No	Particulars	Proposed Quantity

NOTE: Do NOT provide any pricing information in the above tables

Appendix D - IT Security Compliance

Table XVII - SECURITY COMPLIANCE

S/NO	TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE (YES/NO) OR SPECIFICATION OFFERED
1. Switch hardening			
1.1	Install the latest version of network operating system/ firmware	Yes	
1.2	Implement access control lists to restrict host	Yes	
1.3	Implement auditing of important events	Yes	
1.4	Logically separate VLANs or encryption should be implemented to secure SNMP traffic	Yes	
1.5	Configuration of switch to use non-default community string and access list	Yes	
1.6	Disable SNMP if the protocol is not being used	Yes	
1.7	Create an “enable” password on all switches	Yes	
1.8	Encrypt all passwords for login access (i.e., CON, VTY)	Yes	
1.9	Assign a password to each interface of the switch	Yes	
1.10	Create an appropriate legal warnings banner	Yes	
1.11	Disable Proxy ARP on switches unless it is required	Yes	
1.12	Set timeout values for an unattended console	Yes	
1.13	Disable unnecessary services	Yes	
1.14	Disable DNS Name Resolution or restrict DNS lookups to required hosts	Yes	
1.15	Assign a description to each port	Yes	
1.16	Shut down unused ports and modules	Yes	

S/NO	TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE (YES/NO) OR SPECIFICATION OFFERED
1.17	Enable the SSH protocol and remove telnet access to the switch unless required	Yes	
1.18	Enable “Password Encryption Service” in all network devices	Yes	
1.19	Ability of critical network equipment to operate in a fail over mode	Yes	
1.20	All measures taken for 1.1 to 1.19 to be documented and provided to the Bank as a deliverable prior to commissioning	Yes	
2. Security for the VOIP Infrastructure			
2.1	Set up of VLANs to segregate VoIP traffic from other network traffic	Yes	
2.2	VoIP infrastructure to be protected by VoIP-enabled firewall and VoIP-enabled Intrusion Prevention System	Yes	
2.3	All audit files must be archived and purged for a period of time to be provided by the Bank	Yes	
2.4	Call Detail Records must be retained for a period of time to be provided by the Bank	Yes	
2.5	Enable Auditing on key OS and call managing software or VoIP application server directories	Yes	
2.6	Logging of IP Phone Registration events must be in place	Yes	
2.7	VoIP servers must not be added to the Windows domain	Yes	
2.8	Call managing software must block IP Phones from downloading any binaries other than what IP Phones require to operate	Yes	
2.9	Change the default administrator password for IP Phones	Yes	
2.10	GARP must be disabled in the IP Phone configuration	Yes	

S/NO	TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE (YES/NO) OR SPECIFICATION OFFERED
2.11	IP phone configuration information must be password protected	Yes	
2.12	Media Termination Point (MTP) must be disabled for all remote phones with public IP addresses	Yes	
2.13	The Automatic phone registration feature must be disabled for normal call managing usage	Yes	
2.14	The PC Port setting must be disabled in the IP Phone configuration, if not in use.	Yes	
2.15	Ability to prevent users from changing the IP phones configuration	Yes	
2.16	The systems on which IP Soft Phones (PC based IP Phones) have been installed must satisfy for security standards of the Bank and ensure that they connect to the VoIP network segment securely	Yes	
2.17	Web functionality must be disabled in the IP Phone configuration	Yes	
2.18	A disaster recovery plan must be set in accordance with the Bank's standards	Yes	
2.19	Maintain up-to-date electronic and hardcopy versions of the call managing software configurations	Yes	
2.20	The Automated Alternate Routing feature is enabled on the call managing software and the Call Admission Control feature must be enabled to control bandwidth usage	Yes	
2.21	Restrict unauthorized calls during certain hours	Yes	
2.22	Create Multiple Privilege Levels to protect the system from unauthorized access	Yes	
2.23	In a VoIP deployment, call processing servers must be managed from a dedicated console	Yes	
2.24	Secure the System Administrator Account from authenticating against a password only	Yes	

S/NO	TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE (YES/NO) OR SPECIFICATION OFFERED
2.25	A legal notice and warning must be implemented in order to provide adequate protection and awareness of legal issues	Yes	
2.26	An uninterrupted power supply must be used with all VoIP servers and critical network components	Yes	
2.27	HTTPS must be used for the call management GUI	Yes	
2.28	Limit the connections for the H.225 protocol to only come from the Gate Keeper	Yes	
2.29	Minimize Jitter for VoIP services by Implementing Link Fragmenting and Interleaving	Yes	
2.30	Multiple partitions must be created and directory permissions must be strictly granted on the system running the VoIP Servers	Yes	
2.31	Simple TCP/IP services that enable unnecessary enticement information services to run must be removed	Yes	
2.32	SNMP must be disabled if it is not being used for remote management. If SNMP is used, the default PUBLIC community name must be changed	Yes	
2.33	The maximum number of connections to the call management console must be limited	Yes	
2.34	The latest version of firmware image for the IP Phones must be tested and applied to all with minimum delay	Yes	
2.34	The TFTP Server which stores the IP Phone configuration files must be placed and accessible only by the VoIP network segment	Yes	
2.35	Use a two layer device and user authentication for IP phones	Yes	
2.36	VoIP system passwords must be encrypted	Yes	

S/NO	TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE (YES/NO) OR SPECIFICATION OFFERED
2.37	All user accounts must have an applicable, informative full name and description	Yes	
2.38	The account lockout feature, disabling an account after a number of failed log in attempts, must be enabled and the related parameters must be set in accordance with corporate security standards and guidelines	Yes	
3. Firewall and IPS/IDS			
3.1	Failed attempts to company resources on the bastion host and DMZ servers should be actively logged.	Yes	
3.2	The firewall should employ a mechanism to summarize usage statistics by service.	Yes	
3.3	The firewall system should contain a mechanism for logging traffic, and suspicious activity and highlights critical log files entries	Yes	
3.4	Inbound packets with a source address originating from the internal network should be dropped	Yes	
3.5	Information servers (e.g., web server or DNS server) should be located on an isolated network segment behind the Internet router (DMZ) which can be part of Tier 1	Yes	
3.6	Static routes should be used from the externally facing router to the internal network	Yes	
3.7	The firewall should be set to deny any service unless specifically permitted	Yes	
3.8	The firewall should use a "split" DNS architecture to prevent internal host names from advertising on the public Internet	Yes	
3.9	All ICMP traffic (except ping to the information servers and those deemed required by the Bank) should be dropped	Yes	
3.10	All unnecessary ports should be blocked.	Yes	

S/NO	TECHNICAL SPECIFICATIONS	REQUIRED	COMPLIANCE (YES/NO) OR SPECIFICATION OFFERED
3.11	The firewall should have the ability to centralise SMTP access to prohibit direct SMTP connections between internal and remote systems	Yes	
3.12	The firewall system should accommodate new services without major modification	Yes	
3.13	The firewall system should support advanced authentication mechanisms or hooks for installing advanced authentication measures such as two-factor authentication and one-time passwords	Yes	
3.14	The firewall system should use a stripped down kernel with unnecessary components removed	Yes	
3.15	Unencrypted in-band programming of the firewall should not be performed	Yes	

Appendix E - Team Composition

Table XVIII - TEAM QUALIFICATIONS AND EXPERIENCES

Person			Qualification		Experience	
Name	Designation	Proposed Role	Education	Certifications	Years of Exp.	Projects Handled

Format of curriculum vitae (CV) for proposed professional staff

Below is the format in which the proposed resources' profiles are to be submitted:

<Name of the Resource>
Proposed position: **Name of firm:** **Name of staff:** **Profession:** **Date of birth:** **Years with firm:** **Nationality:** **Membership in professional societies:** • **Detailed Tasks Assigned:** • **Key Qualifications:** •

Work undertaken that best illustrates capability to handle the tasks assigned
Name of assignment or project: **Year**: **Location**:

Client: **Main project features:** **Positions held**: **Activities performed:**
Name of assignment or project: **Year**: **Location**: **Client:** **Main project features:** **Positions held**: **Activities performed:**

Education:

Institution	Degree(s) or Diploma(s) obtained:

Employment Record:

Period	Employer	Position Held	Location of Assignment

Languages

Language	Speaking	Reading	Writing

Certification

I, the undersigned, certify that these data correctly describe me, my qualifications and my experience.

Date: _____

_____

[Signature of staff Member]

Date: _____

_____

[Signature of authorized representative of the firm]

Full name of staff member:
Full name of authorized representative:

Appendix F - Past Experience

Appendix F.1– Relevant Past Experience

Table XIX provided below is to be used for providing details of relevant past experience of the bidder in the last three (3) years in delivering similar solutions to the organisation of similar size

Table XIX - DETAILS OF RELEVANT PAST EXPERIENCE

Customer site (Company Name, Address)	Project Description	Quantity (IP Phones and data network devices)	Date of implementation	
			Month	Year

Bidder is required to provide testimonials or exhibits of signed contracts as evidence of the past experience included in the Table XIX above.

Appendix F.2 – Reference Sites

Table XX - REFERENCE SITES

OTHER USERS AND REFERENCE SITES	RESPONSE
Number of corporate customers where similar solutions have been implemented in the last 3 years.	
Nominate at least 2 reference sites which may be visited by the Bank, detailing: • Name and address of client. • Name, title and telephone of contact at client. Describe how reference site client is using the system in similar way to the Bank's anticipated installation. • Scope and length of bidder involvement with the reference site. • Version currently installed at the reference site.	

Appendix G - Costs Breakdown

The cost of the proposed system must be broken down into hardware and software costs. Hardware costs must be broken down on a line-item basis and the bidder should stipulate whether any of the proposed hardware costs are optional. Software or licensing costs must be provided on a sliding scale basis, with the cost of additional licenses clearly listed.

Bidders are requested to provide a detailed price breakdown of the proposed total cost.

Table XXI – COMMERCIAL PROPOSAL FORMAT

Bill OF Materials for Data Hardware (Switches, Wireless AP, LAN tester, etc.)				
Sr No	**Particulars**	**Unit Price**	**Proposed Quantity**	**Total Price**
			Subtotal-Hardware(A)	

Bill OF Materials for Security Hardware (Firewall, IPS, Web application firewall, etc.)				
Sr No	**Particulars**	**Unit Price**	**Proposed Quantity**	**Total Price**
			Subtotal-Hardware(B)	

Bill OF Materials for PBX (Call Manager, IP Phones, Softphones, Licenses etc.)				
Sr No	**Particulars**	**Unit Price**	**Proposed Quantity**	**Total Price**
			Subtotal-Hardware(C)	

Bill OF Materials for Software (Penetration testing, Monitoring tools, RADIUS, etc.)				
Sr No	**Particulars**	**Unit Price**	**Proposed Quantity**	**Total Price**
			Sub Total-Software(D)	

Yearly Support Costs				
Year 1*	**Year 2**	**Year 3**	**Year 4**	**Year 5**
			Sub Total- 5Year Support Cost (E)	

Total Contract Value (A+B+C+D+E)	

***Year 1 starts as from date of Commissioning**

Appendix H - Bank Guarantee

Appendix I - Manufacturers' / Producers' Authorization Form

END OF DOCUMENT