Bharat Heavy Electricals Limited

Information Technology Centre, HEEP, Ranipur, Haridwar-249403
UTTARAKHAND (INDIA)
Phone: 01334-284082, FAX: 223948 E-mail: arvind@bhelhwr.co.in

Ref: HW/ITX/2/1172
Date: 27/03/2014

Subject: Notice Inviting Tender for Implementation of Electronic Attendance System at BHEL, Haridwar under five years financial lease.

Sir,

1. BHEL, Haridwar plans to implement Electronic Attendance System as per the tentative scope of work enclosed. Scope of work is given in detail in Annexure-II. The tender document comprises of following:

Annexure I	Technical Prequalification Criteria
Annexure II	Terms & Conditions
Annexure III	Technical Specifications
Annexure IV	System Description
Annexure V	Prequalification Criteria Compliance Sheet
Annexure VI	Technical Compliance Sheet
Annexure VII	Price Bid Sheet

2. You are requested to submit techno-commercial offer in two parts in the enclosed formats strictly as per the scope of supply indicated therein. The tender offer should be sealed in separate envelopes with 'Technical bids' / 'Commercial bids', tender no., opening date duly super scribed on the envelopes. The technical bid envelope should enclose your technical offer, Pre-qualification criteria compliance sheet (Annexure-V), Technical compliance sheet (Annexure VI), signed copies of Terms and conditions (Annexure-II) & system description (Annexure IV) and unpriced bid (Annexure VII) duly signed / stamped. **All documents/proofs/ certificates / data sheets required as per Annex-V and VI must be submitted in the Technical bid.** The EMD and tender document fee will also be submitted alongwith this part of bid.

   The commercial bid envelope should enclose price bid (Annexure VII) only.

4. Technical bid will be opened on the last day of submission of the tender at 2.00 P.M. in the presence of the tenderers or their authorized representatives who may like to be present. Incomplete offers are liable to be rejected.

5. The terms and conditions given at Annexure-II will be adhered to by the tenderer. Please do not remain silent on any point and if you are not accepting any terms/conditions please clearly state so**.** Any deviation/remarks should be clearly specified by the tenderer in separate sheets.

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6. Vendor must meet prequalification criteria as per Annexure-I. The offers not meeting these criteria will be rejected summarily.

7. Earnest money of Rs. 200,000 and tender document charges of Rs. 2000/- in the form of demand draft (two separate drafts) in favour of BHEL, Haridwar or cash deposit (to the extent admissible in Income Tax Act) with Accounts officer, BHEL, Ranipur, Haridwar is to be furnished with the tender offer. BHEL reserves the right to reject any or all tenders without assigning any reason there-of. EMD of unsuccessful vendors will be refunded within 15 days of awarding the tender.

8. The offers in sealed envelope should be submitted latest by **1.45 P.M. on 22/04/2014** at the following address through registered post / speed post:

Head of Material Management
Heavy Electricals Equipment Plant
Bharat Heavy Electricals Limited
Ranipur Haridwar (Uttarakhand)
PIN – 249403

The quotation must be posted taking the allowance for postal transit delays.

Alternatively, the tender duly sealed and superscribed, clearly mentioning the 'Technical/Commercial Bid', tender no., opening date as mentioned above may be deposited in the **tender box situated at fourth floor, Main Administrative Building, HEEP, BHEL, Ranipur, Haridwar.**

Quotation not received in time is likely to be ignored.

Tender opening is scheduled to start in the tender room at 2 PM on due date. Therefore quotation must reach the above mentioned office / tender box latest by 1:45 PM on due date.

IMPORTANT: Any vagueness / incomplete detail in the offers shall make it liable to be rejected as these shortcomings in the offers shall be interpreted as incompetence on the part of vendor to meet the requirements of BHEL.

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Checklist for submitting the bid is as under:

To be submitted with Technical Bid

Sl.	Annexure	Description	Remarks
1	Annexure II	Standard Terms & Conditions	Signed & Stamped copy
2	Annexure IV	System Description	Signed & Stamped copy
2	Annexure V	Pre-Qualification Criteria Compliance	**All referred documents / proof / data sheets to be submitted**
3	Annexure VI	Technical Compliance Sheet	
4		EMD	
5		Tender document fee	
6	Annexure VII	Un-priced Bid	**Signed & Stamped copy** **Mention Tax Rates**

To be submitted with Price Bid:

Sl.	Annexure	Description	Remarks
1	Annexure VII	Price Bid	Signed & Stamped In a separate sealed envelope

Annexure List:

Annexure I	Technical Prequalification Criteria
Annexure II	Terms & Conditions
Annexure III	Technical Specifications
Annexure IV	System Description
Annexure V	Prequalification Criteria Compliance Sheet
Annexure VI	Technical Compliance Sheet
Annexure VII	Price Bid Sheet

Thanking you,

Yours faithfully,

(Arvind Kumar Gupta)
Sr. DGM/ITX

Annexure I

Technical Pre qualification Criteria	
Sr. No	**Description**
1.	The bidder should be either OEM of readers who is willing to undertake total scope of work or an authorized system integrator of the OEM of readers having direct purchase and support agreement with OEM. Authorization certificate from OEM to be submitted along with the bid. The Certificate / Authorization Letter specific to this tender must be enclosed with the Technical Bid, without which the offer shall be liable for rejection.
2.	Bidder shall be system integrator of similar enterprise setups for last 3 years. Proof to be submitted.
3.	Bidder shall have experience in executing AMC contracts of similar setups for last 3 years. Proof to be submitted.
4.	The Bidder should have successfully executed similar projects during last 5 years in any one of the following: a. Three setups of minimum 2000 employees in industrial setups Or b. Two setups of minimum 3000 employees in industrial setups Or c. One setup of minimum 5000 employees in industrial setups. The executed work under consideration should be of total Solution and Infrastructure Setup, which should include cable laying and system integration. Proof to be submitted.
5.	The bidder should be ISO9001 certified as per Global Standards
6.	Bidder should have PF no./ESI no./Medical policy for executing the contract.
7.	OEM of readers shall have Registered Office and Technical Assistance / Service Centers in India.
8.	Bidder should have sound financial position in the market and should be earning profit since last three years. Bidder shall submit financial statements for the last three years duly audited.
9.	Bidder should not be in the delist category or under hold for business dealings with HEEP, BHEL Haridwar, or is under ban for business dealings with any Unit / Division / Office of BHEL.

Annexure II

TERMS & CONDITIONS

1 General

1.1 The term vendor shall apply to successful tenderer. The vendor is the lessor and BHEL, Haridwar (A Govt. of India Undertaking) is the lessee.

1.2 The vendor shall supply, install, commission and maintain on a turn-key basis, the equipment, detailed in the lease orders hereinafter referred as "Lease Orders" placed by BHEL on the vendor from time to time which will fulfill the functional requirements as defined in scope of supply.

2 Lease / Prices

2.1 The lease period shall be 5 years after the successful commissioning and acceptance of the complete system.

2.2 Successful vendor shall enter into lease rental agreement with BHEL on non-judicial stamp paper of required value as per extant rules, at their own cost.

2.3 Lease payment will be paid on quarterly basis, at the end of each quarter. Invoices are to be submitted in triplicate alongwith other necessary documents. Deduction of downtime if any shall be made from quarterly lease rental charges.

2.4 Prices are net F.O.R destination, inclusive of freight, handling and packing charges, transit insurance, installation, commissioning, regular insurance, on-site comprehensive maintenance including spares and cost of resident engineers during the entire lease period and shall remain firm without any variation during lease period. Lease tax, service tax and government levies shall be extra as per actuals during the lease period.

2.5 The vendor shall be responsible for payment of excise duty, custom duty, all other state/central/local govt. taxes, freight and insurance up to equipment-installation-sites in BHEL Haridwar and during the lease period.

2.6 No interest whatsoever shall be payable by BHEL on any amount due to the vendor.

2.7 The insurance coverage should be comprehensive with provisions for theft, fire, floods, riots etc. The responsibility for the insurance will rest with the vendor. Claim(s), if any, will be dealt with the underwriters directly by the vendor / lessor. Evidence of insurance policy shall be submitted to BHEL, if the vendor / lessor fails to renew the insurance policy before expiry, BHEL may affect the insurance from the lease rental.

2.8 Projected requirement for each equipment / software or any other component is as per tender document. Final ordered quantities for each equipment / software may vary, however price evaluation shall be done on projected quantities only. BHEL may go in for additional quantity of equipment/software. The vendor shall extend the same rates for 12 months from the date of placement of original order for the additional equipment / software to be installed at BHEL Haridwar.

2.9 The benefit of depreciation under IT act and other related statuary provisions for the equipment supplied by the vendor under this contract will be claimed by BHEL after capitalisation of goods in its books. The vendor will furnish all relevant documents to enable BHEL to claim benefit of depreciation.

2.10 The Lease Charges are calculated quarterly. BHEL agrees that vendor may assign the Lease Charges in favor of third party ("Assignee") and consents (subject to prior approval from BHEL) to such assignment of the Lease Charges by the vendor to the Assignee. BHEL agrees that the vendor may disclose any information or documents that it may consider necessary to help the vendor exercise these rights subject to NDA (Non-Disclosure Agreement) clauses.

2.11 Pursuant to the assignment of the Lease Charges by the Vendor to the Assignee, all amounts payable to the vendor under this agreement by BHEL shall be payable by BHEL to the Assignee. Responsibilities

and obligations of BHEL and the vendor under this Agreement shall remain unchanged, notwithstanding the assignment of Lease Charges in favor of the Assignee.

2.12 Price bid offer shall be valid for 120 days from the date of opening of technical bid.

3 Delivery

3.1 The vendor shall supply, install, test and commission the whole work in all respect within 20 weeks from the date of placement of order. Early delivery / commissioning is acceptable.

3.2 BHEL reserves the right to ask for a delayed delivery of a part or whole of equipment.

3.3 Hardware/software configuration shall be deemed as incomplete or undelivered, if any component of hardware or software within the configuration or main documentation related thereto is not delivered and if delivered is not operational or not acceptable after testing/examination.

3.4 In case the delivery, installation and successful commissioning schedule for the works is not adhered to, penalty at the rate of 0.5% per week (or part thereof) of the amount equivalent to lease rent of entire lease period of the remaining equipment/works (subject to a maximum of 5% of total lease rent of entire lease period) shall be levied by BHEL on the vendor. However, in the event that the delay occurs on account of fault of BHEL including on account of failure of BHEL to ensure site preparation, the period on this account will not be considered for penalty.

3.5 Penalty, if any, shall be deducted from first quarterly lease charges. In case, the penalty amount is more than the first quarterly lease charges, the same shall be adjusted from the subsequent quarters.

4 Scope of Work

4.1 Supply, unloading, Installation, Configuration, Commissioning, Testing, integration and maintenance of Electronic Attendance cum Access Control System equipment & software as per specified configuration.

4.2 Supply, installation, testing and commissioning of servers along with OS software, database software, application software, reporting software.

4.3 Supply, installation, testing and commissioning of Employee Self Service Kiosks.

4.4 Finger enrollment, photography, card preparation, card printing initially for all employees.

4.5 Finger enrollment, photography, card preparation, card printing for employees during lease period for various reasons like promotions, new entrants, lost cards etc.

4.6 Flap barriers alongwith biometric smartcard readers installed at buildings for access cum attendance and biometric smartcard readers installed in other locations for attendance to be integrated and maintained by vendor during entire lease period.

4.7 The system should transfer data to Payroll system for wage preparation which can be either SAP or any leading database software.

4.8 Preparation of MIRs as per requirement.

4.9 Preventive Maintenance of equipment.

4.10 Daily checking of normal functionality of the system.

4.11 All batteries installed in the system to be changed after 3 years (Once during lease period) and also as and when they fail without any cost to BHEL.

4.12 Robust mounting of flap barriers, readers / controllers in buildings and shop floor areas. In case of buildings, where Access cum Attendance Control is to be implemented, readers will be mounted on flap barriers. In case of areas, where only Electronic Attendance system is to be implemented, readers are to be mounted on 3” dia SS pedestal with SS plate on top of it. Height of pedestal should be 90 cm. Cost of these mounting items including any mounting accessories, as required by vendor should be included in the cost of flap barriers and readers itself.

4.13 Providing power to equipment from nearest power source. Power cables shall run in MS conduits / PVC pipes with temper-proof arrangement.

4.14 Providing network connectivity to equipment from nearest network switch rack through UTP network cables. Network cables shall run in MS conduits / PVC pipes with temper-proof arrangement.

4.15 Providing connectivity between readers / controllers / barriers through control cables. Cables shall run in MS conduits / PVC pipes with temper-proof arrangement.

4.16 Ferruling / labeling of cables/wires/passive networking for easy identification.

4.17 Cable termination, testing etc. shall be as per industry standards.

4.18 Supply of all cable laying accessories including MS conduits, PVC pipes, supporting structures, clamps, identification tags, ferules etc required for laying of cables.

4.19 Minor civil works such as chipping / cutting of floors for making grooves, making holes/opening through walls, ceiling or floors, drilling of holes through steel structures and frames, grouting of frames, hooks on walls/ceiling etc. required for execution of work. After erection, surface shall be made good by plastering / painting to their original shape and finish.

4.20 One set of software CDs/DVDs, O&M manuals, relevant documents / drawings and test certificates of equipment shall be submitted.

4.21 A high level design/ diagram and plan should be submitted along with detailed equipment layout.

4.22 BHEL's involvement during each stage of implementation shall be ensured by the vendor.

4.23 Training on daily maintenance and administration of whole system as per mutually agreed training plan.

4.24 Acceptance Testing based on agreed ATP document.

4.25 Before submission of bid, vendor can visit the site physically to assess the actual amount of work.

4.26 Vendor should quote only one make & model for each of the equipment i.e. no alternatives of makes and/or models are allowed for single equipment. However different makes can be quoted for different equipment.

4.27 Vendor should ensure the completeness of the solution. Any items / equipment, not mentioned in the BoM, but are mandatory for the completeness of the project; same shall be supplied and installed. Cost of same shall be mentioned as "Any Other Charges" in the price bid.

4.28 The specifications of each item has been defined in the tender document after due consideration of BHEL requirements and scalability needs. These specifications are **minimum** required specifications to meet the solution implementation needs. However, the vendor should study, on its own, at his/her own cost the requirement of BHEL and can quote specifications higher than those mentioned in the document.

4.29 Comprehensive operations / maintenance of entire infrastructure for five years lease period after the successful commissioning of all the components.

4.30 Repairing/replacing any faulty cable/UTP during full lease period, damaged due to any reason whatsoever, will be done by the vendor. BHEL shall not bear any cost for the same.

4.31 BHEL reserves the right to relocate the equipment. Shifting of equipment from one location to another with in BHEL campus shall be the responsibility of the vendor. All the requisite works like dismantling of equipment, packing, transportation etc. shall be the responsibility of the vendor. A mutually agreed cost will be paid by BHEL to the vendor on this account. The time given for shifting and installation of equipment at new location will be mutually agreed and time taken beyond that period will be treated as downtime.

4.32 Tenderer shall ensure back to back AMC from OEMs of critical equipment like readers, controllers, servers etc during entire lease period, proof to be submitted to BHEL.

4.33 Any software / firmware updates, patches updates including version change with respect to the Smart Card Readers, controllers (if any), Servers & Application Software should be regularly provided during the entire lease period.

4.34 Tenderer shall ensure two years AMC of OS and database software for updates and upgrades. However patches for these software should be available for entire lease period.

4.35 Consumables for printing of Smart Cards – Any consumables including print cartridges required for the preparation of smart cards will be in vendor's scope.

4.36 Supply & preparation of additional Smart Cards required during the contract period will be vendor's responsibility and the same rate will be applicable. Vendor has to ensure the availability of such additional requirement as & when needed. **Approximate 1200 Smart Cards shall be required annually (Total 4800 cards)**.

4.37 The vendor shall provide the certificate of newness of the equipment at the time of supply of equipment.

4.38 No items shall be offered, whose end-of-sale has been declared by the OEM or has been declared to be under phase out. Certificate from OEM shall be submitted regarding it.

5 Installation

5.1 The vendor shall nominate a qualified and experienced project manager who on behalf of the vendor shall coordinate and be responsible for all the activities related to execution of the order for establishing the electronic attendance system at BHEL Haridwar. He shall act as an interface between the vendor and BHEL. The project manager shall:

- Be posted at site till completion of installation and acceptance test.
- Carry out detailed site inspection.
- Prepare Bill of Material location wise.
- Suggest additional site preparation requirement to BHEL not a part of the order.
- Submit a complete layout plan / drawings for the required components of electronic attendance cum access control system.
- Submit the detailed project schedule in consultation with BHEL.
- Monitor the progress vis-à-vis the project schedule.
- Coordinate for all required help and inputs necessary for the execution of the contract.
- Maintain logbook of the work carried out.
- Submit a detailed drawings of cable layout, position of readers, controllers etc.
- Finalise the acceptance test procedure with the BHEL.

5.2 Any equipment, fitting, material, software or supplies which may not be specifically mentioned in the specifications but which are necessary for carrying out the contract works within the scope of the tender are to be provided for and rendered to by the vendor. Such items not quoted by the vendor, if found necessary during execution of the contract, shall have to be supplied at no extra charge by the vendor.

5.4 The vendor shall ensure that work is carried out by experienced, registered and certified personnel of the proposed system.

5.5 The vendor should fulfill all statutory and safety requirements for personnel engaged while executing the contract. If BHEL has to incur any expenditure due to non-compliance of the applicable statutory provisions, the same will be compensated by the vendor.

6 Acceptance Test Procedure

6.1 The vendor shall submit project completion report to BHEL once the electronic attendance system is established so that BHEL can carry out the acceptance test. All manuals, accessories etc. will be handed over by vendor to BHEL.

6.2 The vendor shall submit the detailed documentation of system including SLDs, cabling layout, equipment location and bill of material etc. prior to start of the acceptance test. The vendor shall give all documents in computer format.

6.3 The acceptance test which involves running standard vendor tests and/or BHEL tests and the operations of the complete system shall be carried out round the clock for 10 days immediately after completion of installation and documents submission as stated above. Some suggestive tests are as follows:

- 6.3.1 Demonstration of minimum 25 numbers of transactions from each Smart Card Reader.
- 6.3.2 Demonstration of minimum 25 numbers of transactions from each flap barrier.
- 6.3.3 Online report for all the above swipes.
- 6.3.4 Demonstration of smooth working of all software modules as per specifications from the central servers and workstations.
- 6.3.5 Demonstration of web based report viewing facility on local area network with proper authorization & authentication.
- 6.3.6 Demonstration of working of system on battery, in case of power failure during day & night, emergency situation.

6.4 All the software offered, shall be loaded completely and made functional in all respects before the start of the acceptance test by the vendor. Vendor shall demonstrate all the features of the equipment/software and show that equipment/software is performing as per specified configuration.

6.5 If any equipment fails during the acceptance test for three times, it will be replaced by the vendor and the acceptance test on the replaced equipment shall be performed afresh.

7 Training

Training of BHEL personnel shall be part of the contract.
During installation at BHEL, the associated BHEL personnel shall be guided on the configuration being made and usage.
Advanced level training shall be provided by vendor as per mutually agreed plan.

8 Warranty, Maintenance & Support

8.1. The vendor shall keep the sufficient spares at site to keep the system downtime at minimum. Minimum 5% of total installed readers shall be kept as spares for immediate replacement.

8.2. The vendor shall provide comprehensive maintenance support on 24x7 hours basis by minimum three resident engineers posted at BHEL Haridwar without payment of extra charges for operations, maintenance and upkeep of system. Normal shift timings will be 7 AM to 4 PM on 6 days working basis, however engineers shall be available on 24x7 basis on emergency call basis. Out of three resident engineers, two engineers will look after the hardware part of the system and third engineer shall be expert on software for day to day operations, programming and MIR generation. The resident engineers:

- 8.2.1. Shall observe BHEL timings and holidays.
- 8.2.2. Shall leave the station only after seeking written permission from BHEL and arranging for proper substitute.
- 8.2.3. Shall have their own accommodation, mobile phones, vehicle etc.

8.3. Comprehensive maintenance shall include the following:
- 8.3.1. Repair / Replacement of faulty equipment including but not limited to all plastic and/or rubber parts, adapters, batteries, printer heads etc.
- 8.3.2. Installation charges
- 8.3.3. Site inspection charges
- 8.3.4. Periodic maintenance, wherever required
- 8.3.5. Cost of Maintenance Engineers
- 8.3.6. Keeping sufficient spares to maintain the specified uptime.

8.4. Vendor shall warrant that spare parts of the equipment shall be available for minimum period of 8 years after completion of the acceptance test.

8.5. After the expiry of five year lease period, the maintenance support shall be provided by the vendor on agreed maintenance charges, if BHEL desires so. The vendor should be able to provide the support for quoted products for a minimum period of 3 years after expiry of five year lease period. **vendor shall give commitment letter in this regard.**

9. Downtime Penalty

9.1. The vendor shall maintain the overall uptime of equipment to minimum 98% during the lease period.

9.2. A deduction from the quarterly rental of affected equipment / software shall be made at the rate of 1% for each 1% fall of uptime from 98% e.g. if the uptime of a reader is 97%, one percent of quarterly rental of one reader for the particular quarter shall be deducted. The calculation for uptime shall be made on monthly basis for system. The downtime calculation shall be based on 24x7 hours.

9.3. There shall be no downtime due to mutually agreed scheduled maintenance of equipment, network equipment fault, fault due to mishandling of equipment by users or due to prolonged power outage.

9.4. Downtime calculation will be applicable for non-availability of all services / equipment arising due of malfunctioning of a particular equipment e.g. malfunctioning of a controller will also affect the uptime of readers connected to it so downtime penalty will be deducted for all affected readers & controller.

9.5. If the uptime of a particular equipment/system falls below 90% continuously for 3 months, the equipment/system shall have to be replaced with the new equipment by the vendor without any extra cost to BHEL.

9.6. Downtime shall be calculated on the basis of system logs / log book.

10. Risk Purchase

BHEL reserves the right to terminate the order / contract and purchase from elsewhere at the risk and cost of the vendor / lessor, either the whole or part of equipment, which the vendor / lessor has failed to deliver within the stipulated delivery period or if the same were not available, the best and nearest substitute(s) thereof. The vendor / lessor shall be liable to compensate the BHEL for any loss which BHEL may sustain by reason of such purchase. This clause will be operated only after completion of delivery period including extended period with penalty.

11. Patents & Trademarks

Vendor / lessor shall at all times fully indemnify and keep indemnified the purchaser/lessee (BHEL) against all claims which may be made in respect of systems/ goods/ software supplied by the vendor/lessor, for infringement of any right protected by patent, registration of designs or trademarks and legality of usage of software. In the event of any such claims being made against the purchaser /

lessee (BHEL), purchaser / lessee (BHEL) will inform the vendor / lessor who shall at his own cost either settle any such dispute or conduct any litigation that may arise there from.

However vendor / lessor will have no obligation for any claim or infringement arising from third party products not supplied in the order, modifications and technical information / instructions advised by purchaser and use of products prohibited by product manuals.

All such claims will be settled as per Indian laws.

12. New / Better System

During the contract period of this rental agreement, if new / better systems are available and if desired by BHEL, the existing system shall be replaced by the vendor on mutually agreed terms and price.

13. Transfer of Ownership

The transfer of ownership of the equipment which is in efficient working condition and is also decided to be taken over by BHEL shall be automatically in favour of BHEL at the termination of the 5 year lease period on payment of token terminal amount of Re. One only. The government taxes if any, and to the extent chargeable, shall be borne by vendor.

14. Arbitration

In all cases of disputes emanating from and in references to this contract, the matter shall be referred to the arbitration. All disputes or differences between the parties will be resolved through arbitration governed by Arbitration & Conciliation Act 1996 as amended from time to time. The venue of arbitration shall be Haridwar only.

15. Jurisdiction

All disputes or differences arising out of, under or in connection with this contract shall be subject to the exclusive jurisdiction of the courts having jurisdiction over BHEL Haridwar.

16. Governing Law

This contract shall be governed in all respects by the Indian law.

17. Force Majeure

Neither BHEL nor the vendor shall be responsible for delays/failures in performance resulting from acts beyond the control of either. Such acts shall include but not limited to acts of God, strikes, lockouts, riots, acts of war, epidemics, and governmental regulations superimposed after the agreement, fire, earthquakes and other such disasters.

18. Termination of Order / Lease Agreement & its Consequences

18.1. Lessee will issue a written notice of non-compliance to the vendor / lessor and after a rectification period of one month, termination clauses will be applicable.

18.2. Lessee reserves the right to terminate the order / contract, either wholly or in part upon situations arising due to non-compliance of stipulations of the order / contract by the vendor / lessor, at the risk and cost of the vendor / lessor.

18.3. Vendor / lessor shall continue the performance of the order / contract under all circumstances, to the extent not cancelled.

18.4. Consequences: As soon as the lease agreement is cancelled / terminated by the lessee, no lease charges will be payable to the lessor for the cancelled part of the agreement.

18.5. **Foreclosure:** In case of foreclosure of the lease agreement in part or full by the BHEL for reasons not attributable to the lessor / vendor, pro-rata compensation will be payable. Compensation will be equivalent to percentage of outright purchase cost and proportionately linked to balance lease period. Ownership of the equipment shall be transferred to BHEL. Notice period of one month shall be given, in case foreclosure clause is exercised.

19. Limitation of Liability

The vendor's / Lessor's liability will be limited to the scope / order value of this contract only.

20. Information Security Requirements

BHEL Haridwar has implemented Information Security Management System (ISMS) and has taken certificate for the same based on ISO 27001 standard.

BHEL Information Security Policy is as follows:
"BHEL is committed to ensure Integrity, Confidentiality, Availability and Security of it information at all times for serving the needs of the organization in line with its Vision, Mission & Values while meeting all regulatory requirements."

In line with the ISMS requirements, vendor and its staff shall ensure the protection of BHEL information assets / information processing facilities at all times with respect to confidentiality, integrity and availability.

The vendor / personnel deputed by vendor shall comply with following requirements:

- Personnel deputed by vendor shall follow the ISMS system requirements.
- Personnel deputed by vendor shall present his / her identity proof to BHEL for getting proper authorization from BHEL. He/she shall not enter into BHEL premises without proper authorization.
- Vendor and personnel deputed by vendor shall sign Non-Disclosure Agreement (NDA) in the specified format of BHEL Haridwar.
- When allowed by proper authority, he / she shall work in secure area only in the presence of BHEL staff.
- If he /she has to work on any server / network device in secure area, the work shall only be allowed in presence of system administrator or any other person authorised by ITX.
- He / she shall maintain and service only those equipment which comes under his /her scope of contract.

- Vendor / personnel deputed by vendor shall ensure the return or destruction of information / data at the end of lease agreement and as and when required.
- Access to information assets, which is not explicitly authorized, shall be treated as forbidden.
- Any information security incident and / or security breaches shall be immediately reported to BHEL.
- In case of any violation of the above, it will amount to non-fulfillment of terms & conditions of the contract.

Technical Specifications

1. Technical Specifications of Biometric Smart Card Reader - Type I (For Access Control & Attendance)		
Hardware & Performance Requirement		
1	Description	Fingerprint Biometric and Contactless Smart Card Reader with keypad for providing two-factor authentication by reading the card & comparing the fingerprint template presented to it; Marking the attendance and/or actuating the barrier. Hardware should match the requirement of access control software.
2		Should be of Plug and Play Type. Should be possible to replace the faulty reader without needing to reprogram the control unit.
3		Fault of one reader should not affect the operations of other readers in the network.
4		Reader shall be manufactured using the latest and most accurate state of the art biometric technology and shall support high speed processing
5		Should be able to control the various threshold levels and changes in the sensitivity through software.
6		At lease 9 button keypad
7		Reader shall be capable to authenticate the valid users in combination with smart card, keypad and biometric and / or separately.
8		The reader should be able to match any of 2 finger patterns.
9	Body & Mount Type	ABS/ Polycarbonate / Metallic material; Tamperproof Mounting shall be single gang or Mullion type. Should be suitable for installation on metal surface ; Should be suitable to withstand exterior installations and / or harsh industrial / environmental conditions. Minimum Requirement is IP 55 Protection. Readers to be mounted on body of flap barriers.
10	Card Type	Card reader shall be capable of reading the selected card technologies (HID iClass / Mifare within 13.56 MHz range). The protocol of data from the reader shall be an open format and non-proprietary.
11	Read Range	Shall have read range upto 5 cm when used with accepted compatible access card technology.
12	Communication with flap barrier	Reader shall communicate directly with flap barrier to actuate the barrier. If reader is not capable of directly communicating with the flap barrier, then external relay or controller can be provided in-between to actuate the barrier. Cost of relay or controller, if any, shall be built into the reader itself. Cost of signal cable connecting reader / relay / controller / flap barrier shall also be built into reader.
13	Communications	Reader should communicate with central server using TCP/IP protocol over Ethernet or Internet, 10/100 Mbps auto sensing Ethernet with DHCP, SSL, IPv4 and IPv6 Support
14	Fault Detection	In the event of reader failure / malfunction / tempering, it shall be capable of being detected by the server and appropriate alarms shall be generated at workstations / server.
15	A/V Indicators	It shall be capable to provide a unique tone and / or tonal sequence for various status conditions such as attendance marked / denied, access granted / denied, reader power condition etc and clear visual LED indications (Multi-colour) shall be provided for various status conditions.
16	Card Holder Memory	Finger template storage capacity at least 4000 Nos.
17	Event Buffer Size	50000 Nos. with date & time stamp

18	Biometric Sensor Type	500 DPI or better Optical Type Biometric Sensor. Sagem / Bioscrypt / Secugen / Suprema make. Self-contained fingerprint unit should perform enrollment and verification. The system to be Impact resistant, scratch resistant, weather durable and corrosion free.
19		In the case of fingerprint of a particular employee is not authenticating properly, system should be able to work only with smart card for that employee i.e. The terminal should support the ability to support biometric and non-biometric employees at the same terminal
20		Employees, at times, tend to punch more than once in a short span of time not being sure of the previous punch. In order to eliminate this, system should support a "no re-punch" feature which prevents employees from entering several punches in the short span of time
21		It should be possible to configure, manage and diagnose multiple geographically dispersed readers from a central desktop application without custom programming
22		Should have central administration module to manage all readers installed remotely
23	Clock	Shall have built-in RTC Calendar. Should be able to sync the clock with the server.
24	Power	Shall have built-in or external power supply required for internal operations. Should be able to work with 230V single phase power supply.
25	Battery Backup	SMF Batteries for backup of min. 3-4 hours. Should be able to control EM locks also. Lithium battery to maintain data in RAM and supply power for the on-board RTC etc.
26	Battery Refresh	The bidder shall compulsorily replace all the batteries after 3 years and as and when the batteries get faulty during the entire lease period
27	Environmental	Temperature 0 to 40 degree C; 10% to 95% RH non-condensing
28	Template Size	Around 350 bytes
29	Verification Time	Less than 1 second
30	Enrollment Time	Less than 3 seconds
31	FAR / FRR	0.001% FAR; 0.01% FRR in Ideal Conditions
32	Scan Capture Area	13 mm x 13 mm minimum
33	Graphical Display	Backlit graphical LCD display of 60 mm x 18 mm size and 120x32 resolution shall be provided for feedback on read process
34		The solution should be able to download punch information of employees from the readers in real-time. There should be no batch process required. Also, if required, communications with server should be performed at regularly scheduled intervals or preset times, or on an “on demand” or “when available” basis.
35		The reader should have full functionality in off-line mode. It should be able to send all events once connectivity is re-established (employees must be able to punch-in/out for shift or break off line).
36		Both the reader as well as the software should be engineered and supported by a single vendor
37	Software / Firmware Updates	Software / Firmware updates should be possible through network / communication Port. To be provided free of cost during lease period.
38	Certifications	CE or UL or EN

2. Technical Specifications of Biometric Smart Card Reader - Type II (For Attendance)

Hardware & Performance Requirement		
1	Description	Fingerprint Biometric and Contactless Smart Card Reader with keypad for providing two-factor authentication by reading the card & comparing the fingerprint template presented to it and marking the attendance.
2		Should be of Plug and Play Type. Should be possible to replace the faulty reader / sensor module without needing to reprogram the control unit.
3		Fault of one reader should not affect the operations of other readers in the network.
4		Reader shall be manufactured using the latest and most accurate state of the art biometric technology and shall support high speed processing
5		Should be able to control the various threshold levels and changes in the sensitivity through software
6		At least 9 button keypad
7		Reader shall be capable to authenticate the valid users in combination with smart card, keypad and biometric and / or separately.
8		Same reader shall be used for marking "IN" and "OUT".
9		The reader should be able to match any of 2 finger patterns
10	Body & Mount Type	ABS/ Polycarbonate / Metallic material; Tamperproof Mounting shall be single gang or Mullion type. Should be suitable for installation on metal surface ; Should be suitable to withstand exterior installations and / or harsh industrial / environmental conditions. Minimum Requirement is IP 55 Protection.
11		Readers to be mounted on 3” dia SS pedestal with SS plate on top of it. Height of pedestal should be 90 cm. Pedestal & Mounting to be provided by vendor. Cost to be built into the the reader
12	Card Type	Card reader shall be capable of reading the selected card technologies (HID iClass / Mifare within 13.56 MHz range). The protocol of data from the reader shall be an open format and non-proprietary.
13	Read Range	Shall have read range upto 5 cm when used with accepted compatible access card technology.
14	Communications	Reader should communicate with central server using TCP/IP protocol over Ethernet or Internet, 10/100 Mbps auto sensing Ethernet with DHCP, SSL, IPv4 and IPv6 Support
15	Fault Detection	In the event of reader failure / malfunction / tempering, it shall be capable of being detected by the server and appropriate alarms shall be generated at workstations / server.
16	A/V Indicators	It shall be capable to provide a unique tone and / or tonal sequence for various status conditions such as attendance marked / denied, access granted / denied, reader power condition etc and clear visual LED indications (Multi-colour) shall be provided for various status conditions.
17	Card Holder Memory	Finger template storage capacity at least 4000 Nos.
18	Event Buffer Size	50000 Nos. with date & time stamp
19	Biometric Sensor Type	500 DPI or better Optical Type Biometric Sensor. Sagem / Bioscrypt / Secugen / Suprema make. Self-contained fingerprint unit should perform enrollment and verification. The system to be Impact resistant, scratch resistant, weather durable and corrosion free.
20		In the case of fingerprint of a particular employee is not authenticating properly, system should be able to work only with smart card for that employee i.e. The terminal should support the ability to support biometric and non-biometric employees at the same terminal

21		Employees, at times, tend to punch more than once in a short span of time not being sure of the previous punch. In order to eliminate this, system should support a "no re-punch" feature which prevents employees from entering several punches in the short span of time
22		It should be possible to configure, manage and diagnose multiple geographically dispersed readers from a central desktop application without custom programming
23		Should have central administration module to manage all readers installed remotely
24	Clock	Shall have built-in RTC Calendar. Should be able to sync the clock with the server.
25	Power	Shall have built-in or external power supply required for internal operations. Should be able to work with 230V single phase power supply.
26	Battery Backup	SMF Batteries for backup of min. 3-4 hours. Should be able to control EM locks also. Lithium battery to maintain data in RAM and supply power for the on-board RTC etc.
27	Battery Refresh	The bidder shall compulsorily replace all the batteries after 3 years and as and when the batteries get faulty during the entire lease period
28	Environmental	Temperature 0 to 40 degree C; 10% to 95% RH non-condensing
29	Template Size	Around 350 bytes
30	Verification Time	Less than 1 second
31	Enrollment Time	Less than 3 seconds
32	FAR / FRR	0.001% FAR; 0.01% FRR in Ideal Conditions
33	Scan Capture Area	13 mm x 13 mm minimum
34	Graphical Display	Backlit graphical LCD display of minimum 60 mm x 18 mm size and 120x32 resolution shall be provided for feedback on biometric read process
35		The solution should be able to download punch information of employees from the readers in real-time. There should be no batch process required. Also, if required, communications with server should be performed at regularly scheduled intervals or preset times, or on an “on demand” or “when available” basis.
36		The reader should have full functionality in off-line mode. It should be able to send all events once connectivity is re-established (employees must be able to punch-in/out for shift or break off line).
37		Both the reader as well as the software for Electronic Attendance System should be engineered and supported by a single vendor
38	Software / Firmware Updates	Software / Firmware updates should be possible through network / communication Port. To be provided free of cost during lease period.
39	Certifications	CE or UL or EN

3. Technical Specifications of Smart Cards		
Specifications & Performance Requirement		
1	Description	Card shall have minimum 4 KB memory and shall employ Mifare or HID iClass platform for storing and accessing data items.
2		Card should be capable of completing any write operation even if the card has been removed from the RF field during the operation.
3		Card shall be laminated and colour coded as per the type of user. Overall card design shall be finalised with successful bidder.

4		Photography, finger print enrolment, card preparation and lanyard attachment shall be in the scope of successful bidder
5		Minimum two fingerprint patterns shall be enrolled and stored in the card / system
6	File / Application Support	Platform shall support upto 28 applications with 32 files per applications.
7	Encryption	Shall support DES, TDES, 3KTDES & AES cryptography. Data inside the card shall be secured with minimum 64 bit encryption so that data can not be modified or accessed until the card and the reader have completed mutual authentication.
8	Material	Card shall be durable, made of PVC and meet ISO 7810 standard for length, width, thickness and construction. Card shall be resistant to alcohol, Fuel, sweat etc. Card shall be capable of accessing a slot punch on one end, allowing it to be hung from a strap or clamp in vertical orientation. It should be capable of direct two sided dye-sublimation or thermal transfer printing so that cardholder information / images shall be printed directly onto card.
9	Standard Compliance	Conformance to 14443A.
10	Frequency	Contactless smart chip operating at 13.56 MHz
11	Others	Smart card shall be supplied with 1 meter lanyard (with BHEL logo preprinted at defined distance intervals) and a solid / rigid plastic card holder with slots for clip or lanyard
12	Warranty	Card shall be warranted against defect in material and workmanship for lifetime.
13	Environmental	Temperature -20 to 55 degree C; 5% to 95% RH non-condensing
14	Additional Cards	Additional cards alongwith preparation, if any will be on the same rates

4. Technical Specifications of Enrollment, Programming, Printing Station Along with Printer & Camera		
Specifications & Performance Requirement		
1	Description	Enrollment station shall be used for various administrative function like creating / deleting system operators and managing their profiles / passwords, hardware management, smart card programming / preparation, fingerprint enrollment, card/user modification, system configurations, photo badging & smart card printing, system archiving etc.
1.1		Each enrollment station shall include an imaging printer, fingerprint enrollment kit, smart card encoder/programmer, digital photo camera & photo card preparation module, relevant software. System shall share a common database as of Electronic Attendance System. The user interface shall be similar in look and feel to other modules of Electronic Attendance System.
1.2		Photo card preparation module shall include a complete design and layout tool. The design and layout tool shall make use of WYSIWYG editor including drag and drop placement.
1.3		Software adjustable controls like hue, saturation, brightness, contrast, offset and gain shall be controllable through the application.
1.4		Module should be capable of using industry standard direct to PVC dye diffusion thermal transfer printer for production of ID cards.
1.5		It should be possible to import previously captured images

1.6		Two fingerprint per employee shall be registered and stored in system / card.
2	Encoder / Programmer	Card Compatibility: Mifare or HID iClass
2.1	Encoding Time	Less than 3 seconds
2.2	Interface	USB
3	Fingerprint Sensor Type	Biometric sensor shall be optical type of Sagem / Bioscrypt / Secugen / Suprema make.
3.1	Scan Capture Area	13 mm x 13 mm minimum
3.2	Frequency	13.56 MHz
3.3	Certifications	CE or UL or EN
4	Card Preview and Printing	Operator should be able to print the card on the printer after image has been accessed and layout selected. It should have print preview option before printing.
5	Base Station	HP / Dell / Lenovo / HCL / Acer
5.1	Processor	Intel Core i5 - 3470 (3.2 GHz Base Frequency, 6 MB L3) or better
5.2	Chipset	Intel Q77 or better
5.3	Memory	6 GB or higher Dual Channel DDR3 SDRAM @ 1066 MHz or Better
5.4	HDD	500 GB SATA or higher 7200 rpm with Pre Failure Alert
5.5	Graphics Card	Professional 3D Graphic Card (NVIDIA or ATI Firepro) with 512MB Memory
5.6	Optical Drive	16X or more DVD+/-RW SATA
5.7	Ethernet	Integrated (on-board) 10/100/1000 Mbps RJ45 port with WOL, PXE & ASF (Alert Standard Format) 2.0 OS independent software to monitor & analyse network connection
5.8	Ports	Minimum 1 Serial, 6 USB (Ver 2.0), VGA, Speaker, Microphone, Headphone
5.9	Monitor	24" TFT (OEM make) with Aspect ratio 5:4 and min. resolution of 1280*1024 TCO compliant
5.10	Keyboard / Mouse	Standard USB/PS2 Keyboard & Scroll Mouse
5.11	OS	Windows 7 Professional 64bit with latest service pack, Restore / Recovery CD & with OS media CD with each station (in absence of OS Media CD OEM pack of OS to be supplied), a software to provide data recovery to restore user data, settings, applications and Operating System in the event of a software crash or virus infection. The latest system drivers should be available on OEM's website for the entire lease period.
5.12	Hardware Diagnostic	OEM's Diagnostic tool for hardware diagnostics
6	Card Printer	High Definition - Dye Sublimation / Resin Thermal transfer; 300 dpi Print Resolution; 16.7 million colour or better; Print Speed 30 seconds for CMYKO (Cyan, Magenta, Yellow, Black, Overlay) printing; Washable, Replaceable card cleaning rollers; CR80 (2.125" H x 3.375" W) Card Stock; Print within 2mm of Card Edge; Card Hopper Feeder with 100 Card Capacity; Simultaneous Dual Sided Lamination; 2 GB RAM Capable of buffering cards queued for printing; Latest Windows 32/64 bit drivers
6.1	Print Cartridges	Sufficient number of cartridges to prepare Smart Cards as mentioned in the tender scope
7	Digital Camera	12 Mega Pixels 5X Optical Zoom Professional Digital Photo Camera of Reputed Make
8	Signature Pad	Digital Signature Pad & Pen along with compatible software for digitizing employee signature, USB Interface
9	Unicode Compatibility	System should be Unicode compatible so that entries can be made in Hindi also

10		Photography, finger print enrolment, card preparation and lanyard attachment shall be in the scope of successful bidder

5. Technical Specifications of Flap Barrier		
Specifications & Performance Requirement		
1	Description	Waist Height Retractable Flap Barrier including EM Locks controlled using Biometric / smart cards, Electronically operated, silent & maintenance free in operation, adjustable timeout feature. Continuous duty cycle. Modular with Single / Multiple lane setup. Shall support normally open mode operation.
2	Material	304 Grade Stainless Steel Arm Dia 35 mm MAT finished Body. Colourless Tempered Safety Glass (Min 10 mm thickness) flaps for Heavy Duty Use, Dual Flap Arms
3	Passage Width	500-600 mm
4	Safety	Sensors to detect person in safety zone; Fully retract in case of power failure / emergency.
5	Configuration	Configurable in both or one direction in fail-safe or fail-lock in the event of power fail or during emergency
6	Interface	Suitable Control logic with one input for opening / locking the mechanism in each direction; two relays indicating availability of use in either direction; two output to count passage in either direction
7	Card Reader Compatibility	Provision for embedded (Flush) mounting of two readers one on each side for attendance and access control
8		Should not allow a person to pass from opposite direction. For example, if a person shows card from the entry side and another person from the opposite side tries to exit than the flaps should immediately close, thus blocking the passage.
9		Anti Tail Gating Feature
10		Anti Crash Sensors
11		Indicator Lights of different colours for various states
12		Same barrier should be able to work from both directions i.e. IN and OUT
13	Opening/ Closing Time	Less than one second
14	Standards	CE or UL Approved, EN 61010-1, IEC 1010-1
15	Interface	Opto-Isolated Inputs & Outputs for Interfacing External Devices

6. Technical Specifications of Servers		
Specifications & Performance Requirement		
1	Mounting	Rack
2	Height	Max 2U
3	Processor	Intel Xeon Quad Core 5630, 2.53GHz, 5.86GT/sec QPI with 2 nos. processors populated
4	Chipset	Intel 5500 family chipset
5	CPU Cache	12MB L3 Cache
6	RAM	24GB DDR3 1066 MHz expandable to 48GB.
7	Extension Slots	4 or more PCI-X / PCI-Express slots (with at least 2 PCI-E x8 slot for SAN connectivity)
8	HDD	6 x 146 GB or higher SFF hot Pluggable SAS 10K rpm
9	DVDROM	8x or higher DVD-CDRW Combo Drive
10	Raid Controller	2 Nos. of 3G SAS RAID Controller, each with 256 MB battery backed cache

11	LAN Card	2 Nos. of separate 10/100/1000 Ethernet Cards each with 2 ports (with at least 1 card on board)
12	Power Supply	Should come with Hot Pluggable & Redundant Power Supplies
13	Fans	Hot pluggable redundant fans
14	OS & Database	1) MS Windows 2012 Standard or Latest 2) Commercial Grade Licensed Database Software matching above hardware and as per software requirements.
15	Certifications	For OEM : ISO 9001 (Latest version); ERTL/FCC-EMC Class A or Class B; Latest version of IEC-60950-1 / IS 13252 / UL-60950; ACPI (Latest Version) compliant; RoHS compliant

7. Technical Specifications of Self Service Kiosk		
Specifications & Performance Requirement		
1	Enclosure	Durable Floor Mounted Rugged Steel Enclosure with Powder Coat Finish. Enclosure should be lockable with Front / Rear Access Doors
2	LCD Monitor	19" Touchscreen LCD Monitor with Aspect Ratio 5:4 or 4:3
3	Keyboard	Rugged Keyboard with Trackball Suitable for Industrial Use
4	Fans	Cooling Fan
5	Power	230 V AC Power Input with 6 Port AC Power Distribution Strip
6		Adjustable Leveling Legs for Adjustment on Uneven Floor Surface
7	Fingerprint Scanner	Built-in Biometric Fingerprint Scanner
8	Smartcard Reader	Build-in Smart Card Reader
9	**PC Specs**	
9.1	Processor	Core-i5-3470 (Base Clock Speed 3.2 GHz, 6MB L3 Cache) or Higher
9.2	Motherboard	Motherboard and FRU should be OEM make only
9.3	Chipset	Intel Q77 or Better
9.4	RAM	4GB Dual Channel DDR3 1333 MHz expandable to 8 GB
9.5	HDD	500GB SATA 7200 RPM or higher with pre-failure alert
9.6	Ethernet	Integrated (on board) 10/100/1000 Mbps RJ45 port with WOL, PXE & ASF (Alert Standard Format) 2.0 OS independent s/w to monitor & analyse n/w connection. Network Port Outlet on Kiosk
9.7	Software	Windows 7 Professional 64 bit with latest service pack, Restore / Recovery CD & with OS media CD with each kiosk (in absence of OS Media CD, OEM pack of OS to be supplied) The latest system drivers should be available on OEM's website for the entire lease period.
9.8	Form Factor	Micro ATX Desktop
9.9	Diagnostic Tool / Software	OEM's Diagnostic tool for hardware diagnostics
9.10	Certifications	OS Certification from Microsoft For OEM : ISO 9001 (Latest version) ERTL / FCC - EMC class B Latest version of IEC-60950-1 / IS 13252 / UL-60950 ACPI (Latest Version) compliant RoHS compliant Energy Star 5.0 compliant
10	Cable Management	Cable Management for Easy Cable Routing
11	Warranty	OEM warranty for the entire contract period

8. Time & Attendance System Software

Specifications of Software		
1		The proposed solution should be completely integrated time, leave and scheduling system. Solution should be enterprise-wide and should be completely web based. The key components include: - Time Collection devices - Time Management linked to time devices providing real-time visibility into workforce - Leave and Absence Management - Scheduling, Shift Management - Reporting and Analytics - Overtime Calculation - Shift Allowances - Holiday Management - Compensatory Off
2		Each employee should be able to check following details after proper authentication: - Checking Roster - Checking Punches - Check Attendance Details - Check Leave Balance - Apply for Leave
3		Proposed solution should have the capability to run reports like on premise and exceptions in real time. In order for the reports to run in real-time the readers should be able to push punches into the software in real time
4		The Solution should have multi-tier web based architecture and centralized architecture. There should be no installation on any other PCs to run the system.
5		Different stakeholders in the organisation would want to run different set of reports and analysis. Hence the system should have the ability to define various roles like Manager, Supervisor, IR, HR, Management etc so that exception and attendance reports can directly be run by concerned stakeholders anytime on their PC for the employees they manage. For e.g. Department heads should be able to run reports on their desktops for their employees. System should have the capability of Adhoc reporting requirement. Some of the reporting requirement is listed in annexure IV.
6		The software should have the capability to record leaves taken by employees which should then update the schedules and timesheet of employees.
7		Proposed software have complete audit trail capabilities of changes made to employee's timecard including information on who made the changes and when.
8		**Unified view of the employees**: The system should provide an unified view of the employees to HR and Managers. The unified view should contain the time sheet, the roster/schedule and leaves taken by the employees all in one screen.
9		The proposed time and attendance system will have to integrate with the existing ERP and payroll systems so system should have a certified adapter with ERPs like SAP. Also the proposed system should have a native integration tool to build interfaces to other legacy systems.

10		The attendance software should have a central management module to manage all the attendance readers deployed across all the locations.
11		Communications with server should be performed at regularly scheduled intervals or preset times, or on an “on demand” or “when available” basis.
12		Allow reader software / firmware upgrades by means of downloading software / firmware from a network or over modem
13		The system should have the capability for the organization to manage as per their requirements the following exceptions at a minimum:
		Late in
		Early In
		Late out
		Early out
		Unauthorised Absenteeism
		Missed In Punch
		Missed Out Punch
		Very early IN
		Very Late OUT
		Unscheduled
14		The system should be able to generate configurable exception report in real time
15		System should provide the ability to adjust or correct time / leave entries paid for previous pay periods – Historical entries.
16		Provide the ability to automatically calculate overtime for an employee based on rules defined in the system
17		The solution should provide the option to restrict entries to inactive/terminated / retired employees on the attendance readers as well as access control readers
18		The solution should provide the ability to view future exceptions (e.g. vacation or other leaves of absence).
19		Solution should provide facility to attach comments to identify reasons for the manual change (i.e. duplicate, missed punch, etc)
20		Provision to add Employee wise weekly offs
21		All the regular employees should have the ability to apply for leave online
22		The system should have a workflow tool available that routes the application request to the manager for approval
23		The system should enforce applicable leave rules when an employee is applying for leave.
24		When an employee applies for leave the system should provide the ability to validate leave balances real-time at the point of entry.
25		Provide the ability to send time-based escalations or reminder notifications for a given task in a leave request & approval process
26		The leave engine should allow for setting up minimum or maximum number of leave days that can be taken at a time
27		System should have the capability to define overdraft leave limits
28		System should have the capability to provide reports on leave usage.
29		System should allow for creation of any number of leave types
30		Carry forward rules and lapse rules should also be configurable in the system.
31		System should have the capability to set probation periods.

32		Proposed software should have a flexible and easy to use (excel like) scheduling engine that should be able to take care of all scheduling requirements of BHEL and have the ability to build unlimited shift schedules and patterns. Some of the important capabilities required of the solution are mentioned below:
33		The scheduling tool in a single glance should provide information to the managers like:
		Number of employees rostered
		Employees on leave for the duration being viewed
34		In order to make it easier for managers the system should provide the capability to assign mass schedules to a group of employees in one go.
36		The schedule once created and saved should automatically be available in the time card of the employee.
37		Shift Management
		Ability to add new shifts (No upper limit)
		Ability to deactivate existing shifts
		Ability to edit shift information
		Ability to change shifts
		Ability to allocate shift for future
38		Provision to create unlimited shift patterns like AB, ABC, BAC, CAB etc
39		Provide the ability to schedule shifts that cross multiple days (e.g. start at 6:00 p.m. on day one and complete at 2:00 a.m. on day two).
40		Provision to create shift patterns of varying durations like weekly, monthly, fortnightly, daily or any other adhoc duration
41		Allow schedule shift patterns to be automatically repeated, or rolled forward to future weeks
42		The solution should Support for remote and non relational data sources
43		The solution should support key extensions such as HTML, Excel, PDF, Word, Image, XML, CSV rendering extensions.E-mail and file share delivery extensions
44		It should support report Scheduling and delivery of scheduled reports either through e-mail or file system share
45		It should support Report caching, Report history for better performance
46		It should support ad-hoc reporting
47		It should support Visualization tools such as maps, gauges, and charts, indicators
48		The system should be accessible to all regular employees based on their rights over the web by entering a user id and password.
49		Department/Location based logins should be available
50		Ability to Create/Edit users in the system.
51		Provision for giving selective user rights
52		Logout functionalities
53		Transmissions from the web-based application are kept secure through SSL
54		It should be possible to use same reader for both IN as well as OUT in multi-shift environment on 24x7 basis i.e. in same workplace there may be different shifts going on and logic to be built based on shift timings of a particular employee / group of employees
55		Fingerprints enrollment shall be an integral part of system. Each cardholder can have up to 2 stored finger templates

56		Each cardholder can have a Personal Identity Number (PIN) to be used on readers with keypad.
57		The software should check the status of the readers / controllers on regular intervals. (Online / offline)
58		Software alongwith customisation code / objects / libraries shall be handed over to BHEL. BHEL will be free to modify and use software as it may deem suitable for its internal use.

9. Technical Specifications of Access Control Software		
Specifications of Software		
1		software should be able to capture employee swipe transactions both for in-swipe and out-swipe and transfer the data to server for further processing.
2		The Software should be web based so that the administrator / operator / user can access the software console from any location within BHEL Network.
3		The software should have the capability to integrate with the existing HR, Payroll and SAP-HR Systems
4		The software shall be modular in nature and easily expandable without any hardware/software limitations.
5		The software shall support many Clients / Workstations with all functionality available from client / workstation on the network
6		The software shall utilize a single seamless integrated relational database for all functionality.
7		The data archival and back up shall be part of the system architecture and process.
8		The software shall support Microsoft Windows XP/ 2003/ 2008/Win 7 operating systems.
9		The software shall be expandable to support an unlimited number of field devices.
10		The software should be having the below mentioned features integrated and seamlessly connected to each other: 1) Access Control System from Day one 2) Time & Attendance System from day one 3) Option of Integration with CCTV and fire alarm 4) Option of Visitor Management System Module 5) Alarm Monitoring
11		The software shall support a fault tolerant server and redundant database architecture. In the event of a server failure, the system shall automatically switch over to a backup server from the primary server without impeding the operation of the software.
12		The software shall support an import utility that provides importing of cardholder information into the database in any format compatible with ODBC (Excel, MDB, etc.)
13		The software should be able to do Bulk Employee Addition
14		The software should store Photographs for each employee.
15		The software shall allow data to be imported or exported in real time or as a batch operation.

16		Software shall support central monitoring and control. If communication to the central control fails, readers shall continue providing access based on the predefined security configuration. Until communication is regained, all event logs and alarms shall be stored locally (based on reader / controller capacity). These events shall be sent to the central server when the communication is regained.
17		All data over the network between the reader / controller and the server shall be encrypted if required.
18		All software/firmware upgrades shall be downloadable through the network to the reader / controller.
19		There can be multiple operators/administrators with hierarchal controls. System should be accessible only after valid authentication.
20		The system should include an advanced report wizard enabling the user to issue reports for logged events, alarms and all system components: controllers, readers, access groups, cardholders, time, date etc. Reports should support filter by any field. All reports should support export to external files in known formats like MS Excel, CSV, etc
21		Operator should be able to add and correct missing IN/OUT access events.
22		Local and global Anti Passback feature should be available.
23		Each cardholder should be validated / invalidated for a given period by setting the start date and end date. The system shall automatically update the database and the controllers within 30 minutes (default) of the relevant change.
24		It shall be possible to assign one or more access groups for each cardholder.
25		The system shall support the following options: Card + Finger, Keypad code + finger, Finger only, Smart Card (fingerprint template data stored only on the smart card chip), One / many templates per employee
26		There should not be any transaction loss.
27		Required backend enterprise database software shall be supplied alongwith server hardware. Cost of the same shall be included in the server hardware.
28		The solution should be Enterprise wide
29		Software alongwith customisation code / objects / libraries shall be handed over to BHEL. BHEL will be free to modify and use software as it may deem suitable for its internal use.
30		**Various other system requirements are listed in details at Annexure IV.**
31		Changes in business rules / new requirements, if any will be specified later.

10. Technical Specifications of Guide Railing		
Specifications & Performance Requirement		
1	Description	Tubular, self supporting, modular system expanded through flanges & connectors in 0, 45, 90 degrees, left/right modes with safety glass infill panels or lower bar
2	Material	304 Grade Stainless Steel
3	Mounting	Finished Floor Surface
4	Tube Dia	More than 40 mm
5	Height	Same as of barriers

11. Technical Specifications of Miscellaneous Items

Specifications of UTP Cable / RJ45 Connectors		
Make	AMP/ Systimax/ Avaya/ Molex/ Panduit	
1	Cat 6	Should meet minimum Category 6 requirements
2	Type of Conductors	4 Pair 23 AWG Conductors
3	Frequency	Characterised to 250 MHz
4	Standards	TIA/EIA 568B, ISO Class E 11801-2002
5	Gigabit Requirements	Should meet or exceed Gigabit Ethernet Requirements at 100 meters
6	Connectors	Same make as of Cable
Specifications of PVC Conduit		
Make	AKG or Equivalent	
1		1" PVC Pipe, Medium Strength. ISI Mark
Specifications of MS Pipe		
Make	AKG or Equivalent	
1		1" MS Pipe, Medium Strength, ISI Mark, Minimum Wall Thickness 1.6mm
Specifications of Power Cable		
Make	**Anchor / Finolex / Havells / Polycab / RPG**	
1		3 Core Multistrand Flexible Copper Power Cable of size 1.5 Sqmm Suitable for Connecting readers / controllers / barriers

Annexure IV

System Description & Business Rules

About Organisation

BHEL is the largest engineering and manufacturing enterprise in India in the energy-related/ infrastructure sector. Two power equipment manufacturing plants of BHEL are situated at Ranipur near Haridwar. On the northern side is the Heavy Electrical Equipment Plant (HEEP), engaged in the manufacturing of power generation and utilization equipment. Located immediately to the south of HEEP is the Central Foundry Forge Plant (CFFP) for the production of alloy steel castings and forgings required to complete the production profile of' BHEL.

Main Administrative building, Old Engineering building, New Engineering Building, IT Building and Telecom building of HEEP plant are outside the plant area. Boundary of HEEP and CFFP plant is common.

There are total five gates to the plant area namely HEEP Main Gate, CFFP Gate, Material Gate, Western Gate & Fire Gate. Regular employees are permitted to enter / exit from any of the gates but contract labour is restricted to enter / exit through HEEP gate and CFFP gate only.

All buildings and offices in plant area are well connected through robust 10 Gbps backbone LAN.

Since BHEL maintains its own township, there are main hospital building, sector maintenance offices, sector dispensaries and other offices spread across township area. These buildings / offices are connected to main network using Fiber / ADSL technology.

Present Setup

Personnel of Central Industrial Security Force (CISF) are manned at gates of buildings and plant area on 24x7 basis for security of the plant and to prevent unauthorized entry.

There are two type of employees; regular employees and contract labour. Employee comes in roster duty in multi-shift basis in plant area and areas marked as essential services. In other buildings / areas, employees come in single shift only.

Regular employees mark their attendance in the attendance register available in respective offices.

An online visitor management system has been implemented in which after due authorization, CISF issues the photo based visitor gate pass to visitor. Visitor is supposed to surrender this pass to CISF after his / her visit is over.

Proposed Setup

Annexure IV

BHEL wishes to implement Electronic Attendance System for all its employees (regular as well as contract labour) and Electronic Access Control Cum Attendance System at important buildings namely Main Administrative building, Old Engineering building, New Engineering Building, IT Building and Telecom building.

At present, for contract labour, proximity biometric readers are installed at HEEP & CFFP gates. It is proposed to replace this hardware with new biometric smart card readers.

The New Solution should have the following capabilities

- Smart card based identity cards will be issued to all employees.
- The proposed solution should be completely integrated time, leave and scheduling system. The key components include:
    - Time Collection devices i.e. readers
    - Time Management linked to time devices providing real-time visibility into workforce
    - Leave and Absence Management
    - Scheduling
    - Reporting and Analytics
- An integrated time and attendance solution is of critical need to the shop floor and the shop floor needs real-time visibility into workforce availability. Hence the proposed solution should have the capability to run reports like on premise and exception in real time
- Biometric Smart card based identity cards will be issued to all employees. Employee will swipe the card and show finger for biometric punch authentication at designated places.
- It should be possible to restrict employee to mark attendance at designated readers only. The data so recorded shall be used for payroll as well as generating various management information reports.
- It should be possible to use same reader for marking the attendance as IN as well as OUT in multi-shift environment of 24x7 basis.
- The proposed solution should also have easy to use interface for employees to do transactions like
  - Check Roster
  - Check punches
  - Check attendance details for current month
  - Check leaves balance
  - Apply for leave
- Software logic should be built by defining the shift timings of employees / group of employees and mapping of swipes of employees and designated shift.
- Unified view of the employee: The system should provide a unified view of the employees to HR and Managers. The unified view should contain the time sheet, the roster/schedule and leaves

taken by the employee all in one screen. This will make it easier for the stakeholder to take an informed decision. Apart from time, leave and schedule the unified view should also contain the various allowances like overtime that the employee is eligible for the concerned duration.

- It is critical that the system has a certified adapter with ERPs like SAP, Oracle. Also the proposed system should have a native integration tool to build interfaces to other legacy systems.
- Employees will mark punch which system will understand as their IN / OUT by swiping the card four times (including lunch / dinner breaks) and biometric.
- Only authorized employees shall be given access in building where Electronic Access Control system has been envisaged.
- Flap barriers shall be operated using smart cards and give access after due authentication.
- Employee can enter through any barrier and leave through any other barrier. This should be permissible, however, permissions for entry /exit should also be restricted as per business rules.
- . The offered Software shall have the features to generate various reports like late entry, late out, absenteeism, etc. The software should have online and batch reporting functionality. Software should also have adhoc reporting capability

Some employees may have worn out fingerprints. Such employees should be able to mark attendance by showing the smart card only from the same reader, which is used for marking the attendance of other employees with dual authentication i.e. fingerprint as well as smart card.

Logic for different shifts, change of shifts, overtime bookings and permissions for attendance, Specific area restrictions, special permissions, allowed hours, permissions for exit etc will be discussed and finalized at the time of placement of order. Some of the requirements are listed later in this document.

In case an employee forgets his card, system should be able to match the finger print pattern with those stored in the server and permit access to the employee.

Shift and Swipe Timings

Shift Timings

Some of shift timings are as follows:

Plant Area

a. A Shift: 07:00 To 16:00 Hrs. (Lunch Time: 12:00 To 13:00)
b. B Shift: 16:00 To 00:30 Hrs. (Dinner Time: 20:00 To 20:30)
c. C Shift: 23:00 To 07:00 Hrs. (No Break)

Engineering building, ITX, Telecom and Main Administrative building

a. 08:00 To 17:00 Hrs. (Lunch Time: 12:00 To 13:00)

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Roster Duties for Essential Services

a. 06:00 To 14:00 Hrs. (No Break)
b. 14:00 To 22:00 Hrs. (No Break)
c. 22:00 To 06:00 Hrs. (No Break)

Medical Services

a. 8:30 AM to 5:30 PM (Break 1:00 PM to 3:30 PM)
b. 8:00 AM to 6:30 PM (Break 11:30 AM to 4:00 PM)

Swipe Timings

Valid swipe timings will be as follows:

a. Shift start IN Swipe Time will start 30 minutes before shift start time and end with 10 minutes grace period from shift start time
b. Shift end OUT Swipe Time will start 05 minutes before shift end time and end with 60 minutes grace period from shift end time
c. Lunch / Dinner OUT swipe time will start 05 minutes before lunch / dinner start time and end with lunch / dinner end time
d. Lunch / dinner IN swipe time will start 30 minutes before lunch / dinner end time and end with 1 Hr. from Lunch / dinner OUT time.

For Example:

A Shift: 07:00 To 16:00 Hrs. (Lunch Time: 12:00 To 13:00)

Valid Shift start swipe IN**:** 06:30 To 07:10 Hrs.

Valid Shift End swipe OUT: 15:55 To 17:00 Hrs.

Valid Lunch OUT time: 11:55 To 13:00

Valid Lunch IN time: 12:30 To 14:00.

Swipe other than valid swipes for a particular shift will render as invalid swipe. Regularization of invalid swipes shall be done by designated operators / managers.

Buildings Where Electronic Access Control Cum Attendance System is to be Implemented

Some important buildings, which are located outside the plant area, will be covered with Electronic Access Control Cum Attendance System so that unauthorized entry can be prevented. Flap barriers with biometric smart card readers will be installed at the entrance of following buildings:

1. Main Administrative Building
2. IT Building
3. Old Engineering Building
4. New Engineering Building
5. Telecom Building

Attendance / exit will be marked for employees working in these areas by showing the identity card. Free movement access may be given to employees working in other areas on need basis as these employees will mark the attendance at their workplace.

A separate flap barrier in each building will be marked for contract labour for ease of maintenance of database.

Readers will have keypad facility so that irregular movement (other than shift start / end time) can be properly recorded.

CISF personnel will be issued a master card to allow access to visitors and others to whom smart card is not issued. All such access will be recorded.

Buildings / Plant Area Where only Electronic Attendance System is to be implemented

Employee working in plant area will enter the plant premises by showing their identity cards to CISF. Biometric Smart Card Readers will be installed at respective workplaces. Employee will mark their attendance at workplace by showing the smart card and fingerprint.

These readers will be operative in designated swipe timings only. Readers will have keypad facility so that irregular movement (other than shift start / end time) can be properly recorded.

Electronic Attendance System for Contract Labour Working in Plant Area

Contract labour can enter the plant area through HEEP gate and CFFP gate only.

Smart card readers will be installed at these two gates so that contract labour can enter / exit through these gates after marking the attendance.

These readers will be operative in designated swipe timings only.

Special Permissions

1. Personal pass: max. 2 Hrs. per day, total 6 Hrs. in a month, max. 5 slots per month. shift start swipe required
2. Official pass: max. one working day, shift start swipe required
3. Medical pass: max. one working day, shift start swipe required

4. Training pass: max. one working day, shift start swipe required
5. Sports/cultural pass: max. two hours per working day, shift start swipe required
6. Union pass: max. one working day, shift start swipe required
7. Special movement pass: max one working day, shift start swipe required.
8. DGM & above are allowed free movement as per present practice, shift start swipe required.

Following features / details should be available in the system:

1. Employee details
2. Shift details
3. Shift category details
4. Division & Department details
5. Work Centre details
6. Leave type details
7. Holiday details
8. Pay scale, Personnel Classification details etc
9. Pay month master
10. Union details
11. Special movement pass details
12. Sports movement details
13. User details and administration
14. Downloading reference data like shifts, invalid cards, employee details etc to system
15. Recycling shifts and modifications
16. Capturing swipes data
17. Regularization of missing swipe entries, On Duty (OD), shift changes, late/emergency entries, and early exit.
18. Maintenance of leave posting, conversions, cancellation, leave balances, leave encashment
19. Extended hours posting, Overtime (OT) postings
20. Extra hours availment – OT, Adhoc payment, compensatory off
21. Daily processing of swipe data
22. Monthly processing of attendance data for payroll
23. Half year leave crediting
24. Monthly leave balances
25. Suspension/revoking of employees
26. Card loss/issue of new card.
27. MIS requirements for shop floor managers.
28. Extended hours file transfer
29. Daily transfer of swipes data for enquiry
30. Weekly transfer of attendance, leave balances for enquiry
31. Different report/enquiries

Reports

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The following reports should be available for a given period (daily/ weekly/ monthly/ quarterly/ half-yearly/ yearly) or on demand. The output should be seen on the screen, sent to a file or a printer.

1. Daily irregular attendance (swipe data) report
2. Weekly attendance report
3. Unregularized Absence Report
4. Monthly Absence report
5. List of Employees with shift mismatches
6. Department-wise late comers
7. Department-wise Absence report
8. Department/Employee-wise early exit statement
9. Department/Employee-wise continuous absence for more than 15 days
10. Division/shift wise attendance report
11. Monthly strength and Absence ratio
12. Division/Department-wise habitual late comers
13. Different Pass Related Reports
14. Continuous Extra Ordinary Leave (EOL) / Absences for more than 120 days
15. Reader wise swipe count for a given day
16. Barrier wise swipe count for a given day
17. Attendance Report for a day
18. Division wise attendance for a day
19. Absentees for a day
20. Statement of swipes for a given day
21. Late/Absence report for a given date
22. Check list of shift schedule for a month
23. Employee type wise list of movement on passes
24. Statement of extra hours recorded
25. Regularization of union & other on duty
26. Leave balances for final settlement
27. Half yearly leave crediting
28. ELs used more than 5 spells
29. Un-Regularized Absence/EOL during previous 6 months or more than 15 days
30. Employees who have availed compensatory off
31. Women employees who availed maternity leave
32. Male employees who availed paternity leave
33. Summary of report for habitual late comers
34. Report on employees on Rolls and Absence
35. Report on OT hours posting/Adhoc hours booking
36. OD regularization report.
37. Report on total number of employees, working days, absent days, including authorized leave, unauthorized absent leave.
38. Report on present, leave, absent (total employees/ category wise/ shift wise)
39. Report on percentage of availability

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40. Reports on Man-days availability
41. Movement of Employees details
42. Each employee should be able to see his / her swipe and authorization details in read-only mode after proper authentication through web based interface.
43. Different reports on user demand

Annexure V

Technical Pre-Qualification Criteria – Compliance Sheet

Note

- The vendor shall state in the "Compliance" column Y (yes) or N (no).
- **Wherever specific documents / proofs are required, the same shall be given by the vendor without fail.**

Technical Pre qualification Criteria		Compliance (Y/N)	Remarks
Sr. No	**Description**		
1.	The bidder should be either OEM of readers who is willing to undertake total scope of work or an authorized system integrator of the OEM of readers having direct purchase and support agreement with OEM. Authorization certificate from OEM to be submitted along with the bid. The Certificate / Authorization Letter specific to this tender must be enclosed with the Technical Bid, without which the offer shall be liable for rejection.		
2.	Bidder shall be system integrator of similar enterprise setups for last 3 years. Proof to be submitted.		
3.	Bidder shall have experience in executing AMC contracts of similar setups for last 3 years. Proof to be submitted.		
4.	The Bidder should have successfully executed similar projects during last 5 years in any one of the following: a. Three setups of minimum 2000 employees in industrial setups Or b. Two setups of minimum 3000 employees in industrial setups Or c. One setup of minimum 5000 employees in industrial setups. The executed work under consideration should be of total Solution and Infrastructure Setup, which should include cable laying and system integration.		

	Proof to be submitted.		
5.	The bidder should be ISO9001 certified as per Global Standards. Proof to be submitted.		
6.	Bidder should have PF no./ESI no./Medical policy for executing the contract. Proof to be submitted.		
7.	OEM of readers shall have Registered Office and Technical Assistance / Service Centers in India. Proof to be submitted.		
8.	Bidder should have sound financial position in the market and should be earning profit since last three years. Bidder shall submit financial statements for the last three years duly audited.		
9.	Bidder should not be in the delist category or under hold for business dealings with HEEP, BHEL Haridwar, or is under ban for business dealings with any Unit / Division / Office of BHEL.		

Technical Specifications Compliance Sheet		
Note	1	The vendor shall clearly state the make and model of each item in the specified columns. Vendor shall quote only one make and model against each item.
	2	The vendor shall state in the "Compliance" column Y (yes) or N (no).
	3	Wherever specific values / ratings are desired, the same shall be given by the vendor.
	4	Various features mentioned in technical specifications should be supported in the quoted products at the time of bidding.
	5	All the specifications complied by the bidder should be verifiable through OEM's web site. Also, vendor must ensure that relevant technical brochures for each product specifying the technical features, specifications and ratings are positively enclosed.
	6	After submission of technical bid, BHEL may ask for presentation of technical solution, demonstration of the quoted products and / or site visit where similar system has been implemented by bidder.

1. Technical Specifications of Biometric Smart Card Reader - Type I (For Access Control & Attendance)

Make				
Model				
Hardware & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Description	Fingerprint Biometric and Contactless Smart Card Reader with keypad for providing two-factor authentication by reading the card & comparing the fingerprint template presented to it; Marking the attendance and/or actuating the barrier. Hardware should match the requirement of access control software.		
2		Should be of Plug and Play Type. Should be possible to replace the faulty reader without needing to reprogram the control unit.		
3		Fault of one reader should not affect the operations of other readers in the network.		
4		Reader shall be manufactured using the latest and most accurate state of the art biometric technology and shall support high speed processing		
5		Should be able to control the various threshold levels and changes in the sensitivity through software.		
6		At lease 9 button keypad		
7		Reader shall be capable to authenticate the valid users in combination with smart card, keypad and biometric and / or separately.		
8		The reader should be able to match any of 2 finger patterns.		

9	Body & Mount Type	ABS/ Polycarbonate / Metallic material; Tamperproof Mounting shall be single gang or Mullion type. Should be suitable for installation on metal surface ; Should be suitable to withstand exterior installations and / or harsh industrial / environmental conditions. Minimum Requirement is IP 55 Protection. Readers to be mounted on body of flap barriers.		
10	Card Type	Card reader shall be capable of reading the selected card technologies (HID iClass / Mifare within 13.56 MHz range). The protocol of data from the reader shall be an open format and non-proprietary.		
11	Read Range	Shall have read range upto 5 cm when used with accepted compatible access card technology. Specify range.		
12	Communication with flap barrier	Reader shall communicate directly with flap barrier to actuate the barrier. If reader is not capable of directly communicating with the flap barrier, then external relay or controller can be provided in-between to actuate the barrier. Cost of relay or controller, if any, shall be built into the reader itself. Cost of signal cable connecting reader / relay / controller / flap barrier shall also be built into reader. Specify the methodology for system will be implemented.		
13	Communications	Reader should communicate with central server using TCP/IP protocol over Ethernet or Internet, 10/100 Mbps auto sensing Ethernet with DHCP, SSL, IPv4 and IPv6 Support		
14	Fault Detection	In the event of reader failure / malfunction / tempering, it shall be capable of being detected by the server and appropriate alarms shall be generated at workstations / server.		
15	A/V Indicators	It shall be capable to provide a unique tone and / or tonal sequence for various status conditions such as attendance marked / denied, access granted / denied, reader power condition etc and clear visual LED indications (Multi-colour) shall be provided for various status conditions.		
16	Card Holder Memory	Finger template storage capacity at least 4000 Nos. Specify Capacity.		
17	Event Buffer Size	50000 Nos. with date & time stamp. Specify Capacity.		
18	Biometric Sensor Type	500 DPI or better Optical Type Biometric Sensor. Sagem / Bioscrypt / Secugen / Suprema make. Self-contained fingerprint unit should perform enrollment and verification. The system to be Impact resistant, scratch resistant, weather durable and corrosion free. Specify make of sensor and dpi		

19		In the case of fingerprint of a particular employee is not authenticating properly, system should be able to work only with smart card for that employee i.e. The terminal should support the ability to support biometric and non-biometric employees at the same terminal		
20		Employees, at times, tend to punch more than once in a short span of time not being sure of the previous punch. In order to eliminate this, system should support a "no re-punch" feature which prevents employees from entering several punches in the short span of time		
21		It should be possible to configure, manage and diagnose multiple geographically dispersed readers from a central desktop application without custom programming		
22		Should have central administration module to manage all readers installed remotely		
23	Clock	Shall have built-in RTC Calendar. Should be able to sync the clock with the server.		
24	Power	Shall have built-in or external power supply required for internal operations. Should be able to work with 230V single phase power supply.		
25	Battery Backup	SMF Batteries for backup of min. 3-4 hours. Should be able to control EM locks also. Lithium battery to maintain data in RAM and supply power for the on-board RTC etc.		
26	Battery Refresh	The bidder shall compulsorily replace all the batteries after 3 years and as and when the batteries get faulty during the entire lease period		
27	Environmental	Temperature 0 to 40 degree C; 10% to 95% RH non-condensing		
28	Template Size	Around 350 bytes		
29	Verification Time	Less than 1 second. Specify Time.		
30	Enrollment Time	Less than 3 seconds Specify Time.		
31	FAR / FRR	0.001% FAR; 0.01% FRR in Ideal Conditions		
32	Scan Capture Area	13 mm x 13 mm minimum. Specify capture area.		
33	Graphical Display	Backlit graphical LCD display of 60 mm x 18 mm size and 120x32 resolution shall be provided for feedback on read process. Specify display size and resolution.		
34		The solution should be able to download punch information of employees from the readers in real-time. There should be no batch process required. Also, if required, communications with server should be performed at regularly scheduled intervals or preset times, or on an “on demand” or “when available” basis.		

35		The reader should have full functionality in off-line mode. It should be able to send all events once connectivity is re-established (employees must be able to punch-in/out for shift or break off line).		
36		Both the reader as well as the software should be engineered and supported by a single vendor		
37	Software / Firmware Updates	Software / Firmware updates should be possible through network / communication Port. To be provided free of cost during lease period.		
38	Certifications	CE or UL or EN		

2. Technical Specifications of Biometric Smart Card Reader - Type II (For Attendance)

Make				
Model				
Hardware & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Description	Fingerprint Biometric and Contactless Smart Card Reader with keypad for providing two-factor authentication by reading the card & comparing the fingerprint template presented to it and marking the attendance.		
2		Should be of Plug and Play Type. Should be possible to replace the faulty reader / sensor module without needing to reprogram the control unit.		
3		Fault of one reader should not affect the operations of other readers in the network.		
4		Reader shall be manufactured using the latest and most accurate state of the art biometric technology and shall support high speed processing		
5		Should be able to control the various threshold levels and changes in the sensitivity through software		
6		At least 9 button keypad		
7		Reader shall be capable to authenticate the valid users in combination with smart card, keypad and biometric and / or separately.		
8		Same reader shall be used for marking "IN" and "OUT".		
9		The reader should be able to match any of 2 finger patterns		
10	Body & Mount Type	ABS/ Polycarbonate / Metallic material; Tamperproof Mounting shall be single gang or Mullion type. Should be suitable for installation on metal surface ; Should be suitable to withstand exterior installations and / or harsh industrial / environmental conditions. Minimum Requirement is IP 55 Protection.		

11		Readers to be mounted on 3” dia SS pedestal with SS plate on top of it. Height of pedestal should be 90 cm. Pedestal & Mounting to be provided by vendor. Cost to be built into the reader		
12	Card Type	Card reader shall be capable of reading the selected card technologies (HID iClass / Mifare within 13.56 MHz range). The protocol of data from the reader shall be an open format and non-proprietary.		
13	Read Range	Shall have read range upto 5 cm when used with accepted compatible access card technology. Specify range.		
14	Communications	Reader should communicate with central server using TCP/IP protocol over Ethernet or Internet, 10/100 Mbps auto sensing Ethernet with DHCP, SSL, IPv4 and IPv6 Support		
15	Fault Detection	In the event of reader failure / malfunction / tempering, it shall be capable of being detected by the server and appropriate alarms shall be generated at workstations / server.		
16	A/V Indicators	It shall be capable to provide a unique tone and / or tonal sequence for various status conditions such as attendance marked / denied, access granted / denied, reader power condition etc and clear visual LED indications (Multi-colour) shall be provided for various status conditions.		
17	Card Holder Memory	Finger template storage capacity at least 4000 Nos. Specify Capacity.		
18	Event Buffer Size	50000 Nos. with date & time stamp. Specify Capacity.		
19	Biometric Sensor Type	500 DPI or better Optical Type Biometric Sensor. Sagem / Bioscrypt / Secugen / Suprema make. Self-contained fingerprint unit should perform enrollment and verification. The system to be Impact resistant, scratch resistant, weather durable and corrosion free. Specify make of sensor and dpi		
20		In the case of fingerprint of a particular employee is not authenticating properly, system should be able to work only with smart card for that employee i.e. The terminal should support the ability to support biometric and non-biometric employees at the same terminal		
21		Employees, at times, tend to punch more than once in a short span of time not being sure of the previous punch. In order to eliminate this, system should support a "no re-punch" feature which prevents employees from entering several punches in the short span of time		
22		It should be possible to configure, manage and diagnose multiple geographically dispersed readers from a central desktop application without custom programming		

23		Should have central administration module to manage all readers installed remotely		
24	Clock	Shall have built-in RTC Calendar. Should be able to sync the clock with the server.		
25	Power	Shall have built-in or external power supply required for internal operations. Should be able to work with 230V single phase power supply.		
26	Battery Backup	SMF Batteries for backup of min. 3-4 hours. Should be able to control EM locks also. Lithium battery to maintain data in RAM and supply power for the on-board RTC etc.		
27	Battery Refresh	The bidder shall compulsorily replace all the batteries after 3 years and as and when the batteries get faulty during the entire lease period		
28	Environmental	Temperature 0 to 40 degree C; 10% to 95% RH non-condensing		
29	Template Size	Around 350 bytes		
30	Verification Time	Less than 1 second. Specify Time.		
31	Enrollment Time	Less than 3 seconds. Specify Time.		
32	FAR / FRR	0.001% FAR; 0.01% FRR in Ideal Conditions		
33	Scan Capture Area	13 mm x 13 mm minimum. Specify capture area.		
34	Graphical Display	Backlit graphical LCD display of minimum 60 mm x 18 mm size and 120x32 resolution shall be provided for feedback on biometric read process. Specify display size and resolution.		
35		The solution should be able to download punch information of employees from the readers in real-time. There should be no batch process required. Also, if required, communications with server should be performed at regularly scheduled intervals or preset times, or on an “on demand” or “when available” basis.		
36		The reader should have full functionality in off-line mode. It should be able to send all events once connectivity is re-established (employees must be able to punch-in/out for shift or break off line).		
37		Both the reader as well as the software for Electronic Attendance System should be engineered and supported by a single vendor		
38	Software / Firmware Updates	Software / Firmware updates should be possible through network / communication Port. To be provided free of cost during lease period.		
39	Certifications	CE or UL or EN		

3. Technical Specifications of Smart Cards

Make				
Model				
Specifications & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Description	Card shall have minimum 4 KB memory and shall employ Mifare or HID iClass platform for storing and accessing data items.		
2		Card should be capable of completing any write operation even if the card has been removed from the RF field during the operation.		
3		Card shall be laminated and colour coded as per the type of user. Overall card design shall be finalised with successful bidder.		
4		Photography, finger print enrolment, card preparation and lanyard attachment shall be in the scope of successful bidder		
5		Minimum two fingerprint patterns shall be enrolled and stored in the card / system		
6	File / Application Support	Platform shall support upto 28 applications with 32 files per applications.		
7	Encryption	Shall support DES, TDES, 3KTDES & AES cryptography. Data inside the card shall be secured with minimum 64 bit encryption so that data can not be modified or accessed until the card and the reader have completed mutual authentication.		
8	Material	Card shall be durable, made of PVC and meet ISO 7810 standard for length, width, thickness and construction. Card shall be resistant to alcohol, Fuel, sweat etc. Card shall be capable of accessing a slot punch on one end, allowing it to be hung from a strap or clamp in vertical orientation. It should be capable of direct two sided dye-sublimation or thermal transfer printing so that cardholder information / images shall be printed directly onto card.		
9	Standard Compliance	Conformance to 14443A.		
10	Frequency	Contactless smart chip operating at 13.56 MHz		
11	Others	Smart card shall be supplied with 1 meter lanyard (with BHEL logo preprinted at defined distance intervals) and a solid / rigid plastic card holder with slots for clip or lanyard		
12	Warranty	Card shall be warranted against defect in material and workmanship for lifetime.		
13	Environmental	Temperature -20 to 55 degree C; 5% to 95% RH non-condensing		
14	Additional Cards	Additional cards alongwith preparation, if any will be on the same rates		

4. Technical Specifications of Enrollment, Programming, Printing Station Along with Printer & Camera

Make				
Model				
Specifications & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Description	Enrollment station shall be used for various administrative function like creating / deleting system operators and managing their profiles / passwords, EAS hardware management, smart card programming / preparation, fingerprint enrollment, card/user modification, system configurations, photo badging & smart card printing, system archiving etc.		
1.1		Each enrollment station shall include an imaging printer, fingerprint enrollment kit, smart card encoder/programmer, digital photo camera & photo card preparation module, relevant software. System shall share a common database as of Electronic Attendance System. The user interface shall be similar in look and feel to other modules of Electronic Attendance System.		
1.2		Photo card preparation module shall include a complete design and layout tool. The design and layout tool shall make use of WYSIWYG editor including drag and drop placement.		
1.3		Software adjustable controls like hue, saturation, brightness, contrast, offset and gain shall be controllable through the application.		
1.4		Module should be capable of using industry standard direct to PVC dye diffusion thermal transfer printer for production of ID cards.		
1.5		It should be possible to import previously captured images		
1.6		Two fingerprint per employee shall be registered and stored in system / card.		
2	Encoder / Programmer	Card Compatibility: Mifare or HID iClass. Specify make / model.		
2.1	Encoding Time	Less than 3 seconds		
2.2	Interface	USB		
3	Fingerprint Sensor Type	Biometric sensor shall be optical type of Sagem / Bioscrypt / Secugen / Suprema make. Specify make / model.		
3.1	Scan Capture Area	13 mm x 13 mm minimum		
3.2	Frequency	13.56 MHz		
3.3	Certifications	CE or UL or EN		

4	Card Preview and Printing	Operator should be able to print the card on the printer after image has been accessed and layout selected. It should have print preview option before printing.		
5	Base Station	HP / Dell / Lenovo / HCL / Acer. Specify make / model.		
5.1	Processor	Intel Core i5 - 3470 (3.2 GHz Base Frequency, 6 MB L3) or better. Specify.		
5.2	Chipset	Intel Q77 or better. Specify.		
5.3	Memory	6 GB or higher Dual Channel DDR3 SDRAM @ 1066 MHz or Better. Specify.		
5.4	HDD	500 GB SATA or higher 7200 rpm with Pre Failure Alert		
5.5	Graphics Card	Professional 3D Graphic Card (NVIDIA or ATI Firepro) with 512MB Memory		
5.6	Optical Drive	16X or more DVD+/-RW SATA		
5.7	Ethernet	Integrated (on-board) 10/100/1000 Mbps RJ45 port with WOL, PXE & ASF (Alert Standard Format) 2.0 OS independent software to monitor & analyse network connection		
5.8	Ports	Minimum 1 Serial, 6 USB (Ver 2.0), VGA, Speaker, Microphone, Headphone		
5.9	Monitor	24" TFT (OEM make) with Aspect ratio 5:4 and min. resolution of 1280*1024 TCO compliant. Specify make / model.		
5.10	Keyboard / Mouse	Standard USB/PS2 Keyboard & Scroll Mouse		
5.11	OS	Windows 7 Professional 64bit with latest service pack, Restore / Recovery CD & with OS media CD with each station (in absence of OS Media CD OEM pack of OS to be supplied), a software to provide data recovery to restore user data, settings, applications and Operating System in the event of a software crash or virus infection. The latest system drivers should be available on OEM's website for the entire lease period.		
5.12	Hardware Diagnostic	OEM's Diagnostic tool for hardware diagnostics		
6	Card Printer	High Definition - Dye Sublimation / Resin Thermal transfer; 300 dpi Print Resolution; 16.7 million colour or better; Print Speed 30 seconds for CMYKO (Cyan, Magenta, Yellow, Black, Overlay) printing; Washable, Replaceable card cleaning rollers; CR80 (2.125" H x 3.375" W) Card Stock; Print within 2mm of Card Edge; Card Hopper Feeder with 100 Card Capacity; Simultaneous Dual Sided Lamination; 2 GB RAM Capable of buffering cards queued for printing; Latest Windows 32/64 bit drivers		
6.1	Print Cartridges	Sufficient number of cartridges to prepare Smart Cards as mentioned in the tender scope		
7	Digital Camera	12 Mega Pixels 5X Optical Zoom Professional Digital Photo Camera of Reputed Make. Specify Make / Model.		

8	Signature Pad	Digital Signature Pad & Pen along with compatible software for digitizing employee signature, USB Interface. Specify Make / Model.		
9	Unicode Compatibility	System should be Unicode compatible so that entries can be made in Hindi also		
10		Photography, finger print enrolment, card preparation and lanyard attachment shall be in the scope of successful bidder		

5. Technical Specifications of Flap Barrier

Make				
Model				
Specifications & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Description	Waist Height Retractable Flap Barrier including EM Locks controlled using Biometric / smart cards, Electronically operated, silent & maintenance free in operation, adjustable timeout feature. Continuous duty cycle. Modular with Single / Multiple lane setup. Shall support normally open mode operation.		
2	Material	304 Grade Stainless Steel Arm Dia 35 mm MAT finished Body. Colourless Tempered Safety Glass (Min 10 mm thickness) flaps for Heavy Duty Use, Dual Flap Arms		
3	Passage Width	500-600 mm. Specify.		
4	Safety	Sensors to detect person in safety zone; Fully retract in case of power failure / emergency.		
5	Configuration	Configurable in both or one direction in fail-safe or fail-lock in the event of power fail or during emergency		
6	Interface	Suitable Control logic with one input for opening / locking the mechanism in each direction; two relays indicating availability of use in either direction; two output to count passage in either direction		
7	Card Reader Compatibility	Provision for embedded (Flush) mounting of two readers one on each side for attendance and access control		
8		Should not allow a person to pass from opposite direction. For example, if a person shows card from the entry side and another person from the opposite side tries to exit than the flaps should immediately close, thus blocking the passage.		
9		Anti Tail Gating Feature		
10		Anti Crash Sensors		
11		Indicator Lights of different colours for various states		

12		Same barrier should be able to work from both directions i.e. IN and OUT		
13	Opening/ Closing Time	Less than one second		
14	Standards	CE / UL Approved, EN 61010-1, IEC 1010-1		
15	Interface	Opto-Isolated Inputs & Outputs for Interfacing External Devices		

6. Technical Specifications of Servers

Make				
Model				
Specifications & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Mounting	Rack		
2	Height	Max 2U		
3	Processor	Intel Xeon Quad Core 5630, 2.53GHz, 5.86GT/sec QPI with 2 nos. processors populated. Specify Model.		
4	Chipset	Intel 5500 family chipset. Specify Model.		
5	CPU Cache	12MB L3 Cache. Specify.		
6	RAM	24GB DDR3 1066 MHz expandable to 48GB. Specify.		
7	Extension Slots	4 or more PCI-X / PCI-Express slots (with at least 2 PCI-E x8 slot for SAN connectivity)		
8	HDD	6 x 146 GB or higher SFF hot Pluggable SAS 10K rpm		
9	DVDROM	8x or higher DVD-CDRW Combo Drive		
10	Raid Controller	2 Nos. of 3G SAS RAID Controller, each with 256 MB battery backed cache		
11	LAN Card	2 Nos. of separate 10/100/1000 Ethernet Cards each with 2 ports (with at least 1 card on board)		
12	Power Supply	Should come with Hot Pluggable & Redundant Power Supplies		
13	Fans	Hot pluggable redundant fans		
14	OS & Database	1) MS Windows 2012 Standard or Latest 2) Commercial Grade Licensed Database Software matching above hardware and as per software requirements.		
15	Certifications	For OEM : ISO 9001 (Latest version); ERTL/FCC-EMC Class A or Class B; Latest version of IEC-60950-1 / IS 13252 / UL-60950; ACPI (Latest Version) compliant; RoHS compliant		

7. Technical Specifications of Self Service Kiosk

Make				
Model				
Specifications & Performance Requirement			**Compliance (Y/N)**	**Remarks**
1	Enclosure	Durable Floor Mounted Rugged Steel Enclosure with Powder Coat Finish. Enclosure should be lockable with Front / Rear Access Doors		
2	LCD Monitor	19" Touchscreen LCD Monitor with Aspect Ratio 5:4 or 4:3. Specify Make / Model.		
3	Keyboard	Rugged Keyboard with Trackball Suitable for Industrial Use		
4	Fans	Cooling Fan		
5	Power	230 V AC Power Input with 6 Port AC Power Distribution Strip		
6		Adjustable Leveling Legs for Adjustment on Uneven Floor Surface		
7	Fingerprint Scanner	Built-in Biometric Fingerprint Scanner		
8	Smartcard Reader	Build-in Smart Card Reader		
9	**PC Specs**			
9.1	Processor	Core-i5-3470 (Base Clock Speed 3.2 GHz, 6MB L3 Cache) or Higher. Specify.		
9.2	Motherboard	Motherboard and FRU should be OEM make only		
9.3	Chipset	Intel Q77 or Better. Specify Model.		
9.4	RAM	4GB Dual Channel DDR3 1333 MHz expandable to 8 GB		
9.5	HDD	500GB SATA 7200 RPM or higher with pre-failure alert		
9.6	Ethernet	Integrated (on board) 10/100/1000 Mbps RJ45 port with WOL, PXE & ASF (Alert Standard Format) 2.0 OS independent s/w to monitor & analyse n/w connection. Network Port Outlet on Kiosk		
9.7	Software	Windows 7 Professional 64 bit with latest service pack, Restore / Recovery CD & with OS media CD with each kiosk (in absence of OS Media CD, OEM pack of OS to be supplied) The latest system drivers should be available on OEM's website for the entire lease period.		
9.8	Form Factor	Micro ATX Desktop		
9.9	Diagnostic Tool / Software	OEM's Diagnostic tool for hardware diagnostics		
9.10	Certifications	OS Certification from Microsoft For OEM : ISO 9001 (Latest version) ERTL / FCC - EMC class B Latest version of IEC-60950-1 / IS 13252 / UL-60950 ACPI (Latest Version) compliant RoHS compliant Energy Star 5.0 compliant		

10	Cable Management	Cable Management for Easy Cable Routing		
11	Warranty	OEM warranty for the entire contract period		

8. Time & Attendance System Software

Make				
Model				
Specifications of Software			**Compliance (Y/N)**	**Remarks**
1		The proposed solution should be completely integrated time, leave and scheduling system. Solution should be enterprise-wide and should be completely web based. The key components include: - Time Collection devices - Time Management linked to time devices providing real-time visibility into workforce - Leave and Absence Management - Scheduling, Shift Management - Reporting and Analytics - Overtime Calculation - Shift Allowances - Holiday Management - Compensatory Off		
2		Each employee should be able to check following details after proper authentication: - Checking Roster - Checking Punches - Check Attendance Details - Check Leave Balance - Apply for Leave		
3		Proposed solution should have the capability to run reports like on premise and exceptions in real time. In order for the reports to run in real-time the readers should be able to push punches into the software in real time		
4		The Solution should have multi-tier web based architecture and centralized architecture. There should be no installation on any other PCs to run the system.		

5		Different stakeholders in the organisation would want to run different set of reports and analysis. Hence the system should have the ability to define various roles like Manager, Supervisor, IR, HR, Management etc so that exception and attendance reports can directly be run by concerned stakeholders anytime on their PC for the employees they manage. For e.g. Department heads should be able to run reports on their desktops for their employees. System should have the capability of Adhoc reporting requirement. Some of the reporting requirement is listed in annexure IV.		
6		The software should have the capability to record leaves taken by employees which should then update the schedules and timesheet of employees.		
7		Proposed software have complete audit trail capabilities of changes made to employee's timecard including information on who made the changes and when.		
8		**Unified view of the employees**: The system should provide an unified view of the employees to HR and Managers. The unified view should contain the time sheet, the roster/schedule and leaves taken by the employees all in one screen.		
9		The proposed time and attendance system will have to integrate with the existing ERP and payroll systems so system should have a certified adapter with ERPs like SAP. Also the proposed system should have a native integration tool to build interfaces to other legacy systems.		
10		The attendance software should have a central management module to manage all the attendance readers deployed across all the locations.		
11		Communications with server should be performed at regularly scheduled intervals or preset times, or on an "on demand" or "when available" basis.		
12		Allow reader software / firmware upgrades by means of downloading software / firmware from a network or over modem		
13		The system should have the capability for the organization to manage as per their requirements the following exceptions at a minimum:		
		Late in		
		Early In		
		Late out		
		Early out		
		Unauthorised Absenteeism		

		Missed In Punch		
		Missed Out Punch		
		Very early IN		
		Very Late OUT		
		Unscheduled		
14		The system should be able to generate configurable exception report in real time		
15		System should provide the ability to adjust or correct time / leave entries paid for previous pay periods – Historical entries.		
16		Provide the ability to automatically calculate overtime for an employee based on rules defined in the system		
17		The solution should provide the option to restrict entries to inactive/terminated / retired employees on the attendance readers as well as access control readers		
18		The solution should provide the ability to view future exceptions (e.g. vacation or other leaves of absence).		
19		Solution should provide facility to attach comments to identify reasons for the manual change (i.e. duplicate, missed punch, etc)		
20		Provision to add Employee wise weekly offs		
21		All the regular employees should have the ability to apply for leave online		
22		The system should have a workflow tool available that routes the application request to the manager for approval		
23		The system should enforce applicable leave rules when an employee is applying for leave.		
24		When an employee applies for leave the system should provide the ability to validate leave balances real-time at the point of entry.		
25		Provide the ability to send time-based escalations or reminder notifications for a given task in a leave request & approval process		
26		The leave engine should allow for setting up minimum or maximum number of leave days that can be taken at a time		
27		System should have the capability to define overdraft leave limits		
28		System should have the capability to provide reports on leave usage.		
29		System should allow for creation of any number of leave types		
30		Carry forward rules and lapse rules should also be configurable in the system.		
31		System should have the capability to set probation periods.		

32		Proposed software should have a flexible and easy to use (excel like) scheduling engine that should be able to take care of all scheduling requirements of BHEL and have the ability to build unlimited shift schedules and patterns. Some of the important capabilities required of the solution are mentioned below:		
33		The scheduling tool in a single glance should provide information to the managers like:		
		Number of employees rostered		
		Employees on leave for the duration being viewed		
34		In order to make it easier for managers the system should provide the capability to assign mass schedules to a group of employees in one go.		
36		The schedule once created and saved should automatically be available in the time card of the employee.		
37		Shift Management		
		Ability to add new shifts (No upper limit)		
		Ability to deactivate existing shifts		
		Ability to edit shift information		
		Ability to change shifts		
		Ability to allocate shift for future		
38		Provision to create unlimited shift patterns like AB, ABC, BAC, CAB etc		
39		Provide the ability to schedule shifts that cross multiple days (e.g. start at 6:00 p.m. on day one and complete at 2:00 a.m. on day two).		
40		Provision to create shift patterns of varying durations like weekly, monthly, fortnightly, daily or any other adhoc duration		
41		Allow schedule shift patterns to be automatically repeated, or rolled forward to future weeks		
42		The solution should Support for remote and non relational data sources		
43		The solution should support key extensions such as HTML, Excel, PDF, Word, Image, XML, CSV rendering extensions. E-mail and file share delivery extensions		
44		It should support report Scheduling and delivery of scheduled reports either through e-mail or file system share		
45		It should support Report caching, Report history for better performance		
46		It should support ad-hoc reporting		
47		It should support Visualization tools such as maps, gauges, and charts, indicators		

48		The system should be accessible to all regular employees based on their rights over the web by entering a user id and password.		
49		Department/Location based logins should be available		
50		Ability to Create/Edit users in the system.		
51		Provision for giving selective user rights		
52		Logout functionalities		
53		Transmissions from the web-based application are kept secure through SSL		
54		It should be possible to use same reader for both IN as well as OUT in multi-shift environment on 24x7 basis i.e. in same workplace there may be different shifts going on and logic to be built based on shift timings of a particular employee / group of employees		
55		Fingerprints enrollment shall be an integral part of system. Each cardholder can have up to 2 stored finger templates		
56		Each cardholder can have a Personal Identity Number (PIN) to be used on readers with keypad.		
57		The software should check the status of the readers / controllers on regular intervals. (Online / offline)		
58		Software alongwith customisation code / objects / libraries shall be handed over to BHEL. BHEL will be free to modify and use software as it may deem suitable for its internal use.		

9. Technical Specifications of Access Control Software

Make				
Model				
Specifications of Software			**Compliance (Y/N)**	**Remarks**
1		software should be able to capture employee swipe transactions both for in-swipe and out-swipe and transfer the data to server for further processing.		
2		The Software should be web based so that the administrator / operator / user can access the software console from any location within BHEL Network.		
3		The software should have the capability to integrate with the existing HR, Payroll and SAP-HR Systems		
4		The software shall be modular in nature and easily expandable without any hardware/software limitations.		

5		The software shall support many Clients / Workstations with all functionality available from client / workstation on the network		
6		The software shall utilize a single seamless integrated relational database for all functionality.		
7		The data archival and back up shall be part of the system architecture and process.		
8		The software shall support Microsoft Windows XP/ 2003/ 2008/Win 7 operating systems.		
9		The software shall be expandable to support an unlimited number of field devices.		
10		The software should be having the below mentioned features integrated and seamlessly connected to each other: 1) Access Control System from Day one 2) Time & Attendance System from day one 3) Option of Integration with CCTV and fire alarm 4) Option of Visitor Management System Module 5) Alarm Monitoring		
11		The software shall support a fault tolerant server and redundant database architecture. In the event of a server failure, the system shall automatically switch over to a backup server from the primary server without impeding the operation of the software.		
12		The software shall support an import utility that provides importing of cardholder information into the database in any format compatible with ODBC (Excel, MDB, etc.)		
13		The software should be able to do Bulk Employee Addition		
14		The software should store Photographs for each employee.		
15		The software shall allow data to be imported or exported in real time or as a batch operation.		
16		Software shall support distributed architecture with central monitoring and control. If communication to the central control fails, it shall continue providing access based on the predefined security configuration. Until communication is regained, all event logs and alarms shall be stored locally (based on controller capacity). These events shall be sent to the central server when the communication is regained.		
17		All data over the network between the reader / controller and the server shall be encrypted if required.		

18		All software/firmware upgrades shall be downloadable through the network to the reader / controller.		
19		There can be multiple operators/administrators with hierarchal controls. System should be accessible only after valid authentication.		
20		The system should include an advanced report wizard enabling the user to issue reports for logged events, alarms and all system components: controllers, readers, access groups, cardholders, time, date etc. Reports should support filter by any field. All reports should support export to external files in known formats like MS Excel, CSV, etc		
21		Operator should be able to add and correct missing IN/OUT access events.		
22		Local and global Anti Passback feature should be available.		
23		Each cardholder should be validated / invalidated for a given period by setting the start date and end date. The system shall automatically update the database and the controllers within 30 minutes (default) of the relevant change.		
24		It shall be possible to assign one or more access groups for each cardholder.		
25		The system shall support the following options: Card + Finger, Keypad code + finger, Finger only, Smart Card (fingerprint template data stored only on the smart card chip), One / many templates per employee		
26		There should not be any transaction loss.		
27		Required backend enterprise database software shall be supplied alongwith server hardware. Cost of the same shall be included in the server hardware.		
28		The solution should be Enterprise wide		
29		Software alongwith customisation code / objects / libraries shall be handed over to BHEL. BHEL will be free to modify and use software as it may deem suitable for its internal use.		
30		**Various other system requirements are listed in details at Annexure IV.**		
31		Changes in business rules / new requirements, if any will be specified later.		

10. Technical Specifications of Guide Railing

Make			
Model			
Specifications & Performance Requirement		**Compliance (Y/N)**	**Remarks**

1	Description	Tubular, self supporting, modular system expanded through flanges & connectors in 0, 45, 90 degrees, left/right modes with safety glass infill panels or lower bar		
2	Material	304 Grade Stainless Steel		
3	Mounting	Finished Floor Surface		
4	Tube Dia	More than 40 mm		
5	Height	Same as of barriers		

11. Technical Specifications of Miscellaneous Items			**Compliance (Y/N)**	**Remarks**
Specifications of UTP Cable / RJ45 Connectors				
Make	AMP/ Systimax/ Avaya/ Molex/ Panduit. Specify Make / Model.			
1	Cat 6	Should meet minimum Category 6 requirements		
2	Type of Conductors	4 Pair 23 AWG Conductors		
3	Frequency	Characterised to 250 MHz		
4	Standards	TIA/EIA 568B, ISO Class E 11801-2002		
5	Gigabit Requirements	Should meet or exceed Gigabit Ethernet Requirements at 100 meters		
6	Connectors	Same make as of Cable		
Specifications of PVC Conduit				
Make	AKG or Equivalent			
1		1” PVC Pipe, Medium Strength. ISI Mark. Specify Make / Model.		
Specifications of MS Pipe				
Make	AKG or Equivalent			
1		1” MS Pipe, Medium Strength, ISI Mark, Minimum Wall Thickness 1.6mm. Specify Make / Model.		
Specifications of Power Cable				
Make	**Anchor / Finolex / Havells / Polycab / RPG**			
1		3 Core Multistrand Flexible Copper Power Cable of size 1.5 Sqmm Suitable for Connecting readers / controllers / barriers		

Price Bid	
1	The lease charges are to be quoted for financial lease for 60 months, payable at the end of each quarter for 20 quarters.
2	Total Quarterly Lease Charges (at column H) of part A shall include Total Quarterly Equipment Cost, Installation charges, Insurance, Total Quarterly Maintenance Charges, Total Quarterly Interest Charges, training etc.
3	The comparative statement will be on total quarterly lease charges (Total of column H of part A) x 20 quarters plus One Time Charges of 4800 Cards (Part B)
4	Lease / RTU / VAT / CST tax and service tax on maintenance or any other service will be paid extra. Vendor will clearly mention lease / RTU / VAT / CST tax and service tax payable on various heads. All taxes except service tax will be loaded in comparative statement to arive at "LANDED COST TO BHEL"
5	The total outright purchase value shall be 20 times of total of column D of part A. Equipment cost at column D should also include installation charges.
6	Payment on account of cables and pipes shall be made on actual consumption basis, however for comparative statement, quantities under various heads have been mentioned.
7	All values are to be quoted in Indian Rupees.

Part A - Lease

Sl. No.	Item Description	Unit	Qty	Per Quarter Lease Charges for UNIT Quantity				Per Quarter Lease Charges (Excluding Taxes) for Total Quantity
				Towards Equipment Cost Excluding Taxes	Towards Maintenance (Excluding Service Tax)	Incidental Like Interest on Capital (Excluding Taxes)	Per Quarter Lease Charges (Excluding Taxes)	
A	B		C	D	E	F	G = D + E + F	H = C x G
1	Smart Card Reader Type I	Nos.	24					
2	Smart Card Reader Type II	Nos.	167					
3	Smart Card 4K Including preparation like enrollment, programming, printing etc.	Nos.	11500					
4	Printing Station	Nos.	2					
5	Flap Barrier	Nos.	12					
6	Server with OS & Database	Nos.	2					
7	Self Service Kiosk	Nos.	5					
8	Enterprise Grade Time & Attendance System, Software Development, MIRs	Nos.	1					
9	Enterprise Grade Access Control System, Software Development, MIRs	Nos.	1					
10	Guide Railings (Length of Pipes including horizontal, vertical and bends to be measured in running meters after installation)	Meters	150					
11	CAT 6 UTP Cable alongwith installation inside PVC/MS Pipe at site	Meters	11760					
12	UTP Cable Termination alongwith I/Os, RJ45 connectorisation, ferruling etc. Required I/Os, RJ45 connectors etc also to be supplied	Nos.	196					

13	1" PVC Conduit alongwith fixing on walls	Meters	2000					
14	1" MS Pipe alongwith fixing on steel columns / Beams / Walls	Meters	4000					
15	3 Core Power Cable alongwith termination	Meters	2865					
16	ANY OTHER CHARGES	LS	1					

Note: Taxes in Percentages on Equipment, Maintenance & Incidental Like Interest on Capital and/or wherever applicable to be mentioned clearly here.

1	**Taxes on Column D**	
2	**Taxes on Column E**	
3	**Taxes on Column F**	

Part B - One Time Charges (These charges should valid for entire contract period. These cards will be supplied by vendor as per requirement of BHEL during entire lease period.)

	Items	Unit	Qty	One Time Lumpsum Charges Excluding Taxes
1	Supply and Preparation of Smart Card as item no. 5 of part A above	No.	4800	

Mention Tax Rates for One Time Charges for above item

Part C - One Time Charges (These charges should valid for entire contract period)

	Items	Unit	Qty	One Time Lumpsum Charges Excluding Taxes
1	Shifting Charges of Smart Card Reader including Cabling	No.	1	
2	Shifting Charges of Controller including Cabling	No.	1	

Mention Tax Rates for One Time Charges for above items