



बैंक ऑफ़ बड़ौदा
Bank of Baroda

**REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC
CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE
ANNUAL MAINTENANCE CONTRACT (CAMC) FOR INTEGRATED
BUILDING MANAGEMENT SYSTEM (IBMS) IN**

**BANK OF BARODA
BARODA SUN TOWER,
C-34, G-BLOCK, BANDRA KURLA COMPLEX,
BANDRA (EAST),
MUMBAI – 400 051**

NAME OF ARCHITECT



SARAYAN TURNKEY SOLUTION

**703, D'Souza Mansion, Behind Right Choice Restaurant,
J.S. Road, Dahisar (West), MUMBAI-400 068.**

Tel No: 022-28956520/ 28944423.

Kirtan Patel:- 9320790825 / 8169250611

Makarand :- 8082198423

E-mail: sarayanbanks@gmail.com;
pladarchitects@gmail.com

RFP Reference: SEC/BST/IBMS/113/896 dated: 26.11.2021



REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

The Chief Security Officer, Bank of Baroda, Baroda Sun Tower, Mumbai invites request for proposal (RFP) for Upgradation of Existing HVAC Controls, Access control system and entering into Comprehensive Annual Maintenance Contract for Integrated Building Management System in Bank of Baroda, Baroda Sun Tower, C-34, G-Block, Bandra Kurla Complex, Bandra (East), Mumbai from competent bidders who have experience in SITC and maintenance of the IBMS. The contract shall be for a period of 3 years after completion of Defect Liability Period of the system installed and can be extendable by subsequent period based on the performance and it will be at the sole discretion of the Bank, unless terminated by the Bank at its own convenience by giving a prior notice of 30 days in writing to the firms without assigning any reason(s) and without any cost(s) or compensation therefore.

Prospective service provider may download the RFP document only from the Bank's website www.bankofbaroda.in/tenders.

[A] Important Dates

RFP Reference Number	RFP No: SEC/BST/IBMS/113/896 dated: 26.11.2021
Earnest Money Deposit	Rs. 50,000/- (Rupees Fifty Thousand only) in the form of Bank Draft/Banker's cheque in favor of Bank of Baroda, payable at Baroda Corporate Office, Mumbai.
Availability of RFP document	RFP will be available on our Bank website www.bankofbaroda.in/tenders from 26.11.2021 to 20.12.2021. The RFP may be downloaded from the Tender Section by the Bidders. No hard copy of the RFP will be made available by the Bank.
Last date of submission of any query / reporting any error	Before 06.12.2021 ALL QUERIES TO BE SUBMITTED VIA EMAIL ONLY ON security.bcc@bankofbaroda.com/ security.bst@bankofbaroda.com
Pre Bid Meeting	On 07.12.2021 at 15:00 Hrs.
Last Date, Time and Place for receipts of bids	Date: 20.12.2021, Time: 15:00 Hrs. Place: BCC, Mumbai
Date and Time of Technical bid Opening	Date: 20.12.2021, Time: 15:30 Hrs. Place: BCC, Mumbai
Date and Time of Financial bid Opening	Date and Time will be intimated by email to the qualified vendors after the Technical Evaluation of the Bids.
Address for Communication	Baroda Sun Tower, C-34, G-Block, Bandra Kurla Complex, Bandra (East), Mumbai, 400 051
Contact person: Mobile & Telephone Details:	Mr. Vijay Kumar, Chief Manager (Fire Safety) 022 6698 5066 / 4911

[B] Important Definitions: - Following terms are used in the document interchangeably to mean:

1. BANK means "Bank of Baroda".
2. RFP means this "Request for Proposal Documents"
3. Recipient, Respondent and Bidder, Vendor, means "Respondent to the RFP Document".
4. Tender means RFP response documents prepared by the Bidder and submitted to Bank of Baroda

5. IBMS means “Integrated Building Management System” (includes upgraded HVAC Controls, Access control system and existing CCTV System, Fire Alarm System, PA system).
6. “CAMC” means COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT.
7. DLP means “Defect Liability Period”

Important note:

As per the order no. 6/18/2019-PPD dated 23rd July 2020 issued by Ministry of finance department of expenditure

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.
- II. “Bidder” (including the term ‘tenderer’, ‘consultant’ or ‘service provider’ in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. “Bidder from a country which shares a land border with India” for the purpose of this Order means:
 - a. An entity incorporated, established or registered in such a country; or
 - b. A subsidiary of an entity incorporated, established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose *beneficial owner* is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or
 - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
- IV. The beneficial owner for the purpose of (iii) above will be as under:
 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation—

- a. “Controlling ownership interest” means ownership of or entitlement to more than twenty-five per cent, of shares or capital or profits of the company;
 - b. “Control” shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether

acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. [The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

Service providers fulfilling the specified requirements may submit their Bids as required so as to reach us latest on 20.12.2021 by 15:00 Hrs. at the following address-

Baroda Sun Tower, C-34, G-Block, Bandra Kurla Complex, Bandra (East), Mumbai, 400051, Prospective bidders are requested to submit their points for clarification during pre-bid meeting at under mentioned email address latest by **06.12.2021 by 17:00 Hrs.** to security.bcc@bankofbaroda.com and security.bst@bankofbaroda.com.

Further “**Addendum**” shall be issued on Bank’s website only and bidder has to refer the same before final submission of the Tender.

Bidders are advised to check Bank’s website till the last date of submission of the bids for any ‘**Addendum**’.

The Bank reserves the right to reject any / all applications without assigning any reason whatsoever.

Confidentiality:

his document is meant for the specific use by the Company / person/s interested to participate in the current tendering process. This document in its entirety is subject to Copyright Laws. Bank of Baroda expects the bidders or any person acting on behalf of the bidders to strictly adhere to the instructions given in the document and maintain confidentiality of information. The bidders will be held responsible for any misuse of the information contained in the document and liable to be prosecuted by the Bank. In the event of such a circumstance is brought to the notice of the Bank. By downloading the document, the interested party is subject to confidentiality clauses.



REQUEST FOR PROPOSAL (RFP) FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING (SITC) OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

1. Scope of the Work

The IBMS (Integrated Building Management System) in this building consists of HVAC Controls, CCTV System, Fire Alarm System, Public Address System and Access Control System. Bank proposes to upgrade existing IBMS installed in its Baroda Sun Tower Building at Bandra Kurla Complex and maintain the same system for further period under Comprehensive Annual Maintenance Contract.

On inspecting the entire system by the consultant, it is observed that, some upgradation is needed in the HVAC Controls and Access controls, which Bank intent to carry out through the identified agency. The agency identified for the job shall be responsible for procuring required material, as approved, install the same and commissioning entire system. Software and hardware integration and ensuring compatibility of new / alternate equipment shall be the responsibility of the agency. Though the upgradation of only HVAC System and Access control system is proposed, functioning of other components of IBMS or any other electromechanical equipment should not be in any way altered by the upgradation or installation activities undertaken.

Second part of the scope shall include rendering Comprehensive Maintenance Contract for entire IBMS System installed in the building which shall include upgraded part and the existing part of IBMS i.e. CCTV System, Fire Alarm System & PA System.

Agencies willing to undertake both the jobs only need to apply against this RFP.

The contractor shall carry out upgradation of HVAC Controls, Access control system and Periodical Maintenance under CAMC of following systems associated with Integrated Building Management System:

1. HVAC Controls.
2. CCTV System.
3. Addressable Fire Alarm System.
4. Public Address System.
5. Access Control System.

However, the CAMC charges for up-gradated HVAC System & Access Control System will be effective after completion of DLP period.

Details of equipment available in the building:

1. HVAC Controls: (OEM: Johnson Controls)

Software	DDC Panel (Source 1 Easy IO 30 P)	AHU Controller (Source 1 Easy IO 30 P)	Main Controller
M3I (Johnson Controls)	16	16	16

2. CCTV System:

Sl. No.	OEM	DVR MODEL NO	Chanel	BACKUP DAYS	HDD CAPACITY
1	HIKVISION	DS - 7316HGHI - SH	16	90 DAYS	12 TB
2	HIKVISION	DS - 7316HWI - SH	16	90 DAYS	6 TB
3	HIKVISION	DS - 7316HWI - SH	16	90 DAYS	6 TB
4	HIKVISION	DS - 7316HWI - SH	16	90 DAYS	8 TB
5	JOHNSON CONTROL	JCVS - DA030 - 1F	16	90 DAYS	6 TB
6	HIKVISION	DS - 7316HQHI - K4	16	90 DAYS	4 TB
7	HIK VISON	DS - 7204HGHI - SH	4	90 DAYS	4 TB
8	HIK VISON	DS - 7204HGHI - SH	16	90 DAYS	4 TB

3. Fire Alarm System: Fire Alarm Panel (OEM: BOSCH, Model No.: FPA 5000)

SMOKE DETECTOR	HEAT DETECTOR	MCP	HOOTER	MONITOR MODULE	CONTROL MODULE	RELAY MODULE	REPEATER PANEL
336	69	22	46	47	24	9	1

4. Public Address System: Amplifier (OEM: BOSCH, Model No.: LBD 1938/00)

MAIN CONTROLLE R	ROUTER	SPEAKERS	CALL STATION	EXPANSION CALL STATION	LINE LEVEL CONVERTER	42 U RACK	ZONE AMPLIFIER	MUSIC PLAYER
1	1	167	1	1	4	1	1	1

5. Access Control System: (OEM: BOSCH)

Software	Control Panel (APC-CAMC2-4WCF)	Readers (HID R-640X-300)
BOSCH	7	30
BIS		

2. Submission of Proposal

The offer will be in two parts; Technical & Commercial separately. Both the parts should be submitted in separate sealed covers duly super-scribed "**Technical Offer for Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for IBMS**" and "**Commercial Offer for Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for IBMS**" respectively. The Commercial Bid for **Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for IBMS**, for which the vendor is applying to be put in a separate envelope. Both sealed envelopes should be placed in another sealed envelope super-scribed "**REQUEST FOR PROPOSAL (RFP) FOR Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for Integrated Building Management System in BANK OF BARODA, BARODA SUN TOWER, MUMBAI** with Security Department at above



given address by **20.12.2021 on or before 15:00 Hrs.** along with Earnest Money of Rs 50,000/- **(Rupees Fifty Thousand only)** by way of DD/Pay order in favor of Bank of Baroda payable at Baroda Corporate Office, Mumbai in a sealed envelope.

MSEs (Micro and Small Enterprise) / NSIC / KVI etc. are exempted from paying the Earnest Money deposit (EMD) amount for which the concerned enterprise needs to provide necessary certificates / documentary evidence. For MSEs, Govt. of India provision shall be considered while evaluating the tender.

Service Provider must sign each page of document submitted failing which the application is liable to be rejected. The proposal received after the time of submission, or without application fee or without earnest money or conditional applications would be rejected. Further, the Bank reserves the right to accept or reject any or all applications without assigning any reason.

Bank reserves right to cancel or withdraw this RFP at any stage without assigning any reason.

The process of Selection of bidder and basic criteria which the Applicants should fulfill for Selection of bidder is given in subsequent paragraphs.

3. Eligibility criteria for Bidders:

(a). General Instructions & Conditions

- i. The product offered by service provider should be able to integrate with existing system. The upgraded software and hardware should support with other OEM.
- ii. Please read the terms and conditions carefully before filling the proposal.
- iii. Please sign all the pages of the RFP including each page of the proposal form.
- iv. There should be no cutting / over writing. The cutting / over writing, if any, should be duly attested.
- v. Bidder should have their registered office in Mumbai.

(b) Registration

- i. The prospective applicant should be a registered company / firm including Service Providers, manufacturers (OEMs) and or their authorized suppliers and dealers.
- ii. The Applicants should have authentic PAN, GST etc. allotted by competent authorities.
- iii. Certificate of statutory competent authority regarding Registration and Incorporation, Memorandum & Article of Association, Partnership Deed etc. is a must.

(c) Turnover and Service Network Criteria:

The Applicants should have following financial turnover and service center criteria besides having GST in each of the state concerned:-

The Turnover of the Firm for the last -3- Years for the similar nature of works		Minimum average turnover of Rs. 1 Crore during last three years for a work of similar nature.
Year	Turn Over amt. in Lakhs	Audited Balance Sheet (att. Copy)
2018-2019		
2019-2020		
2020-2021		

(d) **Experience and Product Certification**

The Applicants should have the following experience, product certification and other criteria: -

- i. **Experience**-The applicant should have minimum Five (5) years' experience in the field of Supply, Installation, Commissioning and Testing of Integrated Building Management System and Comprehensive Annual Maintenance Contract for IBMS as required by the bank and for which Selection of bidder is sought, as on 07.12.2021.
 - ii. **Work Executed.** The bidder shall have carried out similar work of Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for IBMS in multi-storeyed commercial building during last 05 financial years as under:
 - a) One similar work of 80% of estimated cost
 - b) Two similar works of 50% of estimated cost
 - c) Three similar works of 40% of estimated cost
 - iii. **Product Certification.** The products of the applicant should have latest BIS, FCC, IEEE, UL, BTL, CE etc. certifications respectively. The products should be based on latest technology for the specific requirement.
 - iv. **OEM Certificate.** The applicant should have OEM certificate from original equipment manufacturer along with confirmation that they would supply original quality spare parts for the quoted model for minimum next 10 years from the date of installation. **OEM letter to be in Original and no photocopy or colored Xerox will be acceptable (In absence of the original certificate from the OEM the Service provider will be disqualified).**
- (e) **Performance Certificate:** The applicant should submit a "Satisfactory Performance Certificate" from at least -03- organizations preferably from Govt. /PSU organization related to SITC or CAMC of IBMS.
- (f) **Past Record:** The applicant should not have been blacklisted by any PSU/PSB/Govt. Organization in past 5 years or services terminated due to poor performance. A certificate be submitted stating that the company/firm or its Bank or any sister concern have not been blacklisted. **(Annexure -I)**

4. Bid Submission Process

Interested parties shall submit their offers in sealed covers super scribed as “**Technical Offer for Upgradation of HVAC Controls, Access control system and COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT for IBMS**”.

The offer will be in two parts, Technical Bid and Commercial Bid. Technical Bid will be opened and after technical evaluation, technically qualified bidders will be short listed for next stage of evaluation.

The Financial Bid / Price bid will be opened of only those Service Providers who qualify technically.

Part 1- Technical Offer- Shall contain the details required to be furnished by Tendering Service Provider, as enumerated under the heading Eligibility Criteria of this document. The Technical Bid offer (TO) should be complete in all respects and contains all information asked in this document. It should not contain any price information. The Technical Bid offer should comprise of the following:

- (a) Covering letter on the prescribed format (**Annexure-I**).
- (b) Earnest Money Deposit of **Rs 50,000/-** in the form of a demand draft / pay order issued by a scheduled commercial bank favouring Bank of Baroda, payable at Baroda Sun Tower, Mumbai. In absence of EMD/ suitable documentary proof for exemption of EMD amount, the bid will be technically rejected without any clarification.
- (c) Supplier's profile as per (**Annexure II**).
- (d) Certificate from **OEM (Original Equipment Manufacturer) (Annexure-III)** that they would supply original quality spare parts for the quoted model for minimum next 10 years. Letter from OEM will be in original (Hard copy), no Xerox/ mail print is acceptable. **In absence of this your Tender will be rejected.**
- (e) **Latest BIS, FCC, UL, BTL, CE etc. certifications** for the product offer against this RFP.
- (f) Documentation (Product Brochures, leaflets, manuals etc.)
- (g) Details of reference sites as per **Annexure-IV including relevant work completion certificates.**
- (h) Details of technical qualified staff. (**Annexure-V**)
- (i) List of the project executed by firm during the last 5 Years as per pre-qualification terms (**Annexure- VI**)
- (j) List of Important Projects in hand related To CAMC of IBMS (**Annexure-VII**)
- (k) Technical Specifications (**Annexure-VIII**)

No bid later than 15:00 Hrs., 20.12.2021 shall be accepted.

Part-2- Price Bid- Price bids of the product offered will be kept together in one Sealed envelope (separately), super scribed "**Commercial Offer for Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for IBMS** for Baroda Sun Tower, Mumbai. (**Annexure-IX**).

Price Bid will not be included in Technical Bid and any Bid without the Price Bid shall be rejected.

Both Technical and Commercial Bids be kept in the third envelope super scribed “Request for Proposal for **Upgradation of HVAC Controls, Access control system and Comprehensive Annual Maintenance Contract for IBMS** for Baroda Sun Tower, Mumbai.

The Commercial Offer (CO) should contain relevant price information and the rates should be quoted in Indian Rupees only.

5. Conditions:

- a **Defect Liability Period.** : Twelve months (From the date of project completion certificate).
- b **Period of Final Measurement.** : 1 Months from the date of Virtual Completion.
- c **Date of Commencement.** : 7th day from issue of work-order.
- d **Rate of Liquidated Damages.** : As per terms and condition of agreement and work-order.
- e **Retention Percentage** : 5 % of accepted tender value. (Retention money will be refunded after successfully completion of DLP)
- f) **Security Deposit (EMD + Total Retention money)** : Rs. 50,000/- + 5 % retention money
- g **Period of honoring bill** : 15 Days for R.A. Bills & 1 Months for final bill.
- h **Completion Period of upgradation** : 8 weeks.
- i) **CAMC Payment** : No advance payment will be made by the bank against the CAMC, payment will be released on quarterly basis after satisfactory completion of quarterly AMC visits.
- : 50.00 Lakh

J) **Estimated Cost :**

6. **Inspection of Facilities:** The applicant should not have any objection to bank inspecting their manufacturing / R&D /other infrastructure or any office to verify documentary/other claims as per application process. Bank may also hold inquiries from past/existing clients of the applicant.

7. **Earnest Money Deposit**

Earnest Money deposit of **Rs 50,000.00/- (Rupees Fifty Thousand only)**, in the form of DD/ Pay order favoring Bank of Baroda, payable at Mumbai, must be submitted along with Tender. Offers not accompanied with EMD will not be accepted. The EMD will be forfeited if, bidder withdraws his bid during selection process, or having been selected by the Bank for the job, the Service Provider refuses to accept any contract or having accepted the contract, fails to carry out his obligations mentioned herein. No interest will be payable on the EMD. The EMD

will be refunded to the unsuccessful Service Provider on completion of the process of selection. **The Earnest Money paid by the successful Service Provider will be released only after furnishing the Performance Bank Guarantee.**

8. Performance Bank Guarantee

Successful supplier should produce an unconditional Performance Bank Guarantee from any Schedule Commercial Bank excluding Co-operative Bank and Bank of Baroda. The Performance Bank Guarantee of Rs. 2.0 Lakh for a period of 4 years and 03 month from the date of commencement of contract.

The Performance Bank Guarantee shall be adjusted against any loss, theft, damage, expense etc. to the Bank. During the period of contract including AMC period supplier should attend to all repairs / defects / replacement of major/minor spare parts free of cost. In case of failure on the part of the supplier to attend to the defects within a reasonable period, the Bank on its own will get the defects rectified through another System Integrator at the risk and cost of supplier and repairs rectified through another System Integrator in such circumstance will not affect the liabilities of the supplier on the warranty for its remaining period nor will it affect the supplier's liabilities on the stipulated post-warranty Comprehensive Annual Maintenance Contracts.

9. No Erasures or Alterations

Technical / Commercial details must be completely filled up. Corrections or alterations, if any should be authenticated. **Every page of the submitted tender must have company's seal & signed by the authorized person.**

10. No Price Variations

The commercial offer shall be based on rates to be quoted excluding of Taxes. Taxes will be paid as per prevailing rates. The clause is to be read as:

(i) Excise & Sales Taxes, Works Contract for Works

The Contractor shall pay and be responsible for payment of all taxes, duties, levies, royalties, fees etc. or charges in respect of the works including but not limited to sales taxes, tax on works contract **GST**, Excise duties, octroi etc. payable in respect of materials, equipment, plant and other things required for the Contract.

(ii) New Taxes, Duties & Levies, etc.

If a new Tax or Duty or Levy is imposed under as statute or law during the currency of the contract, the same may be reimbursed to the Employer if so deemed fit on documentary evidence.

11. Evaluation Process

Offers will be evaluated in the following stages:

Stage I

Offers will be evaluated against the stipulated minimum eligibility criteria. Offers not complying with the eligibility criteria will be rejected summarily.

Stage II

A technical evaluation of proposals will be carried out. Offers received without fulfilling the following conditions shall not be evaluated.

- (a) If offer is incomplete and/or not accompanied by all stipulated document
- (b) If any of the terms and conditions stipulated in this document is not accepted and Letter as per **Annexure - I** is not submitted.

Stage III

Short-listing of Service Providers based on the technical evaluation will be called for demonstration of offered product.

Stage IV

Product demonstration of the makes and model submitted by the respective Service Provider who has qualified in Stage –III will be done by the service provider at Bank's Sun Tower Building, BKC, Mumbai. Further site verification of bidders will be carried out by Bank's Officials who has qualified in this stage of evaluation.

Stage V

Opening of Financial Bids of only those bidders who have technically qualified in **Stage -IV**. Intimation to this effect would be given by emails to shortlisted bidders. The total charges stated for Annexure IX (Grand Total: A + B +C respectively) will be considered for financial evaluation of the Financial Bid.

Awarding Rate Contract-

L-1 will be decided on package cost of upgradation of HVAC & Access Controls and CAMC of HVAC Controls, CCTV, Fire Alarm System, Access Control System & Building Management System installed in Baroda Sun Tower, Mumbai.

The Security Deposit, either in whole or in part thereof, shall be forfeited in the event of the Service Provider's failure to observe any terms of this Contract / or non-compliance with the conditions of the Contract.

12. Validity of offer and Penal Clause:

Bids shall remain valid for a period of 120 Days from the date of opening of the Financial Bid. A bid valid for a shorter period may be rejected by the Bank as non-responsive. Validity of all the eligible bids would be required till the successful bidder/s sign contract with BOB.

a) The upgradation (SITC) of Access Control System & HVAC Control System shall be completed within a period of 8 weeks from the date of the receipt of the work order failing which 1 % penal charges per week will be levied and deducted from the bill Maximum up to 5%.

b) Penalty Clause for non-Compliance of CAMC: Quarterly AMC visit to be conducted within first 10 days of quarter otherwise 20% penalty will be deducted from entire bill of CAMC for particular

quarter. On call services should be attended within 48 hrs if fails then Bank may impose penalty of 1% of quarterly charges

If the vendor fails to provide the AMC service for either of the quarter then no payment will be released for that particular quarter and also a penalty of 20% of the quarterly CAMC value will be imposed from the consecutive quarter bill on the respective service provider.

If at any point of time, vendor is found to be supplying inferior material not confirming the prescribed technical specification and unsatisfactory services in terms of the provisions of the tender, Bank shall initiate steps for blacklisting of firm with information to all PSU Banks / RBI / IBA.

13. No Commitment to Accept Lowest or Any Tender:

The Bank shall be under no obligation to accept the lowest or any other offer received in response to this notice and shall be entitled to reject any or all offers without assigning any reasons whatsoever.

14. Terms & Conditions:

(a) Bank of Baroda's Right to Accept/Reject any/or all Application

BANK reserves the right to accept/reject any or all application at any time, without thereby incurring any liability to the affected applicants or any obligation to inform the affected applicants of the grounds for BANK's action.

(b) BANK's Right to Issue Clarifications, Addendums, Corrigendum etc.

BANK can at any time issue clarifications, addendums or corrigendum. The same will be published in the BANK's website. The applicants are requested to regularly visit the Bank's website.

(c) Purchase through GEMS Portal (Government E-Market)

Bank reserves the right to purchase the system through GeM portal of Govt. of India and provide the same to the Agency for installation and commissioning.

15. Criteria for Application Rejection/ Cancellation Of Registration:

- a) Any effort by an applicant to influence BANK's decisions on RFP evaluation process may result in rejection/cancellation of application/bid.
- b) Applications received by BANK after the last date and time prescribed for receipt of application or applications without signature of person (s) duly authorized on required pages of the application or applications without power of authorization and any other document consisting of adequate proof of the ability of the signatory to bind the applicant shall be rejected.
- c) Malpractice / attempt to influence / Manipulation of rates i.e., quoting lower rates as compared to the market / OEM rates, shall be viewed very seriously. If such a situation comes to the notice and/or there are reasons / circumstances for BANK to believe so, the concerned applicant will be called in to give justification of rates quoted by them to the committee. If they are not able to give a proper / satisfactory justification of their quoted rates, their bid will be cancelled. If the bidder is found, subsequent to successful evaluation, not complying with, any of the eligibility criteria.

- d) If continuous poor performance has been observed from an applicant.
- e) Any other grounds as decided by BANK management after due diligence.

16. Settlement of Disputes by Arbitration

- (i) The Bank and the vendor shall make every effort to resolve amicably, by direct informal negotiation between the respective project managers / head of the department of the Bank and the vendor, any disagreement or dispute arising between them under or in connection with the contract.
- (ii) If the Bank management and vendor project manager / director are unable to resolve the dispute after thirty days from the commencement of such informal negotiations, they shall immediately escalate the dispute to the senior authorized personnel designated by the vendor and in Bank respectively.
- (iii) If after thirty days from the commencement of such negotiations between the senior authorized personnel designated by the vendor and Bank, the Bank and the vendor have been unable to resolve contractual dispute amicably, either party may require that the dispute be referred for resolution through formal arbitration.
- (iv) All questions, disputes or differences arising under and out of, or in connection with the contract or carrying out of the work whether during the progress of the work or after the completion and whether before or after the determination, abandonment or breach of the contract shall be referred to arbitration by a sole Arbitrator acceptable to both parties OR the number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties shall appoint a third arbitrator shall act as the chairman of the proceedings. Arbitration will be carried out at Mumbai. The Arbitration and Conciliation Act 1996 or any statutory modification thereof shall apply to the arbitration proceedings
- (v) Judgment upon the award may be entered by any court having jurisdiction thereof or having jurisdiction over the relevant Party or its assets.

17. Guarantees:

All the components delivered to the Bank should be brand new and as per the latest **BIS, FCC, IEEE, UL, BTL, CE, etc. certifications and standards**. The supplier should also guarantee that all the software / components supplied by the supplier is licensed and legally obtained.

18. Availability of Spares:

Spares for the product offered should be available for at least 10 years.

19. Warranty:

- A. Equipment, materials and workmanship incorporated into the work shall be warranted for a period of one year from the time of system acceptance.
- B. The software's provided by vendor should have life time validity for software license and the license should be in the name of Bank.

- C. Within this period, upon notice by the Bank, any defects in the IBMS due to faulty materials, methods of installation or workmanship shall be promptly repaired or replaced by the Agency at no expense to the Bank.
- D. Maintenance of Computer Software Programs: The agency shall maintain all software during the standard first year warranty period. In addition, all factory or sub-vendor upgrades to software during the first year warranty period shall be added to the systems, when they become available, at no additional cost to the bank. In addition to first year standard warranty, software provided by agency shall update the software as and when required till the contract period. All SNC and BAS Servers are included in this coverage.
- E. Maintenance of IBMS Hardware: The IBMS System Contractor shall inspect, repair, replace, adjust, and calibrate, as required, the controllers, control devices and associated peripheral units during the warranty period. The Agency shall then furnish a report describing the status of the equipment, problem areas (if any) noticed during service work, and description of the corrective actions taken. The report shall clearly certify that all hardware is functioning correctly.
- F. Service Period: Calls for service by the bank shall be honored within 24 hours and are not to be considered as part of routine maintenance.
- G. Service Documentation: A copy of the service report associated with IBMS shall be provided to the bank.
- H. The Bank shall grant to the agency reasonable access to the IBMS during the warranty period. Remote access to the IBMS (for the purpose of diagnostics and troubleshooting, via the Internet, during the warranty period) will be allowed after due permission in advance by the Bank officials.

20. Maintenance Standard Expected During Warranty / CAMC Period

The supplier should ensure that in case the equipment cannot be repaired within the stipulated period, the supplier should provide a replacement till the system/equipment is returned duly repaired.

21. Records

As per requirement of the Bank, if request is made by the Bank to the vendor for providing details reports & data-logs related to IBMS system, the vendor would make arrangements to provide the details within a period of 1 week without any additional cost to bank.

22. Guidelines for the OEM

- (a) OEM should have online dedicated support center available during working hours and a fully equipped repair and maintenance office in India. Document details of same OEM to be submitted for the same for verification.
- (b) OEM should have valid BIS, IEEE, BTL, FCC, CE, etc. certifications.
- (c) Documents of Manufacturing license/ Excise/GST etc. Registration of the OEM factory need to be submitted for verification.
- (d) Product Certification copies to be attached as per the specifications.
- (e) Vendor will be responsible for non-genuine products. Audit for Banks whether actual material is provided or not needs to be done by OEM, as and when required by Bank, without any additional cost, as a service support to Bank.
- (f) OEM to have presence in India since Last 5 years

23. Acceptance Testing

Upon completion of the installation, the Agency/Contractor shall load all system software and start-up the system. The Agency shall perform all necessary calibration, testing and de-

bugging and perform all required operational checks to insure that the system is functioning in full accordance with these specifications.

The Agency shall perform tests to verify proper performance of components, routines and points. Repeat tests until proper performance results. This testing shall include a point-by-point log to validate 100% of the input and output points of the DDC system operation.

System Acceptance: Satisfactory completion is when the Agency has performed successfully all the required testing to show performance compliance with the requirements of the Contract Documents to the satisfaction of the Bank's Representative. System acceptance shall be contingent upon completion and review of all corrected deficiencies.

24. Operator Training

- a) During system commissioning and at such time acceptable performance of the Control System hardware and software has been established, the Agency shall provide on-site operator instruction to the Bank's operating personnel. Operator instruction shall be done during normal working hours and shall be performed by a competent representative familiar with the system hardware, software and accessories.
- b) The Agency shall provide 48 total hours of comprehensive training in multiple sessions for system orientation, product maintenance and troubleshooting, programming and engineering. These classes are to be spread out during the 1st year warranty period. The first class starting after final commissioning and the last class is to be in the last month of 1-year warranty period.
- c) Agency will reprogram all existing access cards in the upgraded software without any cost to the bank.

25. Opening of Offers

Technical Bid Offers will be opened at Baroda Sun Tower, Bank of Baroda, BKC, Mumbai, **at 16:00 Hrs. on 20.12.2021 by Committee of Executives / Officers.** The Bidders/ their representatives(s) may be present at the time of opening of the Technical Bid Offers. No separate intimation will be sent in this regard to the Service Provider for deputing their representatives. The Technical Bid offers will be opened at the time and date stipulated above irrespective of the number of bidders or their representatives present. Financial Bids will be opened of only those Service Provider who qualify technically.

26. Single Point of Contact & Direct Support

The bidder should provide the details of single point of contact and also Escalation matrix for support.

27. Set-off

1. Without prejudice to other rights and remedies available to BANK, BANK shall be entitled to set-off or adjust any amounts due to BANK under this project from the Service Provider against payments due and payable by Bank to the Service Provider for the services rendered.
2. The provisions of this Clause shall survive even after termination of the Agreement.

28. Covenants of the Successful Bidder

1. The successful bidder shall deploy and engage suitably experienced and competent personnel as may reasonably be required for the performance of the services. During the currency of project, the successful bidder shall not substitute the key staff identified for the services.
2. The successful bidder shall forthwith withdraw or bar any of its employee/s from the provision of the services if, in the opinion of BANK:
 - a) The quality of services rendered by the said employee is not in accordance with the quality specifications stipulated by BANK; or
 - b) The Selection of bidder or provision of the services by any particular employee is prejudicial to the interests of BANK.
3. All employees engaged by the successful bidder shall be in sole employment of the successful bidder and the successful bidder shall be solely responsible for their salaries, wages, statutory payments etc. That under no circumstances shall BANK be liable for any payment or claim or compensation (including but not limited to compensation on account of injury/death/termination) of any nature to the employees and personnel of the Service Provider.
4. The successful bidder:
 - a) Shall be responsible for all negotiations with personnel relating to salaries and benefits, and shall be responsible for assessments and monitoring of performance and for all disciplinary matters.
 - b) Shall not knowingly engage any person with a criminal record/conviction and shall bar any such person from participating directly or indirectly in the provision of services under this Agreement.
 - c) Shall at all times use all reasonable efforts to maintain discipline and good order amongst its personnel.
 - d) Shall not exercise any lien on any of the assets, documents, instruments or material belonging to BANK and in the custody of the Service Provider for any amount due or claimed to be due by the Service Provider from BANK.
 - e) Shall regularly provide updates to BANK with respect to the provision of the services and shall meet with the personnel designated by BANK to discuss and review its performance at such intervals as may be agreed between the Parties.
 - f) Shall be responsible for compliance of all laws, rules, regulations and ordinances applicable in respect of its employees, sub-contractors and agents (including but not limited to Minimum Wages Act, Provident Fund laws, Workmen's Compensation Act) and shall establish and maintain all proper records including, but not limited to, accounting records required by any law, code, practice or corporate policy applicable to it from time to time, including records and returns as applicable under labour legislations.
 - g) Shall not violate any proprietary and intellectual property rights of BANK or any third party, including without limitation, confidential relationships, patent, trade

secrets, copyright and any other proprietary rights in course of providing services hereunder.

- h) Shall ensure that the quality and standards of materials and services to be delivered or rendered hereunder, will be of the kind, quality and timeliness as designated by the BANK and communicated to the Service Provider from time to time.
- i) Shall not work in a manner which, in the reasonable opinion of BANK, may be detrimental to the interests of BANK and which may adversely affect the role, duties, functions and obligations of the successful bidder as contemplated by this RFP.
- j) Shall be liable to BANK for any and all losses of any nature whatsoever arisen directly or indirectly by negligence, dishonest, criminal or fraudulent act of any of the representatives and employees of the successful bidder while providing the services to the BANK.
- k) Shall itself perform the obligations under this RFP and shall not assign, transfer or sub-contract any of its rights and obligations under this Agreement except with prior written permission of BANK.

29. Indemnity:

1. The successful bidder shall, at its own expense, indemnify, defend and hold harmless BANK and its officers, directors, employees, representatives, agents respective directors, and assigns from and against any and all losses and liability (including but not limited to liabilities, judgments, damages, losses, claims, costs and expenses, including attorney's fees and expenses) that may be occurring due to, arising from or relating to:
 - a) Bank's authorized / bona fide use of the Deliverables and /or the Services provided by Service Provider under this Agreement; and/or
 - b) a breach, non-performance or inadequate performance by the successful bidder of any of the terms, conditions, covenants, representations, undertakings, obligations or warranties under this Agreement; or
 - c) the acts, errors, representations, misrepresentations, willful misconduct or negligence of the successful bidder, its employees in performance of its obligations under this Agreement; or
 - d) any deficiency in the services of the successful bidder or
 - e) Violation of any applicable laws by the successful bidder, its agents, employees, representatives etc.
 - f) any or all Deliverables or Services infringing any patent, trademarks, copyrights or such other Intellectual Property Rights; and/or
 - g) breach of confidentiality obligations of the successful bidder contained in this arrangement.; and/or
 - h) Negligence or gross misconduct attributable to the successful bidder or its employees or sub-contractors.

The successful bidder shall at its own cost and expenses defend or settle at all point of time any claim against the Bank that the Deliverables and Services delivered or provided under this Agreement infringe a patent, utility model, industrial design, copyright, trade secret, mask work or

trade mark in the country where the Deliverables and Services are used, sold or received, the Bank notifies the Service Provider in writing as soon as practicable when the Bank becomes aware of the claim; and cooperates with the Service Provider in the defense and settlement of the claims.

However, (i) the successful bidder has sole control of the defense and all related settlement negotiations (ii) the Bank provides the successful bidder with the assistance, information and authority reasonably necessary to perform the above and (iii) the Bank does not make any statements or comments or representations about the claim without the prior written consent of the successful bidder, except where the Bank is required by any authority/regulator to make a comment/statement/representation.

If use of deliverables is prevented by injunction or court order because of any such claim or deliverables is likely to become subject of any such claim then the successful bidder, after due inspection and testing and at no additional cost to the Bank, shall forthwith either 1) replace or modify the software / equipment with software / equipment which is functionally equivalent and without affecting the functionality in any manner so as to avoid the infringement; or 2) obtain a license for the Bank to continue the use of the software / equipment, as required by the Bank as per the terms and conditions of this Agreement and to meet the service levels; or 3) refund to the Bank the amount paid for the infringing software / equipment and bear the incremental costs of procuring a functionally equivalent software / equipment from a third party, provided the option under the sub clause (3) shall be exercised by the Bank in the event of the failure of the successful bidder to provide effective remedy under options (1) to (2) within a reasonable period which would not affect the normal functioning of the Bank.

2. In the event of successful bidder not fulfilling its obligations under this clause within the period specified in the notice issued by the Bank. Bank has the right to recover the amounts due to it under this provision from any amount payable to the vendor under this project.

3. The indemnities under this clause are in addition to and without prejudice to the indemnities given elsewhere in this agreement.

30. Termination:

1. Bank reserve the right to terminate this RFP at any stage without any advance notice to participants.

2. The Bank will be entitled to terminate any subsequent agreement, if Vendor breaches any of its obligations set forth in this RFP and any subsequent agreement and

- ▶ Such breach is not cured within thirty (30) Working Days after Bank gives written notice; or
- ▶ if such breach is not of the type that could be cured within thirty (30) Working Days, failure by Vendor to provide Bank, within thirty (30) Working Days, with a reasonable plan to cure such breach, which is acceptable to the Bank. Or
- ▶ A liquidator or a receiver is appointed over all or a substantial part of the undertaking, assets or revenues of the other Party and such appointment continues for a period of twenty-one (21) days;
- ▶ The other Party is subject of an effective resolution for its winding up other than a voluntary winding up for the purpose of reconstruction or amalgamation upon terms previously approved in writing by the other Party; or
- ▶ The other Party becomes the subject of a court order for its winding up.
- ▶ Any other reason not mentioned above.

3. The Bank, by written notice of default sent to the Vendor, may terminate this Contract in whole or in part without prejudice to any other remedy for breach of Contract if the Vendor fails to deliver any

or all of the Design, Goods, Works and Services, within the period(s) specified in the Contract or within any extension thereof granted by the Bank

4. Upon the termination or expiry of subsequent Agreement. The rights granted to Vendor shall immediately terminate.

5. In the event the Bank terminates the Contract in whole or in part, the Bank may, among other applicable remedies, procure Goods, Works or Services similar to those undelivered upon such terms and in such manner as it deems appropriate, and hold the Vendor liable to the Bank for any excess costs for such similar Goods, Works or Services. However, the Vendor shall continue to perform of the Contract to the extent not terminated.

31. Governing Laws:

The subsequent contract shall be governed and construed and enforced in accordance with the laws of India, and both Parties shall agree that in respect of any dispute arising upon, over or in respect of any of the terms of this Agreement, only the courts in Mumbai shall have exclusive jurisdiction to try and adjudicate such disputes to the exclusion of all other courts.

32. Subcontracting:

The Service provider shall not subcontract or permit anyone other than its personnel to perform any of the work, service or other performance required by it under this RFP. If found doing so, the contract will be terminated and the Agency may be blacklisted.

33. Audit:

- (a) BOB reserves the right to conduct an audit/ ongoing audit of the Service Provider.
- (b) The Service provider should allow the Reserve Bank of India (RBI) or persons authorized by it to access BOB documents, records or transaction or any other information given to, stored or processed by the service provider within a reasonable time failing which the service provider will be liable to pay any charges/ penalty levied by RBI.
- (c) The Service provider should allow the Reserve Bank of India (RBI) to conduct audits or inspection of its Books and account with regard to BOB documents by one or more RBI officials or employees or other persons duly authorized by RBI.

34. Publicity:

The Service Provider shall not use the name and/or trademark/logo of Bank of Baroda, its group companies or associates in any sales or marketing publication or advertisement, or in any other manner without prior written consent of Bank of Baroda.

35. Service Level Agreement and Non-Disclosure Agreement:

The successful bidder shall execute a) Service Level Agreement (SLA) and Non-Disclosure Agreement (NDA) (As provided by Bank), which contained all the services and terms and conditions of the services to be extended as detailed herein. The successful bidder shall execute the SLA and NDA and provide the same along with acceptance of Purchase Order.

All the expenses related to execution of the document such as the applicable stamp duty and registration charges if any shall be borne by the successful bidder.

I have read and accept, all terms/conditions/criteria other aspects mentioned in this document unconditionally.

Signature (Authorized signatory/director of the Service Provider)

Date.....



REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

(On Letter Head of Service Provider)

Ref No.

Date:

To
Chief Security Officer
Bank of Baroda
Baroda Sun Tower
Mumbai

Dear Sir,

With reference to the above tender notice, having examined and understood the instructions, terms and conditions forming part of the tender forms, we hereby enclose our offer for upgradation of HVAC Controls & Access Control System and Comprehensive Annual Maintenance Contract for Integrated Building Management System in Bank of Baroda, Baroda Sun Tower, Mumbai.

We confirm that our Annual Turnover for last three years is under: -

SN	Year	Turnover	Total Profit/Loss after tax
01	2018 -19		
02	2019-20		
03	2020-21		

In the event of getting a contract, I/We agree to honor the obligation with due diligence and efficiency as required by the Bank of Baroda.

We also confirm that, in the past we have not been issued with any dissatisfactory letter by any of the Regions /Branch of Bank of Baroda.

We confirm that we have not been disqualified / backlisted by any Govt. Dept. / RBI / PSU bank or any other organization for Supply, Installation, Testing and Commissioning and COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT for Integrated Building Management System.

We also agree that in case any poor performance is received from any of our clients our Bid will be rejected / disqualified.

We further confirm that the offer is in conformity with the terms and conditions as mentioned in the tender Documents.

We also confirm that the offer shall remain valid for 120 days from the last date for submission of the offer.

We understand that the Bank is not bound to accept the offer either in part or in full and that the Bank has the right to reject the offer in full or in part without assigning any reason whatsoever.



We certify that (Name of Service Provider) is not owned or controlled by any Director or serving Officer/Employees of Bank of Baroda or their relatives having the same meaning as assigned under section 6 of the Companies Act, 1956.

We agree to provide required performance bank guarantee at Baroda Sun Tower, Mumbai.

We also confirm that the Bank has not issued any disqualification letter to our agency in the past.

I/We agree to all the terms and conditions of the notice.

We enclose herewith a Demand Draft/Pay Order for and Rs.50,000.00/- (**Refundable**) favoring Bank of Baroda and payable at Baroda Sun Tower, Mumbai, towards Earnest Money Deposit, details of the same are as under:

Particulars	EMD of Rs.50,000.00/-
Demand Draft/Pay Order No.:	
Date of Demand Draft/Pay Order:	
Name of Issuing Bank:	

We also confirm that the above products meet the technical specifications/ features, as per the RFP.

Yours faithfully,

Authorized Signatories
(Name & Designation, seal of the firm)

E-Mail address

Contact No



Annexure –II

REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

FORMAT OF THE APPLICATION FORM

PART – I SUPPLIER'S PROFILE

Sr. NO	ITEM	PARTICULARS	Proof / details to be attached as (with proper Flags)
1	Name of the Company/ Firm/ Organization, Website, Email		Annexure A
2	Year of Establishment and Incorporation		Annexure B
3.	Status of the firm whether Company/Firm/proprietary etc		Annexure C
	a) Registered under the Companies Act, 1956. If so mention registration number and date.		
	b) Registered under the Societies Registration Act, 1860. If so mention registration number and date.		
	c) Registered under the Indian Trust Act, 1882. If so mention registration number and date.		
	d) Sole proprietorship firms whose proprietor is a resident in India as per the Income Tax Act, 1961. If so mention registration number and date.		
	e) Partnership firm registered in India. If so mention registration number and date.		
4	Nature of Business. Whether OEM /Service Provider/Manufacturer/ Authorized dealer/supplier etc		Annexure D
5	Address of Registered Office with PIN Code.		Annexure E
6	Correspondence Address		Annexure F



7	Address of Manufacturing Unit/R&D Site			Annexure G
8	Name of Directors/ Partners / Members etc	(a) (b)		Annexure H
9	a) Name of Contact Person b) Mobile No. c) EMAIL ID			Annexure I
10	Name of person(s) authorized to conduct business along with Mobile, Tele, Fax and Email details			Annexure J
11	a) Has your company/firm been ever blacklisted in past 5 years. If Yes, Give Details.			Annexure K
	b) If No, a certificate be submitted stating that the company/firm or its Bank or any sister concern have not been so blacklisted by any institution of the Central or State Govt, PSU/PSBs in the past three years on any grounds whatsoever.			Annexure L
12	Any subsidiary company (Write Yes / No). Give all details if yes			Annexure M
13	Furnish the names of three responsible persons who will be in a position to certify about the quality as well as past performance of your organization.			Annexure N
	Sr. No	NAME	ADDRESS	CONTACT NUMBER
	a)			
	b)			
	c)			
14	Latest BIS, FCC, BTL, IEEE and CE certifications			Annexure O
15.	Detail of Registered office in Mumbai (documentary proof with full address)			Annexure P



PART II- FINANCIAL, REGISTRATION FOR TAXATION AND OTHER STATUTORY REQUIREMENTS

Sr. NO	ITEM	PARTICULARS			Proof / details to be attached as (with proper Flags)
1	Whether registered for the following and having necessary certificates/ authority? If so , mention registration number and date. Enclose relevant certificate/ a) GST b) IGST c) TIN d) Others				Annexure Q
2.	Furnish copies of audited Balance Sheet and profit & loss account(audited) for the last 3 financial years	<u>TURN OVER</u> <u>Profit after Tax (INR Lacs)</u> Turn over PAT			Annexure R <u>Certificate of CA to be attached in Original</u>
3.	Name and address of Bankers along with IFS Code	Bank Name	Address	IFSC Code	Annexure S



REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

(Letter to the bank on the OEM's Letterhead in Original)

To
Chief Security Officer
Bank of Baroda
Baroda Sun Tower
Mumbai

Dear Sir,

Subject: Authorization for SITC and CAMC of Integrated Building Management System.

We _____ registered office at _____ having joint venture / authorized dealer etc. with _____, who are established and leading manufacturer of Integrated Building Management System, do hereby authorize M/s _____ having their registered office at _____ to submit quote, negotiate, supply, install and provide after sales support for our range of products quoted by them to meet the above mentioned tender.

We also confirm that the above products meet the Technical specifications/ features as per the RFP.

We as OEM are responsible that the Service Provider uses Genuine products. We will conduct Audit of the products being installed by the Service Provider, as and when required by the Bank without any extra cost, as a service support to the Bank.

We hereby confirm to extend our back to back technical support and meet warranty terms of 1 year the system. Also, we as an OEM assure that the quoted models are not end of life and necessary spares would be provided at cost to bidder for period of 10 years, as per OEM standards for this tender/project.

We will submit a certificate for the equipment and material supplied for Bank of Baroda to the agency.

Thanking you,

Yours faithfully,

Authorized Signatories
(Name & Designation, seal of the OEM)

Contact No.

E-Mail Address
Authorized Signatory _____



REFERENCE SITE DETAILS FROM -3- OTHER PUBLIC / PRIVATE SECTOR BANKS / PSU

Kindly provide details of -3- different organisations and also submit report of satisfactory service (High rise building of Public Sector Organization / Public / Private Sector where presently providing services)

Sr. No		
1.	Name of Principal Employer i.e name of Firm / Organisation where agency is providing SITC/AMC of IBMS System & Address	
	Contact Person	Name
		Designation
		Phone Numbers
		Mobile No
		e-mail id
	Satisfactory completion report	Attached / Not Attached
2.	Name of Principal Employer i.e name of Firm / Organisation where agency is providing SITC/AMC of IBMS System & Address	
	Contact Person	Name
		Designation
		Phone Numbers
		Mobile No
		e-mail id
	Satisfactory completion report	Attached / Not Attached
3.	Name of Principal Employer i.e name of Firm / Organisation where agency is providing SITC/AMC of IBMS System & Address	
	Contact Person	Name
		Designation
		Phone Numbers
		Mobile No
		e-mail id
	Satisfactory completion report	Attached / Not Attached

Date

Place



Annexure - V

REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

LIST OF TECHNICAL STAFF

I/we S/o Partners/Authorized person M/s..... applicant of for pre-qualification hereby declare that following person(s) is in my/our regular employment on the post and from the dates mentioned against them.

Sl. No.	Name and Address	Technical Qualification	Post held Regular	Date of Employment	Details of Experience
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					



NOTICE INVITING REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

LIST OF PROJECTS EXECUTED BY THE ORGANIZATION DURING THE LAST 5 YRS COSTING AS PER TERMS IN PRE-QUALIFICATION CLAUSE:

Sr No.	Name of Work / Project with address	Name & Postal address of the Bank. Specify if Govt. undertaking along with name add. & Contact nos. of 2 persons (Exec. Eng. or top officials of the organization)	Contract Amount (Rs.) with copy of work order & completion certificate from Project In charge.	Stipulated time of completion (Month)	Actual time of Completion (Months)	Any other relevant information if actual amount of Project if increased (Give reasons.)	Enclose client's certificate of satisfactory completion	Remarks
1	2	3	4	5	6	7	8	9

Notes:

- Information has to be filled up specifically in this format. Please do not write remark "Indicated in Brochure"
- For Certificates, the issuing authority shall not be less than an Executive in charge.



Annexure VII

NOTICE INVITING REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

LIST OF IMPORTANT PROJECTS IN HAND RELATED TO CAMC OF IBMS

Sr No.	Name of Work / Project with address	Name & Postal address of the Bank. Specify if Govt. undertaking along with name add. & Contact nos. of 2 persons (Exec. Eng. or top officials of the organization)	Contract Amount (Rs) with copy of work order with certificate of Project In charge	Stipulated time of completion (Months)	Present Status of the Project	Any other relevant information
1	2	3	4	5	6	7

Notes:

- Information has to be filled up specifically in this format. Please do not write remark "Indicated in Brochure"



NOTICE INVITING REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

TECHNICAL SPECIFICATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Building Management System (BMS), utilizing direct digital controllers (DDC).

1.2 SUMMARY

- A. The intent is to furnish all equipment, materials and labor necessary for a complete and operating Building Management System (BMS), utilizing Direct Digital Controllers as described herein. All controllers furnished in this section shall communicate on a system that is a non-proprietary, open protocol, open vendor Ethernet based building management system.
- B. The building services or IT Ethernet network shall be utilized as the principal communications network for the BMS. The BMS system connectivity, hardware and software architecture shall be based upon the six-layer hierarchical model:
1. Presentation Layer (GUI, HMI, HTML5)
 2. Application Layer (integration, analytics)
 3. Data Layer (management)
 4. Communications Layer (BACnet, Modbus, API)
 5. Network Layer (routing, switching, and security)
 6. Process Layer (equipment and systems)
- C. Building services data gathered in the Process Layer shall be encapsulated in open based communication protocols and directly and securely transported via the Network and Communications Layers to the Data Layer. Historical and real-time data shall be stored and managed in the Data Layer where it can be accessed by programs residing in the Application Layer. Application Layer programs shall be configured to manage and pass selected data upon schedule or by demand, to the Presentation Layer where it can be accessed by operators utilizing presentation tools that shall enable operators to:
1. Provide a comfortable environment for occupants.
 2. Monitor, override, report on and analyze system operating performance.
 3. Implement, monitor and review new strategies to improve system efficiencies.
 4. Work in an environment that supports dashboards, web pages and mobile devices.
 5. Have open access to all data available within each system.
 6. Convert system data into information for improved decision making and corrective actions.
 7. Select from multiple vendors to support or extend the system.
 8. Support multiple system integration and interoperability from the process layer to the application layer.
- D. Direct Digital Control (DDC) refers to the system controlling the HVAC (air-conditioning) equipment throughout the site. The DDC may also monitor other equipment directly connected. DDC encompasses supervisory, edge, plant and unitary controllers.
- E. Integrated Building Management System (IBMS) refers to the overarching integrated data management and presentation system of which the DDC forms one component. Other components of the BMS may or may not include access control, security, utility and services metering and energy management, lighting controls, lifts management etc.



- F. Contractor shall furnish all labor, materials, equipment, and service necessary for a complete and operating Building Management System (BMS), utilizing Direct Digital Controls as shown in attached Input / Output Summary and as described herein.
- G. All labor, material, equipment and software not specifically referred to herein or on the site, that is required to meet the functional intent of this specification, shall be provided without additional cost to the Client.
- H. Client shall be the named license holder of any and all software associated with any and all incremental work on the project(s). Client retains ownership of all data whether local or cloud based.
- I. No ongoing or recurring fees associated with hardware/software licensing, maintenance or other such fee. Yearly maintenance for firmware updates for 5 years to be considered and post that shall be optional but not mandatory.
- J. All materials and services shall be provided by any trained and authorized representative that meets manufacturers training requirements and not limited to exclusive agreements or territory restrictions.
- K. Hardware and software products that are exclusively available from a single vendor or restricted to vendors within a geographic region will not be considered.

1.3 SYSTEM DESCRIPTION

- A. The entire Building Management System (BMS) shall be comprised of a network of interoperable, stand-alone digital controllers communicating via BACnet IP. and/or IP communication protocols.
- B. The BMS shall be comprised of a network of interoperable, stand-alone digital controllers communicating on an open protocol communication network to a host computer within the facility (where specified) and communicating via the Internet to a host computer in a remote and/or central location. The BMS shall communicate to third party systems such as Chillers, DG's, Air-Handling Systems, Energy metering systems, Lighting Management System & other energy management systems, security systems and other building management related devices with open, interoperable communication capabilities as well as utilizing API to connect to financial and operating systems
- C. The BMS framework shall utilize open source and open communication automation products and services with built-in Internet connectivity and accessible via a broad range of manufacturer and integration partners. The Framework shall bring together the computerization of control applications under the umbrella of single integrated system architecture. The suite of component software applications shall support multi-vendor interoperability, resulting in lower automation and information infrastructure costs. The IP Controller(s) shall run a Virtual Machine (VM) platform and use a common set of tools for accessing and integrating multiple communication protocols.
- D. The BMS shall be integrated with IP Controller(s). The IP Controller(s) shall connect to the local or wide area network, depending on configuration. Access to the system, either locally in each building, or remotely from a central site or sites, shall be accomplished through standard Web browsers, via the Internet and/or local area network. Each IP Controller(s) shall communicate to open protocol systems/devices.
- E. Owner shall receive all Administrator level login and passwords for engineering toolset at first training session. The Owner shall have full licensing and full access rights for all network management, operating system server, engineering and programming software required for the ongoing maintenance and operation of the BMS.

1.4 SPECIFICATION NOMENCLATURE

- A. Acronyms used in this specification are as follows:
 - 1. Actuator: Control device that opens or closes valve or damper in response to control signal.
 - 2. AI: Analog Input.
 - 3. AO: Analog Output.
 - 4. Analog: Continuously variable state over stated range of values.
 - 5. BMS: Building Management System.
 - 6. DDC: Direct Digital Control.
 - 7. Digital: Binary or digital state.



8. DI: Digital Input.
9. DO: Digital Output.
10. FC: Fail Closed position of control device or actuator. Device moves to closed position on loss of control signal or energy source.
11. FO: Fail open (position of control device or actuator). Device moves to open position on loss of control signal or energy source.
12. GUI: Graphical User Interface.
13. HVAC: Heating, Ventilating and Air Conditioning.
14. LAN: Local Area Network.
15. Modulating: Movement of a control device through an entire range of values, proportional to an infinitely variable input value.
16. Motorized: Control device with actuator.
17. NC: Normally closed position of switch after control signal is removed or normally closed position of manually operated valves or dampers.
18. NO: Normally open position of switch after control signal is removed; or the open position of a controlled valve or damper after the control signal is removed; or the usual position of a manually operated valve.
19. OSS: Operating System Server, host for system graphics, alarms, trends, etc.
20. Operator: Same as actuator.
21. PC: Personal Computer.
22. FMCS: Facility Management and Control System
23. IBC: Interoperable BACnet Controller
24. GUI: Graphical User Interface
25. WBI: Web Browser Interface
26. PMI: Power Measurement Interface
27. OOT: Object Oriented Technology
28. PICS: Product Interoperability Compliance Statement
29. WAN: Wide Area Network.

1.5 SUBMITTALS

- A. Copies of shop drawings of the components and devices for the entire DDC system shall be submitted and shall consist of a complete list of equipment and materials, including manufacturers catalog data sheets and installation instructions for all controllers, valves, dampers, sensors, routers, etc. Shop drawings shall also contain complete wiring and schematic diagrams, software descriptions, calculations, and any other details required to demonstrate that the system has been coordinated and will properly function as a system. Terminal identification for all control wiring shall be shown on the shop drawings. A complete written Sequence of Operation shall also be included with the submittal package. BMS DDC contractors supplying products and systems, as part of their packages shall provide catalog data sheets, wiring diagrams and point lists to other contractors for proper coordination of work.
- B. Submittal shall also include a trunk cable schematic diagram depicting operator workstations, control panel locations and a description of the communication type, media and protocol. BMS DDC contractors shall provide these diagrams for their portions of work; the Systems Integrator shall be responsible for integrating those diagrams into the overall trunk cable schematic diagrams for the entire Wide Area Network (WAN) and BMS
- C. Submittal shall also include a complete point list of all points to be connected to the BMS
- D. Upon completion of the work, provide a complete set of 'as-built' drawings and application software on cloud-based, secure portal. Drawings shall be provided as AutoCAD™ compatible files or Microsoft Visio Professional. BMSDDC contractors shall provide as built for their portions of work. The BMS contractor shall be responsible for as-built pertaining to overall BMS architecture and network diagrams.
- E. As-built documentation including sequence of operations, datasheets, user guides, network diagrams and all other system documents shall be stored and accessible via BMS.
- F. Upon completion of the work, provide complete sets of 'as-built' drawings and other project-specific documentation in 3-ring hard-backed binders and on Flash media.
- G. Any deviations from these specifications or the work indicated on the drawings shall be clearly identified in the Submittals.

1.6 QUALITY ASSURANCE

- A. The Control System Contractor shall have a full service DDC office within 50 miles of the job site. This office shall be staffed with applications engineers, software engineers and field technicians. This office



shall maintain parts inventory and shall have all testing and diagnostic equipment necessary to support this work, as well as staff trained in the use of this equipment.

- B. Single Source Responsibility of Supplier: The Control System Contractor shall be responsible for the complete installation and proper operation of the control system. The Control System Contractor shall exclusively be in the regular and customary business of design, installation and service of computerized building management systems similar in size and complexity to the system specified. The Control System Contractor shall be the manufacturer of the primary DDC system components or shall have been the authorized representative for the primary DDC components manufacturer for at least 5 years.
- C. Equipment and Materials: Equipment and materials shall be cataloged products of manufacturers regularly engaged in the production and installation of HVAC control systems. Products shall be manufacturer's latest standard design and have been tested and proven in actual use.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Maintain integrity of shipping cartons for each piece of equipment and control device through shipping, storage and handling as required to prevent equipment damage. Store equipment and materials inside and protected from weather.

1.8 JOB CONDITIONS

- A. Cooperation with Other Trades: Coordinate the Work of this section with that of other sections to ensure that the Work will be carried out in an orderly fashion. It shall be this Contractor's responsibility to check the Contract Documents for possible conflicts between his Work and that of other crafts in equipment location, pipe, duct and conduit runs, electrical outlets and fixtures, air diffusers and structural and architectural features.
- B. IBMS contractors shall program the databases to comply with data exchange rules for the listed protocols including but not limited to all physical, virtual and calculated points and operating parameters for their respective system. All setpoints, schedules, overrides, alarms functions and any data value within the entire system architecture shall provide read/write access to the BMS based on the data exchange rule sets and the sub-system functionality.
- C. DDC Contractor shall coordinate with IT contractor in all network design. Contractor shall coordinate with IT contractor for provision and location of network switches and other devices for TCP/IP connectivity.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS

2.1 GENERAL

- A. The BMS shall be comprised of a network of interoperable, stand-alone IP digital controllers, a computer system, graphical user interface software / web browser, printers, network devices, valves, dampers, sensors, and other devices as specified herein.
- B. The installed system shall provide secure password access to all features, functions and data contained in the overall BMS.

2.2 OPEN, INTEROPERABLE, INTEGRATED ARCHITECTURE

- A. The intent of this specification is to provide a networked, stand-alone, distributed control system with the capability to integrate systems and sub-systems in one open, interoperable system via open communication protocols and APIs and provide data to the BMS for site control and monitoring.
- B. The BMS software platform will provide the graphical user interface for monitoring and operating the mechanical and selected other systems in the building. The platform will display values from the DDC system including:
 - 1. Values from sensors, actuators and digital outputs
 - 2. Alarms
 - 3. Setpoints, timers and tuning parameters
 - 4. Trends configured in the DDC controllers and the server
 - 5. Time and holiday schedules



- C. The supplied computer software shall employ object-oriented technology (OOT) for representation of all data and control devices within the system. In addition, adherence to industry standards, BACnet and to assure interoperability between all system components is required with the ability to support data read and write functionality. Physical connection of BACnet devices shall be via Ethernet (BACnet over Ethernet/IP) and/or RS-485 as specified. The Ethernet port shall connect to IP networks. It shall seamlessly integrate with a network controller to provide management functions such as site-wide control strategies, histories, schedules and alarming.
- D. The supplied system must incorporate the ability to access the GUI using standard Web browsers without requiring proprietary operator interface and configuration programs. A Relational Database Management System (RDMS) is required for all data storage. This data shall reside on a supplier-installed server for all database access or at the controller level. Systems requiring proprietary database and user interface programs shall not be acceptable.
- E. The RS485 port, when used in conjunction with the controller operating in IP mode, can read and control other Modbus devices, such as VFD's and DG sets. In the IP mode, the Controller concurrently, supports BACnet IP, Modbus and IP.
- F. OEM shall share API to integrate with any third-party software or the software developed by Client. OEM shall be liable to give warranty even if the API is shared.
- G. The Controller shall have IP Based Ethernet connectivity and support the following protocols at a minimum:
 - 1. Modbus Server and Client at TCP and RS485 level, BACnet, supporting both Client and Server at the TCP/IP and MSTP levels, Supports Modbus and BACnet concurrently
 - 2. All components and controllers supplied under this Division shall be non-polling peer-to-peer (P2P) or change of value (COV) communicating devices.
- H. DDC controllers shall have the following features at a minimum:
 - 1. Onboard data storage capability for redundancy and failover at the edge.
 - 2. Engineering and programming via one web-based tool that allows live programming.
 - 3. Ability to write and compile custom programs
 - 4. Onboard logging with graphical and tabular format, synchronized to the control's architecture
 - 5. Ability to store onboard a minimum of 100,000 history records
 - 6. Built-in Relational Database Management System (RDMS) such as SQL
 - 7. Built-in HTML5 Graphics
 - 8. Onboard VPN client and server at the supervisory level
 - 9. Ability to Email and/or text alarms
 - 10. No Browser Plugins are allowed, this includes proprietary plugins, Flash and JAVA
- I. Minimum Computer Configuration.
 - 1. Central Server: A dedicated BAS server with configuration that includes the following components as a minimum shall be provided:
 - a. Processor: Intel® Xeon CPU E3, 3.2GHz, 4 Core, x64 (or better), compatible with dual- and quad-core processors.
 - b. 8MB Cache memory, Intel HD Graphics, 1TB HDD, 16GB Ram Rack Mount with compatible Server base OS & loaded with lifetime license. The server shall have only Ethernet port for browsing and configuring BMS Software. Windows 64-bit version.
 - c. Network Support: Ethernet adapter (10/100 Mb with RJ-45 connector).
 - d. Connectivity: Full-time high-speed ISP connection recommended for remote site access (i.e., T1, ADSL, cable modem).
 - 2. Client Workstation: A dedicated BAS client workstation with configuration that includes the following components as a minimum shall be provided:
 - a. Processor: Intel® Core i5, 4 core, 3.2GHz, x64 (or better) with original Windows lifetime license
 - b. 1 TB HDD, 4GB RAM, 52X CD Writer Drive, along with keyboard, mouse etc.
 - c. 19"/32" color monitor flat screen LED display (Full HD), original Microsoft office latest with client recommended anti-virus, Microsoft SQL Server license and A4 laser printer (Alarms & reports).

2.3 DIRECT DIGITAL CONTROLLERS (DDC)

- A. The Controller should have the ability to have true open-source standards, using IP Based Ethernet connectivity. These include Modbus Server and Client at TCP and RS485 level, and also the BMS leading protocol BACnet, supporting both Client and Server at the TCP/IP and MSTP levels, the



controller should have MQTT protocol built in (without use on any Gateways), to communicate to Google IOT cloud and AWS IOT cloud.

- B. Controller should have an open-source development framework, should provide a complete software platform for developing, deploying, integrating, and managing pervasive device applications at the lowest level. The Framework shall distribute decision making control and manageability to any device and brings intelligence and connectivity to the network edge, and back.
- C. DDC controller should be an open system that allows products from various suppliers to be integrated into a unified system in order to provide flexibility for expansion, maintenance, and service of the system. DDC Controls, to embrace the conversion of IT, Infrastructure, internet, intranets, and to adopt the open-source implementation of an Ethernet based DDC Framework. It is required that Manufacturers embrace the open-source standard, do so, in a way that ensures that programs (Objects and Kits) can be deployed across all manufacturers platforms, without changes, and different engineering tools having to be deployed, to achieve the same result.

DDC Features available as standard at the IP embedded Controller level, shall incorporate the following:

TYPE I

- Ability to store onboard history records
- Built in SQL Lite Database and Management Tool
- Ethernet Client/Server Peer to Peer
- Built-in html5 Graphics, multi lingual display to Smartphone or browser
- Email alarms
- Web based, using Open Web Server and built-in SQL Lite Server, and, PHP5 and html5.
- No Browser Plugins are allowed, this includes proprietary plugins, Flash and JAVA
- Main processor shall be minimum 1 GHz.
- On board, minimum 8GB Flash, 512 MB RAM, and Micro SD Card (expandable up to 16GB)
- Supports Modbus, BACnet, MQTT concurrently
- Ability to read Modbus Meters and count pulses on every UI input at 20Hz.
- On board RTC. Optimization for Heating and Cooling
- Degree Days Calculations
- Ability to write and compile custom programs, and utilize in other manufacturers controls.
- Minimum of 20 point and Maximum 40 I/O controller
- VPN Server/Client

TYPE II

- Ability to store onboard history records
- Built in SQL Lite Database and Management Tool
- Ethernet Client/Server Peer to Peer
- Built-in html5 Graphics for Dashboards, multi lingual display to Smartphone or browser
- Email alarms
- Minimum processor shall be 500 MHz.
- Built in BACnet Server and Client, Onboard IP.
- Web based, using Open Web Server and built-in SQL Lite Server, and, PHP5 and html5.
- No Browser Plugins are allowed, this includes proprietary plugins, Flash and JAVA
- Supports BACnet, MQTT concurrently
- On board RTC. Optimization for Heating and Cooling
- Degree Days Calculations
- Ability to write and compile custom programs, and utilize in other manufacturers controls.
- Minimum of 8 points and Maximum 30 points I/O controller

A. Network Capability: The Local Area Network (LAN) shall be a 100 / 1000 Megabits/sec Ethernet network supporting BACnet, Modbus, Java, XML, HTTP, HTTPS, MQTT, FTP, FTPS, SSH, and SOAP at a minimum for maximum flexibility for integration of building data with enterprise information systems and providing support for multiple Supervisory Controller(s), field controllers, HMI, user workstations and, if specified, a local server.

B. Local area network minimum requirements:

1. Ethernet; IEEE standard 802.x



2. Ethernet support for IP, UDP, TCP/IP, ICMP, HTTP, FTP
 3. Cable; 100 Base-T, UTP-8 wire, category X
 4. Minimum throughput; 100 Mbps.
 5. DHCP
 6. TLS 1.2
- C. All controllers shall meet minimal security requirements:
1. IPv6 or greater
 2. SSL/TTL
 3. 802.1x or greater
 4. WPA enterprise (for wireless)
 5. Manufacturer shall certify that all processors are not affected by Meltdown, Spectre or Krack vulnerabilities.
- D. The minimum controller Environmental ratings:
1. Operating Temperature Ambient Rating: 0° to 65° C (32° to 150° F).
 2. Storage Temperature Ambient Rating: -20° to 85° C (-4° to 185° F).
 3. Relative Humidity: 10% to 90% non-condensing.
- E. All products of the BMS shall be provided with the following agency approvals. Verification that the approvals exist for all submitted products shall be provided with the submittal package. Systems or products not currently offering the following approvals are not acceptable.
- a. UL-916; Energy Management Systems
 - b. C-UL listed to Canadian Standards Association C22.2 No. 205-M1983 "signal Equipment".
 - c. CE
 - d. BTL
 - e. FCC, Part 15, Class A Computing Devices
 - f. RoHS Compliant

2.4 BAS SERVER & WEB BROWSER GUI - SYSTEM OVERVIEW

- A. The BAS Contractor shall provide system on web-based software architecture, designed around the open standards of web technology. The BAS server shall communicate using Ethernet and TCP. Server shall be accessed using a web browser over Owner intranet and remotely over the Internet.
- B. The intent of the architecture is to provide the operator(s) complete access to the BAS system via a web browser. The web browser Graphical User Interface (GUI) shall be browser and operating system agnostic, meaning it will support HTML5 enabled browsers without requiring proprietary operator interface and configuration programs or browser plug-ins. Microsoft, Firefox, and Chrome browsers (current released versions), and Windows as well as non-Windows operating systems.
- C. The BAS server software shall support at least the following server platforms (Windows 7, 8.1, Server 12). The BAS server software shall be developed and tested by the manufacturer of the system stand-alone controllers and network controllers/routers.
- D. The web browser GUI shall provide a completely interactive user interface and shall provide a HTML5 experience that supports the following features as a minimum:
1. Trending.
 2. Scheduling.
 3. Electrical demand limiting.
 4. Duty Cycling.
 5. Downloading Memory to field devices.
 6. Real time 'live' Graphic Programs.
 7. Tree Navigation.
 8. Parameter changes of properties.
 9. Set point adjustments.
 10. Alarm / event information.
 11. Configuration of operators.
 12. Execution of global commands.
 13. Add, delete, and modify graphics and displayed data.
- E. Software Components: All software shall be the most current version. All software components of the



BAS software shall be provided and installed as part of this project. BAS software components shall include:

1. Server Software, Database and Web Browser Graphical User Interface.
 2. 5 Year Software Maintenance license. Labor to implement not included.
 3. Embedded System Configuration Utilities for future modifications to the system and controllers.
 4. Embedded Graphical Programming Tools.
 5. Embedded Direct Digital Control software.
 6. Embedded Application Software.
- F. BAS Server Database: The BAS server software shall utilize a Java Database Connectivity (JDBC) compatible database such as: MS SQL 8.0, Oracle 8i or IBM DB2. BAS systems written to Non - Standard and/or Proprietary databases are NOT acceptable.
- G. Web Browser Based: The GUI shall be browser based and shall meet the following criteria:
1. Web Browser's for PC's: Only the current released browser (Explorer/Firefox/Chrome) will be required as the GUI and a valid connection to the server network. No installation of any custom software shall be required on the operator's GUI workstation/client. Connection shall be over an intranet or the Internet.
 2. Secure Socket Layers: Communication between the Web Browser GUI and BAS server shall offer encryption using 128-bit encryption technology within Secure Socket Layers (SSL). Communication protocol shall be Hyper-Text Transfer Protocol (HTTP).

2.5 WEB BROWSER GRAPHICAL USER INTERFACE

- A. The system shall be capable of supporting an unlimited number of clients using a standard Web browser such as Internet Explorer™ or Google Chrome. Systems requiring additional software (to enable a standard Web browser) to be resident on the client machine, or manufacture-specific browsers shall not be acceptable.
- B. The Web browser software shall run on any operating system and system configuration that is supported by the Web browser. Systems that require specific machine requirements in terms of processor speed, memory, etc., in order to allow the Web browser to function with the FMCS, shall not be acceptable.
- C. The Web browser shall provide the same view of the system, in terms of graphics, schedules, calendars, logs, etc., and provide the same interface methodology as is provided by the Graphical User Interface. Systems that require different views or that require different means of interacting with objects such as schedules, or logs, shall not be permitted.
- D. The Web browser client shall support at a minimum, the following functions:
1. User log-on identification and password shall be required. If unauthorized user attempts access, a blank web page shall be displayed. Security using Java authentication and encryption techniques to prevent unauthorized access shall be implemented.
 2. Graphical screens developed for the GUI shall be the same screens used for the Web browser client. Any animated graphical objects supported by the GUI shall be supported by the Web browser interface.
 3. HTML programming shall not be required to display system graphics or data on a Web page. HTML editing of the Web page shall be allowed if the user desires a specific look or format.
 4. Storage of the graphical screens shall be in the controller, without requiring any graphics to be stored on the client machine. Systems that require graphics storage on each client are not acceptable.
 5. Real-time values displayed on a Web page shall update automatically without requiring a manual "refresh" of the Web page.
 6. Users shall have administrator-defined access privileges. Depending on the access privileges assigned, the user shall be able to perform the following:
 - a. Modify common application objects, such as schedules, calendars, and set points in a graphical manner.
 - b. Schedule times shall be adjusted using a graphical slider, without requiring any keyboard entry from the operator.
 - c. Holidays shall be set by using a graphical calendar, without requiring any keyboard entry from the operator.
 - d. Commands to start and stop binary objects shall be done by right-clicking the selected object and selecting the appropriate command from the pop-up menu. No entry of text shall be required.
 - e. View logs and charts
 - f. View and acknowledge alarms
 - g. Setup and execute SQL queries on log and archive information



7. The system shall provide the capability to specify a user's (as determined by the log-on user identification) home page. Provide the ability to limit a specific user to just their defined home page. From the home page, links to other views, or pages in the system shall be possible, if allowed by the system administrator.
 8. Graphic screens on the Web Browser client shall support hypertext links to other locations on the Internet or on Intranet sites, by specifying the Uniform Resource Locator (URL) for the desired link.
- E. Color Graphics: The Web Browser GUI shall make extensive use of color in the graphic pane to communicate information related to set points and comfort. Animated. gifs or .jpg, vector scalable, active set point graphic controls shall be used to enhance usability. Graphics tools used to create Web Browser graphics shall be non-proprietary and conform to the following basic criteria:
1. Display Size: The GUI workstation software shall graphically display in a minimum of 1024 by 768 pixels 24-bit True Color.
 2. General Graphic: General area maps shall show locations of controlled buildings in relation to local landmarks.
 3. Color Floor Plans: Floor plan graphics shall show heating and cooling zones throughout the buildings in a range of colors, as selected by Owner. Provide a visual display of temperature relative to their respective set points. The colors shall be updated dynamically as a zone's actual comfort condition changes.
 4. Mechanical Components: Mechanical system graphics shall show the type of mechanical system components serving any zone through the use of a pictorial representation of components. Selected I/O points being controlled or monitored for each piece of equipment shall be displayed with the appropriate engineering units. Animation shall be used for rotation or moving mechanical components to enhance usability.
 5. Minimum System Color Graphics: Color graphics shall be selected and displayed via a web browser for the following:
 - a. Each piece of equipment monitored or controlled including each terminal unit.
 - b. Each building.
 - c. Each floor and zone controlled.
- F. Hierarchical Schedules: Utilizing the Navigation Tree displayed in the web browser GUI, an operator (with proper access credentials) shall be able to define a Normal, Holiday or Override schedule for an individual piece of equipment or room, or choose to apply a hierarchical schedule to the entire system, site or floor area. For example, Independence Day ' Holiday' for every level in the system would be created by clicking at the top of the geographic hierarchy defined in the Navigation Tree. No further operator intervention would be required and every control module in the system with would be automatically downloaded with the ' Independence Day' Holiday. All schedules that affect the system/area/equipment highlighted in the Navigation Tree shall be shown in a summary schedule table and graph.
1. Schedules: Schedules shall comply with the LonWorks and BACnet standards, (Schedule Object, Calendar Object, Weekly Schedule property and Exception Schedule property) and shall allow events to be scheduled based on:
 - a. Types of schedules shall be Normal, Holiday or Override.
 - b. A specific date.
 - c. A range of dates.
 - d. Any combination of Month of Year (1-12, any), Week of Month (1-5, last, any), Day of Week (M-Sun, Any).
 - e. Wildcard (example, allow combinations like second Tuesday of every month).
 2. Schedule Categories: The system shall allow operators to define and edit scheduling categories (different types of "things" to be scheduled; for example, lighting, HVAC occupancy, etc.). The categories shall include: name, description, icon (to display in the hierarchy tree when icon option is selected) and type of value to be scheduled.
 3. Schedule Groups: In addition to hierarchical scheduling, operators shall be able to define functional Schedule Groups, comprised of an arbitrary group of areas/rooms/equipment scattered throughout the facility and site. For example, the operator shall be able to define an ' individual tenant' group - who may occupy different areas within a building or buildings. Schedules applied to the ' tenant group' shall automatically be downloaded to control modules affecting spaces occupied by the ' tenant group'.
 4. Intelligent Scheduling: The control system shall be intelligent enough to automatically turn on any supporting equipment needed to control the environment in an occupied space. If the operator schedules an individual room in a VAV system for occupancy, for example, the control logic shall automatically turn on the VAV air handling unit, chiller, boiler and/or any other equipment required to maintain the specified comfort and environmental conditions within the



- room.
5. Partial Day Exceptions: Schedule events shall be able to accommodate a time range specified by the operator (ex: board meeting from 6 pm to 9 pm overrides Normal schedule for conference room).
 6. Schedule Summary Graph: The schedule summary graph shall clearly show Normal versus Holiday versus Override Schedules and the net operating schedule that results from all contributing schedules. Note: In case of priority conflict between schedules at the different geographic hierarchy, the schedule for the more detailed geographic level shall apply.
- G. Alarms: Alarms associated with a specific system, area, or equipment selected in the Navigation Tree, shall be displayed in the Action Pane by selecting an ' Alarms' view. Alarms, and reporting actions shall have the following capabilities:
1. Alarms View: Each Alarm shall display an Alarms Category (using a different icon for each alarm category), date/time of occurrence, current status, alarm report and a bold URL link to the associated graphic for the selected system, area or equipment. The URL link shall indicate the system location, address and other pertinent information. An operator shall easily be able to sort events, edit event templates and categories, acknowledge or force a return to normal in the Events View as specified in this section.
 2. Alarm Categories: The operator shall be able to create, edit or delete alarm categories such as HVAC, Maintenance, Fire, or Generator. An icon shall be associated with each alarm category, enabling the operator to easily sort through multiple events displayed.
 3. Alarm Templates: Alarm template shall define different types of alarms and their associated properties. As a minimum, properties shall include a reference name, verbose description, severity of alarm, acknowledgement requirements, and high/low limit and out of range information.
 4. Alarm Areas: Alarm Areas enable an operator to assign specific Alarm Categories to specific Alarm Reporting Actions. For example, it shall be possible for an operator to assign all HVAC Maintenance Alarm on the 1st floor of a building to email the technician responsible for maintenance. The Navigation Tree shall be used to setup Alarm Areas in the Graphic Pane.
 5. Alarm Time/Date Stamp: All events shall be generated at the DDC control module level and comprise the Time/Date Stamp using the standalone control module time and date.
 6. Alarm Configuration: Operators shall be able to define the type of Alarm generated per object. A ' network' view of the Navigation Tree shall expose all objects and their respective Alarm Configuration. Configuration shall include assignment of Alarm, type of Acknowledgement and notification for return to normal or fault status.
 7. Alarm Summary Counter: The view of Alarm in the Graphic Pane shall provide a numeric counter, indicating how many Alarms are active (in alarm), require acknowledgement and total number of Alarms in the BAS Server database.
 8. Alarm Auto-Deletion: Alarms that are acknowledged and closed shall be auto-deleted from the database and archived to a text file after an operator defined period.
 9. Alarm Reporting Actions: Alarm Reporting Actions specified shall be automatically launched (under certain conditions) after an Alarm is received by the BAS server software. Operators shall be able to easily define these Reporting Actions using the Navigation Tree and Graphic Pane through the web browser GUI. Reporting Actions shall be as follows:
 - a. Print: Alarm information shall be printed to the BAS server's PC or a networked printer.
 - b. Email: Email shall be sent via any POP3-compatible e-mail server (most Internet Service Providers use POP3). Email messages may be copied to several email accounts. Note: Email reporting action shall also be used to support alphanumeric paging services, where email servers support pagers.
 - c. File Write: The ASCII File write reporting action shall enable the operator to append operator defined alarm information to any alarm through a text file. The alarm information that is written to the file shall be completely definable by the operator. The operator may enter text or attach other data point information (such as AHU discharge temperature and fan condition upon a high room temperature alarm).
 - d. Write Property: The write property reporting action updates a property value in a hardware module.
 - e. SNMP: The Simple Network Management Protocol (SNMP) reporting action sends an SNMP trap to a network in response to receiving an alarm.
 - f. Run External Program: The Run External Program reporting action launches specified program in response to an event.
- H. Trends: As system is engineered, all points shall be enabled to trend. Trends shall both be displayed and user configurable through the Web Browser GUI. Trends shall comprise analog, digital or calculated points simultaneously. A trend log's properties shall be editable using the Navigation Tree



and Graphic Pane.

1. Viewing Trends: The operator shall have the ability to view trends by using the Navigation Tree and selecting a Trends button in the Graphic Pane. The system shall allow y- and x-axis maximum ranges to be specified and shall be able to simultaneously graphically display multiple trends per graph.
 2. Local Trends: Trend data shall be collected locally by Multi-Equipment/Single Equipment general-purpose controllers, and periodically uploaded to the BAS server if historical trending is enabled for the object. Trend data, including run time hours and start time date shall be retained in non-volatile module memory. Systems that rely on a gateway/router to run trends are NOT acceptable.
 3. Resolution. Sample intervals shall be as small as one second. Each trended point will have the ability to be trended at a different trend interval. When multiple points are selected for displays that have different trend intervals, the system will automatically scale the axis.
 4. Dynamic Update. Trends shall be able to dynamically update at operator-defined intervals.
 5. Zoom/Pan. It shall be possible to zoom-in on a particular section of a trend for more detailed examination and 'pan through' historical data by simply scrolling the mouse.
 6. Numeric Value Display. It shall be possible to pick any sample on a trend and have the numerical value displayed.
 7. Copy/Paste. The operator shall have the ability to pan through a historical trend and copy the data viewed to the clipboard using standard keystrokes (i.e., CTRL+C, CTRL+V).
- I. Security Access: Systems that Security access from the web browser GUI to BAS server shall require a Login Name and Strong Password. Access to different areas of the BAS system shall be defined in terms of Role-Based Access Control privileges as specified:
1. Roles: Roles shall reflect the actual roles of different types of operators. Each role shall comprise a set of 'easily understood English language' privileges. Roles shall be defined in terms of View, Edit and Function Privileges.
 - a. View Privileges shall comprise: Navigation, Network, and Configuration Trees, Operators, Roles and Privileges, Alarm/Event Template and Reporting Action.
 - b. Edit Privileges shall comprise: Set point, Tuning and Logic, Manual Override, and Point Assignment Parameters.
 - c. Function Privileges shall comprise: Alarm/Event Acknowledgement, Control Module Memory Download, Upload, Schedules, Schedule Groups, Manual Commands, Print and Alarm/Event Maintenance.
 2. Geographic Assignment of Roles: Roles shall be geographically assigned using a similar expandable/collapsible navigation tree. For example, it shall be possible to assign two HVAC Technicians with similar competencies (and the same operator defined HVAC Role) to different areas of the system.

2.6 GRAPHICAL PROGRAMMING

- A. The Graphical User Interface software (GUI) shall provide the ability to perform system programming and graphic display engineering as part of a complete software package. Access to the programming functions and features of the GUI shall be through password access as assigned by the system administrator represents.
- B. A library of control, application, and graphic objects shall be provided to enable the creation of all applications and user interface screens. Applications are to be created by selecting the desired control objects from the library, dragging or pasting them on the screen, and linking them together using a built-in graphical connection tool. Completed applications may be stored in the library for future use. Graphical User Interface screens shall be created in the same fashion. Data for the user displays is obtained by graphically linking the user display objects to the application objects to provide "real-time" data updates. Any real-time data value or object property may be connected to display its current value on a user display.
- C. Programming Methods:
1. Provide the capability to copy objects from the supplied libraries, or from a user-defined library to the user's application. Objects shall be linked by a graphical linking scheme by dragging a link from one object to another. Object links will support one-to-one, many-to-one, or one-to-many relationships. Linked objects shall maintain their connections to other objects regardless of where they are positioned on the page and shall show link identification for links to objects on other pages for easy identification. Links will vary in color depending on the type of link; i.e.,



- internal, external, hardware, etc.
2. Configuration of each object will be done through the object's property sheet using fill-in the blank fields, list boxes, and selection buttons. Use of custom programming, scripting language, or a manufacturer-specific procedural language for configuration will not be accepted.
 3. The software shall provide the ability to view the logic in a monitor mode. When on-line, the monitor mode shall provide the ability to view the logic in real time for easy diagnosis of the logic execution. When off-line (debug), the monitor mode shall allow the user to set values to inputs and monitor the logic for diagnosing execution before it is applied to the system.
 4. All programming shall be done in real-time. Systems requiring the uploading, editing, and downloading of database objects shall not be allowed.
 5. The system shall support object duplication within a customer's database. An application, once configured, can be copied and pasted for easy re-use and duplication. All links, other than to the hardware, shall be maintained during duplication.

2.7 MODBUS INTEGRATION

- A. The DDC controller shall support the integration of device data from Modbus RTU, Ascii, or TCP control system devices. The connection to the Modbus system shall be via an RS-232, RS485, or Ethernet IP as required by the device.
- B. Provide the required objects in the library, included with the Graphical User Interface programming software, to support the integration of the Modbus system data into the BMS. Objects provided shall include at a minimum:
 - 1) Read/Write Modbus AI Registers
 - 2) Read/Write Modbus AO Register
 - 3) Read/Write Modbus BI Registers
 - 4) Read/Write Modbus BO Registers
- C. All scheduling, alarming, logging and global supervisory control functions, of the Modbus system devices, shall be performed by the Network Area Controller.
- D. The BMS supplier shall provide a Modbus system communications driver. The equipment system vendor that provided the equipment utilizing Modbus shall provide documentation of the system's Modbus interface and shall provide factory support at no charge during system commissioning.

PART 3 GENERAL

3.1 SECTION INCLUDES

- A. Access Control System (ACS), utilizing IP based Door Access Controllers.

3.2 SUMMARY

- A. The intent is to furnish all equipment, materials and labor necessary for a complete and operating Access Control System (ACS), utilizing IP based Controllers as described herein. All controllers furnished in this section shall communicate on a system that is a non-proprietary, open protocol, open vendor Ethernet based access control system.
- B. The Access Control System comprises of a Networkable Door Access Controller (DAC), Entry & Exit Card Readers, smart Cards & Software.
- C. Major equipments shall be from the same manufacturer. All equipments shall be tested prior to installation. The manufacturer shall have presence in the country to provide the required technical support for the installer and the end user.
- D. The Controller shall have onboard IP address to generate, diagnose, report from any PC on the LAN/WAN network. The enterprise level server software to be installed with one Client software. The ACS system software should have Time attendance integration. All doors to enable global anti pass back. The Controller shall have battery backup to support the entire system up to 6 hrs.
- E. The System is proposed with backup power from UPS and also independent power backup through maintenance-free storage batteries capable of 6 hrs. of normal operation.



3.3 SYSTEM DESCRIPTION

- A. The Access Control System supplier shall provide new, latest technology, high speed, networkable, interoperable, user friendly fully operational, Enterprise level Access Control & Time Attendance System.
- B. The security access control system shall provide the following card access control operational objectives:
- Controlled entry, via access card readers, of only authorized personnel to secured areas based on cardholder information entered and stored in the system database.
 - The access request response time from card presentation, database verification, to electric lock/unlock shall be no more than one second in normal operating mode on a fully loaded system.
 - All access requests, both authorized and denied, shall be sent to the host for storage and annunciation, as required, with the cardholder number, name, and access point/area where access was attempted or gained.
 - High security area Doors to have alarm if the door is kept open for long (alarm can be adjusted for door openings to duration of 0-40 seconds)
 - The software package shall provide for global and local anti-pass back, and also provide a facility for soft anti-pass back (i.e. allowing entry following an anti-passback violation but still report and log the violation.) The system shall also be capable of providing timed anti-passback at individual readers, and the time shall be capable of being selected by the operator. Anti-passback shall operate on a system wide basis across multiple DACs and across multiple ports on a single server.
 - The system shall provide for the monitoring of the reader-controlled door position in order to detect and report door-forced-open and door-held-open alarm conditions. Door-held-open condition shall be based on a user-adjustable time period. The act of opening the door shall initiate the door timer, and also cause the immediate reset of the door lock.
 - Each cardholder shall be specified with access authority to a combination of security areas and of security areas, each security area comprised of one or more card reader-controlled door. Each individual security area or group of security areas designated as authorized to an individual cardholder shall include a time zone assignment for that specific area. Each cardholder may be specified as authorized access to any, or all, or any combination of the security areas.
 - The system shall provide the capability to unlock the door and/or mask (shunt) the door alarm, via a request-to-exit door motion sensor device or exit push-button. The capability shall be software programmable to allow selectable exit reporting.
 - The system shall provide for a completely downloaded and distributed database such that access control decisions are made locally at the access controller and, in the event of the failure of the host computer or loss of communications to the host computer, the access control system shall continue to operate using full database information for all cardholders including security areas authorizations, time zones, expiration dates of cards, holidays, etc. At no time after a card has been entered into the database of the file server and validated, shall the system fail to respond to an access request by a valid cardholder. In the event that the database in the access control field panel is being downloaded or the database is corrupted or voided for any reason, the Access Control-Attendance Management (AC-AM) server shall make the access transaction decisions based on the current information held in the AC-AM server. (Restricted subsets of access control privileges and time zone facilities in the distributed database will not be accepted).
 - Attendance Management System should be fully featured and highly flexible web-based Time & Attendance software for managing the collection, processing and management of data relating to employee attendance at the place of work.
 - It should seamlessly integrate with Access Control System software & Terminals to collect and validate clock-in / clock out and present a set of powerful reports.
 - The software shall be capable of providing for the recall of system historical transactions with a



minimum of half a million transactions recallable by operator command from the main event transaction file on the file server hard disk. Additional events may be recalled directly from an archived history log file on a removable hard disk cartridge.

- Data searching parameters shall be provided as a menu driven feature of the AC-AM system software. The search capability shall include, but is not limited to the following:
 - a. Card activity.
 - b. Cardholder, by card number or name.
 - c. Card readers.
 - d. Security areas
 - e. Alarm points
 - f. Alarm categories
 - g. Date and time periods.

C. The basic components of the system shall include:

- Access Control-Attendance Management (referred as AC-AM) file server system complete with CPU, keyboard, color monitor, all required database management, configuration software, database storage system software and hardware, as well as complete access control and Attendance Management software package as standard. AC-AM file server shall communicate with AC-AM client workstations over an industry standard Ethernet local area network (LAN). Location of AC-AM file server shall be as specified in contract documents.
- AC-AM client workstations shall be fully functional, and provide all of the features available at the AC-AM server. The workstations shall be capable of providing full color graphic representation of the alarm, event and control facilities (see item 3 below), and shall be capable of configuring, and monitoring the Door Access Controllers (DAC) s. The AC-AM client workstation shall incorporate a color monitor and keyboard for data entry, and shall also support printers for operator requested reports and alarm/event reporting. The operator interface shall be completely menu-driven through easy-to-understand menus, text and prompts. AC-AM client workstations shall communicate with the AC-AM file server over an industry standard Ethernet LAN. Quantity and location of operator terminals shall be as specified in contract documents.
- Door Access Controllers (DACs) shall be capable of utilizing both central processing and true distributed processing technology. Local processing shall be based on the full local storage of cardholders, access groups, time zones, input and output information in controller RAM. In the event that database information has not been downloaded, is corrupted or is insufficient to make necessary local transaction decisions, the DAC shall access the AC-AM server directly. The AC-AM server shall take over the functions of making access decisions, controlling doors, monitoring alarms, activating relays and performing the functions of remote control and time activated actions. This shall continue until such time as the full database of the DAC has been correctly downloaded from the AC-AM server. This function shall ensure that during database downloads to the DAC; operation of the field panel would be the same as though a proper download had been completed. In addition, it ensures that in the event of a corruption of the DAC database, all actions which would have been carried out by the DAC in response to transaction requests and alarm or data inputs will still be performed under the control of the AC-AM server.

D. **System Hardware:**

A. Server Configuration:

- The file server shall utilize an Intel Xeon processor operating at a minimum of 3.0 GHz supporting true multi-user, multi-tasking and multi-threaded capabilities with a minimum of 8 GB RAM, 1 TB Hard disk. The file server shall be capable of supporting at least two printers.
- The file server system shall utilize the Microsoft Windows 2019 Server operating system together with Microsoft SQL standard Server. The file server shall support the Microsoft Active Directory system which shall be an integral function of the operating software.
- The file server shall be supplied with an Ethernet network interface card that supports 10/100 topology. The system shall be capable of running and supporting TCP/IP network protocol. The system shall be optionally capable of supporting a true fully hot redundant file server configuration.
- The system shall be capable of supporting at least 10 AC-AM client workstations, and have the



capability of being expanded to support an unlimited number.

- The system shall be provided with a fixed hard disk drive with a capacity of at least 1 TB and shall be provided with a removable hard disk drive, directly accessible from the on-line system, with a capacity of at least 500 GB for archiving, and archive reporting purposes. Event transaction data copied and archived to a removable hard disk cartridge shall be capable of being accessed directly from the on-line operational system application programs and menus.

B. Client Workstation Configuration:

- The client workstation shall be provided with 19-inch flat screen LED display (Full HD), standard 101-key keyboard and two-button mouse. The computer system shall be constructed from commercially available computer hardware. The client workstation shall utilize a minimum Intel i5 processor supporting true multi-user, multi-tasking capabilities with a minimum of 8 GB of RAM. The system shall be capable of supporting up to two serial I/O ports (expandable to four or more). Each client workstation shall be capable of supporting at least one printer.
- The client workstation shall utilize Microsoft Windows 10 Professional operating system or the latest available by Microsoft at the time of installation operating system.
- The file server shall be supplied with an Ethernet network interface card that supports 10/100
- Each client workstation shall be capable of supporting color graphics display facilities. The workstation shall be equipped with the standard AC-AM Client software package, and shall be provided with USB connection to support the local Card Management system.

C. IP Door Access Controller:

The controllers shall communicate with a host system by using industry standard TCP/IP protocol, over 10/100 Mbps Ethernet, Internet, dial-up modem, or wireless modem. The features shall be as below:

- The Access controller shall have a CPU with 32 Bit networkable intelligent Micro controller running at minimum 200 MHz.
- The Access controller shall be able to control up to 2 doors/4 readers. It should have interface for 2 entry and 2 exit readers.
- A reader interface module that supports four Wiegand or Clock and Data card / PIN readers.
- An input monitor interface that supports minimum 12 analog inputs. An output control interface that supports minimum 6 general purpose output relay.
- A networked controller / reader interface that supports two Wiegand or Clock and Data card / PIN readers and provides a TCP/IP connection to a Host system.
- TCP/IP connections shall be used for high-speed connection to host and connectivity to existing and new Ethernet network cabling.
- It shall have ability to migrate to an alternative manufacturer's host access control software application by remote reconfiguration or firmware upgrade and without intervention from the original controller.
- It shall provide full distributed processing of all access control functions. The unit shall provide fully functional off-line operation when not actively communicating with the host access control software application; performing all access decisions and event logging. Upon connection with the host access control software application, the networked door controller or networked controller/reader shall upload all buffered off-line transactions (minimum of 99,999) to the host software.
- It shall provide diagnostics and configuration operations through connection to a local laptop computer. Installation web pages shall be interfaced using HTTPS and provide abilities to set product security including encryption keys.
- Compatibility with Windows 10 professional and any other Host System supporting TCP/IP networked interface, TCP/IP (using applicable IEEE standards), HID Wiegand Standard or Long Formats or C&D Output Readers, Category 6 cable, using RJ-45 connectors. & Host systems with HID web browser API.



- It shall meet European CE Mark standards for electrical safety and RF emissions. It shall require a customer-supplied 12VDC regulated Power Supply, with Battery Backup and Input Surge protection, and AC Failure and Battery Low contact outputs
- It shall be capable of operation from 0° to 50° C (32° to 120° F), 0-95% RH, Non-condensing.
- It shall be capable of installation in an indoor environment, or otherwise protected in a NEMA-4 Rated Enclosure.

E. System Software:

- The software system design shall be object oriented and shall be a native 32-bit application running under the Windows 2019 Server operating system. It shall be an Open Architecture design supporting industry standard databases, networks, matrix switchers and other peripheral equipment.
- All client workstations and the server(s) shall have full system functionality and shall not be segregated in any way by function, except as defined by the user authentications of sign on and password.
- The system shall have a simple, easy to use graphical user interface which is browser based, and all functions shall be accessible by use of either mouse or keyboard. Help text shall be provided for each screen function and shall be sufficiently interactive that a user may access page help directly and be provided with explicit information relevant to the particular screen being displayed.
- The system shall have a distributed architecture; however, the central server shall have the capability to make transaction decisions for access requests, alarm handling and output control. The software shall be provided with a high-speed real-time functionality, which allows the server to take over the transaction handling function of DACs which are being downloaded, or whose database is incomplete or corrupted, and thus maintain the fully functional access and security response of the DACs under these circumstances. This same real-time functionality shall provide for linking of inputs and outputs globally across all DACs within the system on a single AC-AM server, and also provide the same global anti-pass back linking of card readers across all the DACs connected to a single server.
- Web based multi-client enterprise level application for time and attendance, access control, visitor management, anti pass back, report in inbox, unlimited user log in, event notification pop ups, public and critical area control, visitor mapping with employees and process driven approval of visitors on both multi-client or virtual server.

Managing employees/users/privileges via Web-Interface:

- Seamless active directory integration for single sign on, automatic import of employee details and automatic deactivation of access rights on employee profile deactivation in active directory server. Adding employee photograph along with provision to add at least three more pictures corresponding to an employee such as scanned copies of national ID card, passport, police verification etc. Defining card start and expiry date. Activation/ Deactivation of the card. Setting pass-back exemption. Setting extended access. Assigning access privileges to employees in bulk. Assigning current and future shift roster to an employee. Assigning shift roster to employees in bulk. Security Administrator (Privilege to configure and monitor access control hardware). Advanced search form to search users on fixed and mixed search criteria such as: name, department, title, access group, time attendance rule, card status etc.

Leave or absence regularization via Web-Interface

- Regularization of employee working hours (used in cases where employee is unable to mark attendance through the system) Defining absence as Leave, Sick Leave, Casual Leave, Other. (Defining any custom reason for the absence).

Access groups via Web-Interface

- Defining and managing any number of Time Codes, Holidays (yearly repeatable and yearly non-repeatable), Holiday Groups, Time Zones (Map time codes to each day of the week and the holiday groups), Door/Reader Groups, Access Groups (map time zone to reader group).



Shifts/Shift rosters via Web-interface

- Defining multiple Shifts. OT (Overtime) management. Defining shift specific overtime. Defining and Managing Shift Rosters defining shift for each day of the week and holiday groups. Defining week-offs in the shift rosters (any possible week-off rule can be defined e.g., alternate Saturday, third Saturday etc.)

Reports via Web-interface

- Selection and export of following employee(s) information to an excel sheet. Standard employee information fields, Card number, Card issue date/expiry date, Assigned Access Groups, Assigned Shift roster, privilege level, Record created by, Record creation date. Exporting report in various standard formats: Acrobat format, MS excel).

Real time event Monitoring & Control

- Viewing online status of each controller, viewing other pertinent controller information, viewing door status, Door held violation status, Remote closing of door held alarm, Remote closing of door forced alarm, changing lock status, Viewing Input to Output mappings. Viewing system events in the real time.

Configuration of controllers/readers

- All smart card technologies such as iClass-any format, HIDprox, Mifare, Desfire etc. All standard 255 facility codes corresponding to HID prox and iClass. support for various card technologies simultaneously. This feature would enable the users to easily migrate from one card technology to another or different users to possess different smart cards. Automatic detection of controller(s) on the network. Mapping of general-purpose controller inputs to the controller output (required for fire integration, emergency exit integration). Configuration option to open all doors on an event on a specific input(s) (required for fire panel integration). Search and configuration of controllers and interfaces. Configuring anti-pass-back for a reader. Mapping any interface input to any interface output. In other words, any sensor can be mapped to any actuator device support for special access control hardware such as Turnstiles and boom-barriers.

Real Anti-pass-back & Global Anti Pass-back

- Configuration of readers and group of readers to implement real time anti-pass back and global anti-passback functionality Defining Logical Access Zones.

F. SUBMITTALS:

- The Access Control system contractor, upon completion of the commissioning activity, shall hand over the system to the customer.
- At the time of hand over, the contractor shall provide the customer with the following documentation:
 1. Copy of detailed report
 2. Component and equipment list
 3. Product description sheets
 4. System design drawing(s)
 6. System schematic diagram(s)
 7. System operating manuals
 8. Software Operation Manual
 9. Database Management Operation Manual
 10. Certificate from consultant about verification of installation as per RFP terms & Conditions.



G. Handover:

- Prior to final acceptance, the installing contractor shall provide complete operation and maintenance instruction manuals to the owner. All aspects of system operation and maintenance shall be detailed, including wiring diagrams of all circuits, a written description of the system design, sequence of operation and drawing(s), illustrating control logic and equipment used in the system. Checklists and procedures for emergency situations, maintenance operations and procedures shall be included in the manual.

H. Training:

- The contractor shall provide the customer with details of the training required by personnel to operate and maintain the AC & AM System.
The Contractor and the customer shall jointly agree the number of staff to attend the training courses.

APPROVED MAKES FOR ACS

Sr.No.	Details of Materials / Equipment	Manufacturer's Name
1.	Standalone IP Controllers	Rosslare / Spectra / Suprema or equivalent make
2.	Web Based ACS Software with unlimited user license	Rosslare / Spectra / Suprema / EINS / IDCUBE or equivalent make
3.	Smart Card Readers	HID or equivalent make
4.	Fingerprint Biometric	Morpho or equivalent make
5.	Electromagnetic Lock	ASSA ABLOY / ALGATEC / EBELCO or equivalent make
6.	Electric Door strike	DORMA / ASSA ABLOY / INGERSOLLRAND or equivalent make
7.	Magnetic Contacts	DORMA / ASSA ABLOY / INGERSOLLRAND or equivalent make
8.	Piezo sounders	DORMA / ASSA ABLOY / INGERSOLLRAND or equivalent make
9.	Panic Bars	DORMA / ASSA ABLOY / INGERSOLLRAND or equivalent make
10.	Emergency Release Switch	DORMA / MAG / ALGATEC or equivalent make
11.	Turnstiles	PARTH SYSTEMS or equivalent make
12.	Flap barriers	PARTH SYSTEMS or equivalent make
20.	Server	HP / DELL / LENOVO or equivalent make
21.	Personal Computer	HP / DELL / LENOVO / BCDVIDEO or equivalent make
22.	Copper Flexible Cable	Finolex / Belden / RR / Polycab or equivalent make
23.	LAN cables for BMS Network	CommScope / D-Link / Panduit or equivalent make
24.	PVC Conduits	BEC / AKG or equivalent make

APPROVED MAKES FOR BMS

Sr. No.	Details of Materials / Equipment	Manufacturer's Name
1.	Standalone DDCs	EasyIO / ALC / Honeywell-Trend or equivalent make
2.	Web Based BMS Software with unlimited user license	EasyIO / ALC / Trend or equivalent make
3.	Immersion Temperature Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
4.	Duct Temperature Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
5.	Outside Air Temperature Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
6.	Room Temperature Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make



7.	Duct Humidity Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
8.	Room Humidity Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
9.	Flow Meter	E&H/Shenitec/Emmerson-Rose Mount/Fobs Marshal or equivalent make
10.	Duct Static Pressure Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
11.	Water Level Switch	Honeywell / Filpro / Dwyer or equivalent make
12.	DP Switch – Water	Honeywell / Greystone / Siemens / Dwyer or equivalent make
13.	DP Switch – Air	Honeywell / Greystone / Siemens / Dwyer or equivalent make
14.	CO2 Sensor	Honeywell / Greystone / Siemens / Dwyer or equivalent make
15.	Water Flow Switch	Honeywell / Greystone / Siemens / Dwyer or equivalent make
16.	Pressure Transmitter – Water	Honeywell / Greystone / Siemens / Dwyer or equivalent make
17.	Current Relay	Veris / Seto / Mamac/Omron / ABB / Equivalent or equivalent make
18.	Voltage / Current / Power Factor Transducer	SETO / ABB / L&T / Enercon / SETCO or equivalent make
19.	Flame Proof Level Switch / Level Transmitter	Veksler / Filpro / Sontay / Techtrol or equivalent make
20.	PH Sensor / TDS Sensor	Honeywell / Hach / Greisinger or equivalent make
21.	Personal Computer	HP / DELL / LENOVO / BCDVIDEO or equivalent make
22.	Copper Conductor Control Cable	Finolex / Delton / RR / Polycab or equivalent make
23.	Communication Cables / Signal Cable	Finolex / Delton / RR / Polycab or equivalent make
24.	LAN cables for BMS Network	CommScope / D-Link / Panduit or equivalent make
25.	PVC Conduits	BEC / AKG or equivalent make

Note: The final approval of items mentioned shall rest with architect, client and Bank from any of the list mentioned above.

Note: All materials should be purchased from Manufacturers/ authorized dealer and Bank may directly instruct the quality control team of the companies to visit the site to examine the genuineness of materials.

WITNESS

Seal:

Place:

Name & Signature of the Vendor



FINANCIAL BID

(RFP Reference: SEC/BST/IBMS/113/896 dated: 26.11.2021)



NOTICE INVITING REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

FINANCIAL BID

PART – A: Upgradation of HVAC Controller (BMS System)

Sr. No.	Description	Qty	Unit	Rate/Unit	IGST / SGST (Percentage)	Amount (Excluding GST)	Remarks
A	Building Management System						
I	Supply, Installation, Testing, Commissioning & Handing over the Building Management System (BMS) and allied systems as per specifications as below.						
1	BMS Server: Supply, installation, testing & commissioning of Central Server with the minimum following specifications: Intel® Xeon® processor E3, 3.2GHz, 4 Core, 8MB Cache memory, Intel HD Graphics, 1TB HDD, 16GB Ram Rack Mount with compatible Server base OS & loaded with lifetime license. The server shall have only Ethernet port for browsing and configuring BMS Software.	1	Nos.				
2	BMS Workstation: Supply, installation, testing & commissioning of Workstation with minimum following specification : Intel® Core i5, 4 core, 3.2GHz, 1 TB HDD, 4GB RAM, 52X CD Writer Drive, along with keyboard, mouse etc, with Original Windows lifetime license complete as per the	1	Nos.				



	detail technical specification, with 32" color monitor flat screen LED display (Full HD), original Microsoft office latest with client recommended anti-virus, Microsoft SQL Server license and A4 laser printer (Alarms & reports).					
3	<p>BMS Software: Supply Installation, Testing & Commissioning of Supervisory Software with the below mentioned capabilities:</p> <ol style="list-style-type: none">1. Web Based Graphical interface meeting the requirements in given I/O summary and technical specifications including configuration and facility to create/provide the graphics mapping for all I/O summary points, graphics, navigation between pages, display of logs.2. Supports unlimited users over internet/intranet.3. Optional enterprise level data exporting using SQL, MYSQL, CSV, Oracle, DB2 database.4. Audit Trail for all system function such as database backup, scheduling, energy management routines.5. Alarm Processing and routing including email alarm.6. Intergration with 3rd party system via ethernet based driver such as BACNET/IP, OPC, MODBUS, MQTT, SNMP.7. Shall be having built in tools for Graphics,	1	Nos.			



	Data management , controller configurations, user level managements, system configurations , alarm configurations etc. 8.Configuration of historical data should be available for minimum for 1 year. 9.System shall be scalable. 10.5 years SMA to be included.					
4	IP Based Controller: Supply Installation, Testing & Commissioning of Onboard IP Direct Digital controllers as specified with supporting BACNet communication platform designed for the required IO parameters and housed in IP 55 enclosure with following features: 1. Maximum of 30 point per controller. 2. 32-bit microprocessors with RTC. 3. 10/100 ethernet port 4. Minimum 32MB Flash/128 MB SD RAM. 5. Inbuilt HTML 5 Web Server. 6. Free Commissioning tool. 7. Integrations protocols like Bacnet & Modbus. 8.Cloud capabilities using MQTT supporting brokers like AWS,Google Cloud ,Microsoft Azure & general Mosquitto . 9.Built in SQL for history storage. 10.Network Security Standard like IPv6, DHCP Client, SSL, TLS 1.3, 802.1x	15	Nos.			



	11.Main Processor of the controller shall be minimum 500 Mhz. 12.CE,UL,BTL,ROHS,FC C Listed.						
5	IP Based Controller: Supply Installation, Testing & Commissioning of Onboard IP Direct Digital controllers as specified with supporting BACnet communication platform designed for the required IO parameters and housed in IP 55 with following features: 1. Maximum of 40 point per controller. 2. 32-bit microprocessors with RTC. 3. 1 x 10/100 ethernet port. 4. RS485 ports for integration with BACnet and Modbus devices. 5. SD slot should be available 6. Minimum 8GB Flash/512 MB SD RAM. 7. Inbuilt HTML 5 Web Server 8. Free Commissioning tool 9.Integrations protocol like BACnet & Modbus 10.Cloud capabilities using MQTT supporting brokers like AWS, Google Cloud, Microsoft Azure & general Mosquito. 11.Built in SQL for history storage. 12.Network Security Standard like IPV6, DHCP Client, SSL, TLS 1.3, 802.1x 13.Main Processor of the controller should be minimum 1 Ghz 14.CE, UL, BTL, ROHS, FCC listed.	2	Nos.				
a.	Integration of Chiller Units	Cost to be included in DDC above. MODBUS RS-485 integration points to be provided by chiller vendor to BMS system.					



6	Sensors and field devices	U/R	Lot				Existing field sensors, valves actuators to be utilized, if functionality and in working condition or else replaced wherever required. Chiller valves shall be motorized. Supply in client scope.
7	Supply and Installation of IP 55 rated DDC Panel/Enclosure.	18	Nos.				
8	Testing and commissioning of the system along with the Graphical User Interface (GUI) implementation.	01	lot				
9	Conducting, Wiring and cabling	Existing cables to be used, vendor to check the status of cabling and if any additional cabling is needed shall be inform to Bank. Wiring is under Bank scope.					
A	Total of Building Management System (BMS) (Excluding GST)						

**Note: - 1. The unit rate are including delivery charges, installation charges etc. and exclusive of all GST.*



I/O SUMMARY

INPUT OUTPUT SUMMARY (HVAC) - BOB, MUMBAI												
1	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICES/PROVISIONS	SCOPE
	AIR HANDLING UNIT			DI	AI	DO	AO					
	AHU ON/OFF Command	17				17		X	X		Command from PC/DDC to the VFD panel.	HVAC vendor to make electrical provision
	AHU ON/OFF Status			17				X		X	Potential free contact from VFD panel	HVAC vendor to make electrical provision
	AHU Auto / Manual status			17				X		X	Potential free contact from VFD panel	HVAC vendor to make electrical provision
	Filter status			17				X		X	Air differential pressure switch across the filter.	Existing Air differential pressure switch and all accessories to be checked for filter status. Replaced if faulty.
	Return air Temperature monitoring				17			X			Temperature sensor	BMS vendor shall check existing temperature sensor to be checked with all accessories. Replaced if faulty.
	Chilled water valve command						17	X	X		Chilled water valve	BMS vendor should check existing connection to valve and control the valve as per return air temperature (valve installation in HVAC scope)
	VFD Trip status			17				X			Potential free contact from VFD panel	HVAC vendor to make electrical provision
	Fire damper command					17					Potential free contact from fire damper	HVAC vendor to make provision
	TOTAL IO			68	17	34	17					
	IO PER AHU DDC			10	2	5	2				7 Nos. DDC	DDC 1 to 7
2	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICES/PROVISIONS	SCOPE
	TFA UNIT			DI	AI	DO	AO					
	TFA ON/OFF Command	2				2		X	X		Command from PC/DDC to the VFD panel.	HVAC vendor to make electrical provision
	TFA ON/OFF Status			2				X		X	Potential free contact from VFD panel	HVAC vendor to make electrical provision
	TFA Auto / Manual status			2				X		X	Status from PC/DDC to the VFD panel.	HVAC vendor to make electrical provision
	Filter status			2				X		X	Air differential pressure switch across the filter.	BMS vendor shall provide Air differential pressure switch and all accessories for filter status if existing is faulty.
	Supply air temperature monitoring				2			X			Temperature sensor	BMS vendor shall provide duct type temperature sensor with all accessories.
	Chilled water valve command						2	X	X		Chilled water valve	BMS vendor should check existing connection to valve and control the valve as per return air temperature (valve installation in HVAC scope)
	TFA Trip Status			2							Potential free contact from VFD panel	HVAC vendor to make electrical provision
	VFD speed reference						2		X		Command from PC/DDC to the VFD panel.	BMS vendor to control speed
	TOTAL IO			8	2	2	4					
	IO PER TFA DDC			8	2	2	4				1 No. DDC	DDC 8
3	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICES/PROVISIONS	SCOPE
	HVAC SYSTEM			DI	AI	DO	AO					
	Ventilation air Fans	4										
	Fan run status			4				X		X	Potential free contact from starter panel	HVAC vendor to make electrical provision
	Fan On/Off command					4		X	X		Potential free contact from starter panel	HVAC vendor to make electrical provision
	Fan auto/Manual Status			4				X			Potential free contact from starter panel	HVAC vendor to make electrical provision



	Fan Trip Status			4				X		X	Potential free contact from starter panel	HVAC vendor to make electrical provision
	TOTAL IO			12	0	4	0					
	IO PER FAN DDC			12	0	4	0				1 No. DDC	DDC 9
4	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICES/PROVISIONS	SCOPE
	HVAC SYSTEM			DI	AI	DO	AO					
	Chiller	3	150									Chiller integration with Modbus over RS 485 by chiller vendor. Chiller vendor to demonstrate all the parameters on Modscan.
	Common Header Supply Temp				1			X		X	Immersion type temperature sensor	Provision by HVAC Vendor. BMS vendor to integrate.
	Common Header Return Temp				1			X		X	Immersion type temperature sensor	Provision by HVAC Vendor. BMS vendor to integrate.
	Chiller Flow status			3				X		X	Flow Switch	Provision by HVAC Vendor. BMS vendor to integrate.
	Outdoor air temperature				1			X			Temperature sensor	Provision by HVAC Vendor. BMS vendor to integrate.
	Outdoor air Relative Humidity				1			X			Humidity sensor	Provision by HVAC Vendor. BMS vendor to integrate.
	Supply water temperature				3			X			Immersion type temperature sensor	Provision by HVAC Vendor. BMS vendor to integrate.
	Return water temperature				3			X			Immersion type temperature sensor	Provision by HVAC Vendor. BMS vendor to integrate.
	Auto Manual Status			3							Potential free contact from chiller panel	Provision by HVAC Vendor. BMS vendor to integrate.
	Trip status			3							Potential free contact from chiller panel	Provision by HVAC Vendor. BMS vendor to integrate.
	Run status			3							Potential free contact from chiller panel	Provision by HVAC Vendor. BMS vendor to integrate.
	On/Off command					3					Command from PC/DDC to the VFD panel.	Provision by HVAC Vendor. BMS vendor to integrate.
	Isolation Valve Open status			3							Potential free contact from valve to DDC	Provision by HVAC Vendor. BMS vendor to integrate.
	Isolation Valve Close status			3							Potential free contact from valve to DDC	Provision by HVAC Vendor. BMS vendor to integrate.
	Isolation Valve Open Command					3					Potential free contact from DDC to valve	Provision by HVAC Vendor. BMS vendor to integrate.
	Isolation Valve Close Command					3					Potential free contact from DDC to valve	Provision by HVAC Vendor. BMS vendor to integrate.
	TOTAL IO			18	10	9	0					
	IO PER CHILLER DDC			9	5	5	0				2 No. DDC	DDC 10-11
5	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICES/PROVISIONS	SCOPE
	HVAC SYSTEM			DI	AI	DO	AO					
	Chiller Primary Pump	5										
	Primary pump Auto/Manual status			5							Potential free contact from Chiller primary pump	Provision by HVAC Vendor. BMS vendor to integrate.
	Primary pump Trip status			5							Potential free contact from Chiller primary pump	Provision by HVAC Vendor. BMS vendor to integrate.
	Primary pump Run status			5							Potential free contact from Chiller primary pump	Provision by HVAC Vendor. BMS vendor to integrate.
	Primary pump On/Off Command					5					Potential free contact from Chiller primary pump	Provision by HVAC Vendor. BMS vendor to integrate.
	TOTAL IO			15	0	5	0					
	IO PER PUMP DDC			15	0	5	0				1 No. DDC	DDC 12
**	DDC Controller - All existing cabling to above IO shall be checked by BMS vendor											
**	Electrical contractor to provide 5/15 A, 230VAC - UPS Power sockets - near the DDC Controller											
**	M - Monitor, C - Control, A - Alarm											

INPUT OUTPUT SUMMARY (ELECTRICAL) - BOB, MUMBAI



1	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICE/PROVISION	INSTALLATION SCOPE
	DI			AI	DO	AO						
	Diesel generator	2										
	Generator set On / Off status			2								
	TOTAL IO WITHOUT SPARE			2	0	0	0					
	IO PER DG DDC			2	0	0	0				1 No. DDC	
											DDC 13	
2	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICE/PROVISION	SCOPE
	DI			AI	DO	AO						
	FIRE ALARM & FIRE FIGHTING SYSTEM	5										
	Fire Alarm fault status			1				X		X	Potential free contact	FLS vendor to provide potential free contact
	Fire detection status			1				X		X	Potential free contact	FLS vendor to provide potential free contact
	Fire pump Auto /manual status			5				X		X	Potential free contact	Electrical vendor to provide potential free contact
	Fire Pump Run status			5				X		X	Potential free contact	Electrical vendor to provide potential free contact
	Fire Pump Trip status			5				X		X	Potential free contact	Electrical vendor to provide potential free contact
	Sprinkler/Hydrant line pressure monitoring				6			X		X		
	TOTAL IO WITHOUT SPARE			17	6	0	0					
	IO PER FIRE SYSTEM DDC			17	6	0	0				1 No. DDC	
											DDC 14	
3	EQUIPMENT/AREA	QTY	SOFT POINTS	HARD WIRED IO				M	C	A	DEVICES/PROVISIONS	SCOPE
	DI			AI	DO	AO						
	ELECTRICAL SYSTEM											
	Electrical Breakers	18										
	Breaker ON status			18				X			From Electrical Panel	Provision by Electrical Vendor
	Breaker trip status			18				X		X	From Electrical Panel	Provision by Electrical Vendor
	Transformer coil temperature			2				X		X	Temperature sensor	Provision by Electrical Vendor
	TOTAL IO WITHOUT SPARE			38	0	0	0					
	IO PER ELECTRICAL DDC			19	0	0	0				2 Nos. DDC	
											DDC 15-16	
**	DDC Controller - All existing cabling to above IO shall be checked by BMS vendor											
**	Electrical contractor to provide 5/15 A, 230VAC - UPS Power sockets - near the DDC Controller											
**	M - Monitor, C - Control, A - Alarm											



PART – B: Upgradation of Access Control System

FINANCIAL BID

Sr No.	Description	Qty	Unit	Rate/Unit	IGST / SGST (Percentage)	Amount (Excluding GST)	Remarks
B	Access Control System						
II	Supply, Installation, Testing, Commissioning & Handing over the Access Control System (ACS) and allied systems as per specifications as below.						
1	ACS Server: Supply, installation, testing & commissioning of Central Server with the minimum following specifications: Intel® Xeon® processor E3, 3.2GHz, 4 Core, 8MB Cache memory, Intel HD Graphics, 1TB HDD, 8 GB Ram Rack Mount with compatible Server base OS & loaded with lifetime license. The server shall have only Ethernet port for browsing and configuring ACS Software.	1	Nos.				
2	ACS Workstation: Supply, installation, testing & commissioning of Workstation with minimum following specification : Intel® Core i5, 4 core, 3.2GHz, 1 TB HDD, 8 GB RAM, 52X CD Writer Drive, along with keyboard, mouse etc, with Original Windows lifetime license complete as per the detail technical specification, with 19" color monitor flat screen LED display (Full HD), original microsoft office latest with client recommended anti virus, Misrosoft SQL	1	Nos.				



	Server license and A4 laser printer (Alarms & reports).						
3	IP Based Controller: Supply Installation, Testing & Commissioning of Onboard IP access controllers as specified with minimum following specifications: 1. 32-bit microcontroller having networking capabilities with 10/100 Base T RJ45 ethernet interface & RS 485 interface ports. 2. Two door/ Four reader IP controller that shall support minimum 4 Wiegand readers housed in single tamper proof metal enclosure with power supply. 3. Shall support variable card formats & multiple cards reading technologies shall be supported. 4. Protocols supported: TCP/IP IPv4 & IPv6, SNMP, HTTP, FTP, NTP, SSL, SMTP. 5. Minimum 8 GB flash memory, 2 GB RAM. 6. Certifications: CE, FCC.	10	Nos.				
4	Smart card readers: Removal, refixing & reprogramming of existing smart card readers.	Existing card readers to be utilized, if functional and in working condition or else replaced wherever required as per rate quoted in para 4 (a) below					
a	Smart card readers 13.56 MHz frequency	9	Nos.				For Flap barriers. Controller location main gate/Reception area.



5	Removal & refixing of existing Electromagnetic Locks, Egress Switch, L & Z brackets, Card readers and Push button with all accessories wherever required.	1	Lot				Existing Electromagnetic lock, Egress switch and Push button to be utilized, if functionality and in working condition or else replaced wherever required at this package cost.
6	<p>Access Control Software: Supply Installation, Testing & Commissioning of Supervisory Software with the below mentioned capabilities:</p> <p>1. Configuration, Programming, Commissioning of Web based software for Time & attendance for cardholder administration & Access control System software for existing users, new Users, Access Groups, reports, alarms as per Client's specific requirements.</p> <p>2. Access area balancing, N-persons authorization, Arm / Disarm, Elevator interface, Import/Export interface, Remote door unlock, Card personalization.</p> <p>a) Enterprise level Software. b) 5 years SMA included. c) New Licenses Software Modules compatible with above ACS Enterprise Software for 2000 USERS. d) Training to client personnel for configuring of new access cards.</p>	1	Lot				



7	Supply of new blank access smart cards (26 bit / 37 bit) for compatibility with above system.	500	Nos.				Programming & Configuration of all existing & new access smart cards (26 bit / 37 bit) must be compatible and to be done without any additional cost to bank
8	Supply and laying of PVC insulated copper flexible cables in conduit:	Existing cables to be used, vendor to check the status of cabling and if any additional cabling is needed shall be inform to Bank. Wiring is under Bank scope.					
a	Cat-6 cable with 23 AWG (solid), bare copper, PVC sheath: as required with Cable ties. (1 box - 305 mtr)						
b	8C X 0.75 sq. mm. cable						
c	4C X 0.75 sq. mm. cable						
d	2C X 0.75 sq. mm. cable						
9	Network Passive component for ACS Network to make ACS system functional (like network switches, rack, patch cord etc.)						
B	Total of Access Control System (Excluding GST)						



NOTICE INVITING REQUEST FOR PROPOSAL (RFP) FOR UPGRADATION OF HVAC CONTROLS, ACCESS CONTROL SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR INTEGRATED BUILDING MANAGEMENT SYSTEM IN BANK OF BARODA, BARODA SUN TOWER, C-34, G-BLOCK, BANDRA KURLA COMPLEX, BANDRA (EAST), MUMBAI

PART – C

Comprehensive Annual Maintenance Contract (CAMC) of Integrated Building Management System (IBMS) after Warranty Period:

S.No.	Description	CCTV Surveillance System (i)	Addressable Fire Alarm System and PA system (ii)	BMS System (HVAC Control) (iii)	Access Control System (iv)	Total in Rs.
1.	1 st Year CAMC charges exclusive of tax			Free of cost (under DLP)	Free of cost (under DLP)	
2.	2 nd Year CAMC charges exclusive of tax					
3.	3 rd Year CAMC charges exclusive of tax					
4.	4 th Year CAMC charges exclusive of tax					
C	Grand Total Amount (Excluding GST)					
	Figure in Words:					

<u>GRAND TOTAL PRICE BID (PART {A} + PART {B} + PART {C})</u>	<u>Rs.</u>
<u>GRAND TOTAL IN WORDS ANNEXURE (PART A + B +C): Rupees</u>	

Note: In case of any discrepancy, total cost quoted in words will be considered.

Seal:

Date:

Place:

Name & Signature of the Vendor