



ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್  
भारत हेवी इलेक्ट्रिकल्स लिमिटेड

**Bharat Heavy Electricals Limited**

( A Government of India Undertaking)

**ELECTRONICS DIVISION**

**P.B.No 2606, Mysore Road,  
Bangalore - 560 026**

*An ISO9001,ISO14001 & OHSAS 18001 Company*

Ref:EDN/515/1415/ARBCS

Date: 11/09/2014

**Subject:NIT EDN/515/1415/ARBCS DATED 18.08.2014.-Addendum/Corrigendum -reg.**

1. Page No 1 Clause 6- The last date and time for the submission of duly filled in tender document is extended to **19.09.2014 at 1 PM.**
2. Page No 1 Clause 8- Date and time for tender opening is extended to **19.09.2014 at 1.30 PM**

The following clarifications are added to the NIT as an '**Addendum**'

Q1) The tender is for 7 years lease rental whereas the price format given is for outright purchase. Pl clarify and provide suitable price format.

Ans1. **Bidders have to quote both for equipment cost as per price bid format (presuming outright purchase) & also for leasing options of the equipment.**

L1 will be decided based on total prices quoted for cost of equipment presuming outright purchase only.

L1 party will be invited for further discussions regarding leasing options of the equipment.

Q2) Consumable items like smart card, cabling job shall be made outright purchase.

Ans2: Smart Cards shall be made outright purchase but cables (networking) will be part of leasing. Prices to be quoted as lumpsum (Refer Page No5 of the tender document)

Q3) Being MSME and NSIC registered firm we are eligible for EMD exemption.Kindly confirm.

Ans3. Micro and Small scale enterprises and NSIC registered are eligible for EMD exemption. Medium scale industries are not eligible for EMD exemption.

Q4) The tripod turnstile spec's are for manual push type whereas it is given as Automatic / Hydraulic type ( sp-01, sl no-2 ). Pl change to manual push type.

Ans4: Vendors may quote for available options with them

Q5) Commercial terms ( payment, delivery etc ) are not available in tender. Pl clarify.

Ans5. Please refer to Page No2 onwards of this document for other general terms and conditions.

## **TERMS & CONDITIONS**

**1.1 SCOPE:** The scope of supply consists of design, supply, installation & commissioning of an access control system for Electronics Division, a unit of BHEL, located at Mysore Road, Bangalore. The Enrollment of the Employees will be done at Electronics Division, a unit of BHEL, located at Mysore Road, Bangalore

**1.2. Note :** The vendor shall ensure that the solution offered by him is complete and works in the way desired by BHEL as described in the enquiry.

### **1.3. ORDER ACKNOWLEDGMENT**

Letter of acceptance of the Order / Contract is to be submitted within one week.

### **1.4. PERIOD OF CONTRACT :**

The period of contract is for SEVEN YEARS on Finance lease (Rental and Maintenance Charges).

### **1.5. PERFORMANCE BANK GUARANTEE:**

The vendor should furnish a bank Guarantee from an Indian Bank approved by BHEL, at no extra cost in a pro-forma prescribed by BHEL for an amount equivalent to 10% (Ten percent) of the value of the contract. The PBG shall be valid for throughout the contract period of SEVEN years. If PBG is issued by a Foreign counter part of the BHEL consortium Indian Bank, in case of claim against the PBG, it will be lodged in any one of the Indian counters of the foreign bank's COUNTER PART of BHEL's consortium Indian Bank.

### **1.6. SUPPLY CONDITION:**

All equipment supplied and installed shall be NEW and conforming to the contract technical Specifications. The certificate of newness is to be furnished.

### **1.7. INSPECTION:**

Ordered items shall be offered for pre-dispatch inspection before shipment. BHEL reserves the right to exercise the option to inspect the components on receipt at BHEL or give dispatch clearance based on vendor's inspection and other reports.

### **1.8. DELIVERY & INSTALLATION**

- a) The OEM shall be responsible for timely delivery, installation and commissioning of all the hardware/software given in the scope of supply at BHEL's premises.
- b) Delivery period shall start from the date of placement of this order.
- c) Delivery Period : 6 weeks from the date of order
- d) Installation Period : 4 weeks from receipt date of total supply.
- e) Items shall be delivered at stores EDN.

### **1.9. PENALTY FOR LATE DELIVERY**

For the delay in delivery, penalty shall be levied at the rate of 0.5% per week subject to maximum of 5% of the total lease rent for the entire lease period for the equipment(s) not delivered in time as per delivery schedule. The penalty will be deducted from the first quarter rental charges, balance will be adjusted from the subsequent quarters.

#### **1.10. PENALTY FOR LATE INSTALLATION**

For the delay in installation owing to the reasons attributable to the vendor, penalty shall be levied at the rate of 0.5% of the total lease rent per week subject to maximum of 5% of the total lease rent for the entire lease period. The penalty will be deducted from the first quarter rental charges, balance will be adjusted from the subsequent quarters.

#### **1.11. PAYMENT TERM**

The lease will commence from the date of successful completion of installation & acceptance by BHEL (calendar quarterly basis). An installation certificate will be issued by BHEL after completing the Acceptance Test Procedure (ATP) terms. Thereafter, the payment of Finance Lease (Rental and Maintenance Charges) contract charges will be made on quarterly basis after completion of each quarter and submission of invoice(s) in triplicate. Uniform rental rate will be paid in all quarters except in first and last quarter if they are not calendar quarters. Payment will be through Electronic Fund Transfer (EFT) only. Details regarding bank account shall be provided in BHEL's standard format.

#### **Invoices shall be submitted as follows:**

Equipment leasing to be billed by (Financing Agency)

Maintenance charges to be billed by Vendor.

#### **Wherever, Service Tax is applicable**

1. The vendor shall furnish the service Tax Registration Number.
2. If the vendor is not having Service Tax Registration Number, he shall submit an undertaking to the effect that
  - a. he shall register with Service Tax Authorities and furnish the Registration Number before Commencement of work.OR
  - b. his turnover value is below the threshold limit prescribed by the Service Tax Act and in case he is awarded the contract, whenever his turnover crosses the threshold limit at any time during the execution of the contract, he shall forthwith register with Service Tax Authorities and furnish the Registration Number to BHEL. (This sub-clause is NOT applicable where the taxable turnover of the present tender is above the prescribed threshold limit).
3. The above clauses apply even where the price quoted is "inclusive of taxes".
4. If the Service Tax Registration Number is not furnished to BHEL before the first bill is submitted (except as provided in clause 2(b) above), the bills will not be passed (even if the price is "inclusive of taxes").
5. In case of contracts involving multiple bills, every bill (commencing with the 2nd bill) shall be accompanied with a declaration that the contractor has discharged his tax liability on the earlier bill (i) by paying the money to the Government (along with Challan details) or (ii) by utilization of input Service Tax Credit available with him or (iii) being exempt as his turnover continues to be below the threshold limit. In the absence of such a declaration, the bill shall not be passed.

#### **1.12. ACCEPTANCE TEST PROCEDURE (ATP)**

- a) Complete system supply, installation, migration and testing of system as per requirements and technical specifications must be fulfilled.

- b) Soft copy and 1 sets of hard copies of complete system documentation, technical literature including the technical catalogues, maintenance and service manual, user manual of all the components like the servers, storage, network components , software to be submitted.
- c) Details of configuration, various wiring diagrams, layout, Marking and labelling of switches, all networking components involved, cables, ports, terminations, running instructions etc. to be submitted.(1 set).
- d) Complete lay-out of the network architecture as built of the total system should be submitted by the vendor.
- e) Newness certificate: The Vendor has to submit the newness certificate of all the equipment supplied.
- f) OEM support: The Vendor has to submit the certificate from the Original equipment manufacturer of the all the system components for their direct support.
- g) Certificate: Vendor has to submit certificates as per technical specifications and any other relevant statutory documents.

#### **1.13. WARRANTY & MAINTENANCE:**

- a) The warranty and maintenance of equipment shall be undertaken for seven years from the date of acceptance of the total supply.
- b) The warranty and maintenance will be comprehensive with spares and labour. The maintenance will be inclusive of replacement of all defective components during the warranty period.
- c) The maintenance shall include installation / maintenance of all system components and Firmware/software patches. BHEL is entitled to upgrade of all software like management software, virtualization platform etc. released during the warranty period (SEVEN years) and vendor to install & support these updates.
- d) SLA : 24x7 support for hardware including storage and associated software 9x5 onsite support for virtualization.

1.14. **Note:** If any equipment is down continuously for a month in spite of being serviced, the equipment shall have to be replaced by the Vendor, without any extra charge.

#### **1.15. TRAINING**

Training of BHEL user shall be part of the contract. During installation at location the associated BHEL users shall be trained on the configuration and usage.

#### **1.16. INDEMNITY**

- a) Vendor shall fully indemnify and keep indemnified the Purchaser/Lessee against all claims which may be made in respect of the use of System, Software etc. by the Vendor/ , for infringement of any rights protected by patent, registration of designs or trademarks and legality of the Software. However the Vendor will have no obligation for any claim of 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.
- b) In the event of any such claims being made against the Purchaser/ Lessee, Purchaser/Lessee will inform in writing to the Vendor who shall at his own risk and cost either settle any such dispute or conduct any litigation that may arise there from.

#### **1.17. INSURANCE**

Insurance for the complete Systems/Goods shall be arranged by the Vendor at his own risk and cost throughout the period of lease. Purchaser/Lessee, under any circumstances, will not be responsible for any loss/damage/theft of any Systems/goods, due to any reasons, whatsoever. Claim(s) etc., if any, will be dealt with the underwriters directly by the Vendor. The insurance policy shall be assigned to BHEL.

**1.18. CONFIDENTIALITY**

Vendor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents, etc. belonging to the Purchaser/Lessee and also of the Systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/or finalized during the course of execution of the order/contract. A third party non-disclosure agreement has to be submitted by the Vendor as per the following sample format.

**THIRD PARTY NON-DISCLOSURE AGREEMENT**

I, \_\_\_\_\_, on behalf of the \_\_\_\_\_ (Name of Company), acknowledge that the information received or generated, directly or indirectly, while working with BHEL on contract is confidential and that the nature of the business of the BHEL is such that the following conditions are reasonable, and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly or indirectly, any information related to the BHEL. Without restricting the generality of the foregoing, it is agreed that we will not disclose such information consisting but not necessarily limited to: ☐ Technical information: Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects. ☐ Business information: Customer lists, project schedules, pricing data, estimates, financial or marketing data.

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHEL all documents and property of BHEL, including but not necessarily limited to: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHEL's business, or in any way obtained by me during the course of contract. I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing. This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHEL, and are reasonable given the nature of the business carried on by the BHEL. I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and without duress.

Dated at \_\_\_\_\_, this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Name

Company

Signature

#### **1.19. FORCE MAJEURE**

Vendor shall not be responsible for delay in delivery resulting from acts/events beyond his control provided notice of the happening of any such act/event is given by the Vendor to the Purchaser/Lessee within 15 days from the date of its occurrence. Such acts/events shall include but not be limited to acts of God, war, floods, earthquakes, strikes, lockouts, epidemics, riots, fire or Governmental regulations superimposed after the date of order/contract.

#### **1.20. RISK PURCHASE**

Purchaser/Lessee shall reserve the right to terminate the order/contract and purchase from elsewhere at the risk and cost of the Vendor, either the whole or part of the Systems/goods, which the Vendor has failed to deliver within the stipulated delivery period or if the same were not available, the best and the nearest available substitute(s) thereof. The Vendor would be liable to compensate the Purchaser/Lessee for any loss, which the Purchaser/Lessee may sustain by reason of such purchase. This clause will be operated only after completion of delivery period.

#### **1.21. ARBITRATION:**

All disputes or differences whatsoever which may arise at any time during execution of the Contract shall be mutually settled by BHEL and Vendor as per provision of the Contract. However, in the event such disputes cannot be settled mutually, such disputes shall be settled as per the Arbitration and reconciliation Act, 1996 of the Govt. of India and its subsequent amendments. In case of disputes with the Central PSUs, the same shall be settled at Bangalore as per the Guidelines of the Govt. of India. However, during the period such disputes are settled either by mutual discussions between the parties or by legal means, Vendor shall continue to do the work as per terms & conditions of Contract.

#### **1.22. SUB-CONTRACTING**

Order/contract or any part thereof shall not be sub-contracted, assigned or otherwise transferred without prior written consent of the Purchaser/ Lessee which will not be unreasonably withheld.

#### **1.23. ADDITIONAL FACILITY REQUIRED IN FUTURE ON EQUIPMENT**

In case any additional facility, upgrade etc. is required on the equipment the Vendor shall provide the same at mutually agreed terms. Relocation to new identified place, if required shall be done at no extra cost.

#### **1.24. TERMINAL PAYMENT**

BHEL shall have the right to acquire or surrender all the systems at the end of the lease period. In case BHEL decides to acquire the systems, a nominal charge of Re.1.00/-(Re One only) per equipment will be paid as terminal payment. In case of termination or surrender of systems by BHEL at the end of the lease period, Vendor will remove the equipment from Purchaser/Lessee's premises at his own risk and cost after due permission from BHEL.

#### **1.25. LIMITATION OF LIABILITY**

The Vendor's liability will be limited to the scope of this contract only.

#### **1.26. SECURITY DEPOSIT:**

Security Deposit shall be submitted by the vendor. The rate of Security Deposit will be as below:

- a) Up to Rs. 10 lakhs: 10% Above Rs. 10 lakhs up to Rs.50 lakhs: Rs.1 lakh + 7.5% of the amount exceeding Rs. 10 lakhs. Above Rs. 50 lakhs: Rs 4 lakhs + 5% of the amount exceeding Rs. 50 lakhs. The security Deposit should be submitted before start of the work by the vendor.
- b) Security Deposit may be furnished in any one of the following forms:
  - i. Cash (as permissible under the Income Tax Act).
  - ii. Pay Order, Demand Draft in favour of BHEL.
  - iii. Local cheques of scheduled banks, subject to realization.

- iv. Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc. (Certificates should be held in the name of Vendor furnishing the security and duly pledged in favour of BHEL and discharged on the back).
  - v. Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
  - vi. Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the vendor, A/C BHEL, duly discharged on the back.
  - vii. Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be submitted before start of the work and the balance 50% may be recovered from the running bills.
  - viii. EMD of the vendor can be converted and adjusted against the security deposit.
  - ix. The security deposit shall not carry any interest. (Note: Acceptance of Security Deposit against Sl. No. (iv) and (vi) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith).
- c) Security deposit shall not be refunded to the vendor except in accordance with the terms of the contract.
- d) Security deposit will be returned to the vendor after successful execution of the project by the vendor. Security deposit will be forfeited in case the vendor doesn't complete the project successfully.
- e) The delivery should be completed within 6 weeks from the order.
- f) Shipping Details – All materials shall be delivered at  
Bharat Heavy Electricals Limited  
Electronics Division,  
Mysore Road, Bangalore – 560026

Contact Person: **Mrs BANAMITRA MISHRA / Senior Manager (HR)-26998505**  
**Mr K.PARTHIBAN / Add. General Manager (HR)-26998710**

**Further Corrigendum/clarifications/Addendums (if any) will be published in the websites. You are requested to visit our websites regularly for the same.**



**CONTRACTOR**

**FOR BHEL**

**NOTE: The Tenderer shall return the duly filled in Tender document after affixing signature on all the pages.**

**ISSUED TO CONTRACTOR:**



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**Bharat Heavy Electricals Limited**

(A Government of India Undertaking)

**ELECTRONICS DIVISION**

**P.B.No 2606, Mysore Road,**

**Bangalore - 560 026**

*An ISO9001, ISO14001 & OHSAS 18001 Company*

NOTICE INVITING TENDERS

| SL | PARTICULARS   | DETAILS   |
|----|---|---|
| 1  | TENDER NUMBER   | <b>EDN/515/1415/ARBCS dtd<br/>18.08.2014</b>  |
| 2  | NAME OF WORK  | <b>SUPPLY INSTALLATION,<br/>COMMISSIONING AND MAINTENANCE<br/>OF ATTENDANCE RECORDING AND<br/>ACCESS CONTROL SYSTEM<br/>(BIOMETRIC) ON LEASE RENTAL BASIS</b> |
| 3  | LEASE RENTAL PERIOD   | <b>7 (Seven) Years</b>  |
| 4  | ESTIMATED VALUE OF EQUIPMENT TO<br>BE SUPPLIED                                | <b>Rs.45 lakhs</b>  |
| 5  | EARNEST MONEY DEPOSIT   | <b>Rs.1,00,000/-</b>  |
| 6  | LAST DATE AND TIME FOR THE<br>SUBMISSION OF DULY FILLED IN<br>TENDER DOCUMENT | <b>12.09.2014 at 1.00 pm</b>  |
| 7  | PLACE OF SUBMISSION OF TENDER<br>DOCUMENT ALONGWITH EMD                       | <b>Tender box identified as "HRM"</b>   |
| 8  | DATE AND TIME FOR TENDER OPENING  | <b>12.09.2014 at 1.30 pm</b>  |
| 9  | ELIGIBILITY CRITERIA  | <b>PLEASE REFER FORMAT 'A'</b>  |

CONTRACTOR

FOR BHEL

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ISSUED TO CONTRACTOR:



## Eligibility Criteria (FORMAT A)

| SL | PARTICULARS   | DETAILS |
|----|---|---------|
| 1  | <p>Qualification / Evaluation Criteria for Bidders:<br/>Bidders shall have successfully executed jobs of similar nature with any Govt. organizations /PSU / Public Limited Company/ Private limited companies of during <b>last 7 years</b> ending 31<sup>st</sup> July 2014 as per the following:</p> <ul style="list-style-type: none"> <li>a. Three similar completed works costing not less than the amount equal to 18 lakhs.</li> <li style="text-align: center;"><b>or</b></li> <li>b. Two similar completed works costing not less than the amount equal to 22.5 lakhs.</li> <li style="text-align: center;"><b>or</b></li> <li>c. One similar completed work costing not less than 36 lakhs.</li> </ul> <p><b>Similar work is defined by supply and installation of Biometric Access control system in any industry/company involved in manufacturing process.</b></p> |         |
| 2  | Performance / Commissioning Certificate for the above   |         |
| 3  | The bidder shall have a minimum average turnover of Rs 13.5 Lakhs per year for the last three consecutive years ending 31 <sup>st</sup> March of 2014. The Bidder shall submit Audited Balance Sheet and profit and loss account of the company for the last three consecutive years(2011-12, 2012-13, 2013-14) for proof of turnover   |         |
| 4  | The bidder shall either be a manufacturer or an authorized dealer /channel partner only for the original manufacturer and   |         |

|   |   |  |
|---|---|--|
|   | should submit documentary evidence for the same.  |  |
| 5 | The product shall be manufactured by a firm whose quality system is in compliance with I.S/ISO 9001 & IS 14001/ conforming to equivalent international standards. |  |
| 6 | Bidder should have valid registration under CST / VAT, Excise/ Service Tax Acts. The corresponding documentary proof to be furnished.                             |  |
| 7 | Bidder must have an established or shall give undertaking to set up service center with trained service personnel at Bangalore, in case of order placed.          |  |



CONTRACTOR

FOR BHEL

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ISSUED TO CONTRACTOR:

### **Scope of Supply :**

The scope of supply consists of design, supply, installation & commissioning of an access control system for Electronics System Division, a unit of BHEL, located at Electronic City, Bangalore.

The system will provide an integrated solution for time and attendance management and will consist of the following:

- 22 nos. of Readers (Contactless smart card & biometric) with 20 nos. of stainless steel turnstiles will be installed near the front gate. Fixing of the turnstiles and readers is in the vendor's scope.
- 2 nos. of readers (Contactless smart card & biometric) without turnstiles will be provided at the specified location at the time of installation.
- All necessary networking required for the installation is in the scope of the vendor. The networking will involve only CAT6 cabling as Fiber Optic cabling between the buildings will be provided by BHEL. Switches required will be provided by BHEL. Cabling from access control system to switches is in the scope of the vendor.
- UPS, Servers & software required for the management of the time & canteen records online will be supplied by the vendor.
- BHEL will provide a shelter for the 20 nos. of Turnstiles and 20 nos. of Readers. The vendor can inspect the site before quoting.
- The detail Bill of Material to be supplied is as given in specification sheet EDN:HR:ACAR:2014. The detail specifications for the equipment are provided in PART III.



CONTRACTOR

FOR BHEL

NOTE: The Tenderer shall return the duly filled in Tender document after affixing signature on all the pages.

ISSUED TO CONTRACTOR:

Ref:EDN/515/1415/ARBCS

**PRICE BID FORMAT**

**Bill of material along with the specifications**

| SI.No. | Item Description                        | Detailed specification under clause | Unit    | Quantity required | Unit Price (In Rupees) | Taxes (if any) | Unit price (with taxes) |
|--------|---|-------------------------------------|---------|-------------------|------------------------|----------------|-------------------------|
| 1      | Stainless steel tripod turnstiles       | SP01                                | nos     | 20                |                        |                |                         |
| 2      | Readers                                 | SP02                                | nos     | 22                |                        |                |                         |
| 3      | Enrollment kit                          | SP03                                | nos     | 1                 |                        |                |                         |
| 4      | Contactless Smart cards                 | SP04                                | nos     | 2500              |                        |                |                         |
| 5      | Networking                              | SP05                                | Lumpsum | 1 lot             |                        |                |                         |
| 6      | UPS                                     | SP06                                | nos     | 2                 |                        |                |                         |
| 7      | Server & backup                         | SP07                                | nos     | 1                 |                        |                |                         |
| 8      | Official/Personal switch & display      | SP08                                | nos     | 2                 |                        |                |                         |
| 9      | Time and Attendance Management Software | SP09                                | SET     | 1                 |                        |                |                         |

Note : L1 will be determined on total price and not on individual prices.

I agree for the BHEL payment terms and conditions.



CONTRACTOR (Seal and Signature)

FOR BHEL

NOTE: The Tenderer shall return the duly filled in Tender document after affixing signature on all the pages.

ISSUED TO CONTRACTOR:



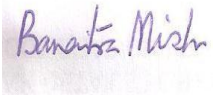

**SPECIFICATION FOR  
SUPPLY AND INSTALLATION OF  
ACCESS CONTROL SYSTEM**

EDN:HR:ACAR:2014

REV NO 00

Page 1 of 17

**REVISION HISTORY SHEET**

| REV NO. | DATE       | NATURE OF CHANGE | REASONS | CHANGED BY  | APPROVED BY   |
|---------|------------|------------------|---------|---|---|
| 00      | 18/08/2014 | NEW              |         | BANAMITRA MISHRA  | K PARTHIBAN   |
|         |            |                  |         |  |  |

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**SPECIFICATION FOR  
SUPPLY AND INSTALLATION OF  
ACCESS CONTROL SYSTEM**

EDN:HR:ACAR:2014

REV NO 00

Page 2 of 17

**Bill of material along with the specifications**

| Sl.No. | Item Description                        | Detailed specification under clause | Unit    | Quantity required |
|--------|---|-------------------------------------|---------|-------------------|
| 1      | Stainless steel tripod turnstiles       | SP01                                | nos     | 20                |
| 2      | Readers                                 | SP02                                | nos     | 22                |
| 3      | Enrollment kit                          | SP03                                | nos     | 1                 |
| 4      | Contactless Smart cards                 | SP04                                | nos     | 2500              |
| 5      | Networking                              | SP05                                | Lumpsum | 1 lot             |
| 6      | UPS                                     | SP06                                | nos     | 2                 |
| 7      | Server & backup                         | SP07                                | nos     | 1                 |
| 8      | Official/Personal switch & display      | SP08                                | nos     | 2                 |
| 9      | Time and Attendance Management Software | SP09                                | SET     | 1                 |

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|   |                                     |  |                             |
|---|-------------------------------------|--|-----------------------------|
| <b>PREPARED BY:</b><br>BANAMITRA MISHRA | <b>APPROVED BY :</b><br>K.PARTHIBAN | <b>ISSUED BY:</b><br>HUMAN RESOURCES<br>MANAGEMENT | <b>DATE :</b><br>18/08/2014 |
|---|-------------------------------------|--|-----------------------------|



**SPECIFICATION FOR  
SUPPLY AND INSTALLATION OF  
ACCESS CONTROL SYSTEM**

EDN:HR:ACAR:2014

REV NO 00

Page 3 of 17

*Banariza Mishra*

*[Signature]*

**1. Technical Specifications:**

**SP01 -Stainless steel tripod turnstiles**

|    | Specifications  | Requirements  | Vendor Compliance |
|----|---|---|-------------------|
| 1  | Tripod Turnstile  | Three Cylindrical Arms of polished Stainless Steel of 32 mm diameter.                               |                   |
| 2  | Hydraulic/ Motorised smooth Mechanism   | Yes   |                   |
| 3  | Locking mechanism   | Solenoid  |                   |
| 4  | Housing   | Stainless Steel   |                   |
| 5  | Mechanism to have Rotating Speed Adjustable / Configurable  | Yes   |                   |
| 6  | Allows only one user to enter at a time.  | Only One User   |                   |
| 7  | Turnstile Operates at input Voltage   | 230V AC 10 % 50 Hz single phase   |                   |
| 8  | All the parts and accessories should be of metal preferably the tong should be stainless steel ( should not be plastic or glass ) | Yes   |                   |
| 9  | The tripod arms should not have the sharp ends to catch clothing.   | Yes   |                   |
| 10 | Rotation :  | Rotate 120 Deg and Stop   |                   |
| 11 | Operation   | Bi Directional  |                   |
| 12 | Should be integrate able with the Bio metric Access/smart card Reader   | Yes   |                   |
| 13 | Fail Safe Mode:   | In case of power failure or switched off , tripod arms will be free to rotate in either directions. |                   |
| 14 | Installation  | By anchor bolt on the floor surface ( included in the vendor scope)                                 |                   |
| 15 | Dust proof body covering the mechanical system ensuring long life.  | Yes   |                   |
| 16 | The gates are electrically insulated to avoid electrical shock.   | Yes   |                   |

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|----|---------------------------------------|--|--|
| 17 | Walkway                               | 500 mm +50mm                               |  |
| 18 | Protection level                      | IP54                                       |  |
| 19 | All internal components               | Rust free alloys                           |  |
| 20 | Approximate dimension of the casework | Stainless steel<br>420x250x1030 mm         |  |
| 21 | Acceptable makes/Brands               | Shivananda Electronics or<br>Godrej, or L3 |  |

**End of SP01 -Stainless steel tripod turnstiles**

**SP02 – Readers**

|   | Specifications                  | Requirements  | Vendor Compliance |
|---|---------------------------------|---|-------------------|
| 1 | Access Mode                     | Finger Print reader with integrated contactless Smart Card reader (Mi fare)   |                   |
| 2 | Built in Smart Card Reader      | Yes   |                   |
| 3 | Finger Print Sensor, resolution | Optical Type, 500dpi  |                   |
| 4 | Finger Print Sensor Scan Area   | 15mm x 15 mm Min  |                   |
| 5 | Sensor surface                  | Hardened & coated to make it resistant to wear and tear and scratch proof.  |                   |
| 6 | Housing for finger print sensor | The finger print sensor must be covered suitably around the sensor so that it is not directly open to dust.   |                   |
| 7 | Finger print sensor             | Should angle so that the users should comfortably place their fingers.  |                   |
| 8 | Color LCD display               | Color LCD display screen of min. 3.5 inch, capable of displaying alpha-numeric text and images with photo IDs function enabling user friendly photo display. Display to be configurable by admin for each user. |                   |
| 9 | CPU                             | 32 bit processor  |                   |

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|----|---|--|--|
| 10 | External Control Required   | Only In/Out Mode Switch for deciding the direction of the access movement.   |  |
| 11 | Housing Design  | Rugged enclosure to provide reliable performance and resistance to vandalism. Preferably polycarbonate casing.                         |  |
| 12 | Should Send the signal to the access system/turnstile wrt to the input given. | Yes  |  |
| 3  | Verification/ Identification Time   | =< 2 Sec   |  |
| 14 | False Rejection Ratio   | 0.1%   |  |
| 15 | False Acceptance Ratio  | 0.001%   |  |
| 16 | Enrollment time   | <= 4 sec   |  |
| 17 | Finger Print Displacement   | +/- 30 Deg wrt finger guide to be provided   |  |
| 18 | Configurable percentage of fingerprint matching                               | Yes  |  |
| 19 | Card Read Range   | Up to 7 cm   |  |
| 20 | Communication Ports   | USB Port and TCP IP Port   |  |
| 21 | Communication Interface   | On board 10/100 MBPS Ethernet or higher  |  |
| 22 | Finger Print Template Storage   | 10,000 or Higher   |  |
| 23 | Transactions Event Storage  | 1,00,000 or Higher, Should Over write, First In, First Out   |  |
| 24 | Audio / Beeper on Finger Swipe for Access                                     | 70 db min, Audio be distinguishable voice message or should be 2 distinguishable beeps for access granted / denied (Multi tone buzzer) |  |
| 25 | LED indicator   | Red/Green- bipolar LED display to be provided.   |  |
| 26 | Operating Temperature Range   | 10 deg C to 45 deg C   |  |
| 27 | Operating humidity  | 20% to 80%   |  |
| 28 | Rechargeable Battery backup   | Min. 5 hours rechargeable  |  |
| 29 | Fingers per employee on the controller memory                                 | 5  |  |
| 30 | Fingers per employee on the card memory                                       | 2  |  |

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|----|---|--|--|
| 31 | Change of IP address of the reader  | Should be possible from the device itself without need for PC or lap top.  |  |
| 32 | Facility to trigger third party devices like siren  | Yes  |  |
| 33 | Communication Software Automatic Download to the Server, Real time update of transactions.          | Must be an integral part of the reader, Push technology is to be used, Transactions to be transferred to server as and when they occur. No manual intervention of any type must be required. |  |
| 34 | Admin Password for Enrollment and configuring   | Yes must be provided   |  |
| 35 | IN or OUT position of the switch to provide signal for direction of the turnstile operation.        | Yes  |  |
| 36 | Display Configurable by the admin   | Yes, Each user to be configurable.   |  |
| 37 | Finger Print Templates upload to Reader.  | Should be upload able to the reader from the server using TCP/IP port or USB port.   |  |
| 38 | In case of Loss of Power/absence of network connectivity for 5 hours, there should be no Data Loss. | Yes  |  |
| 39 | Mean time to repair   | < 24 hours   |  |
| 40 | Personal & official punches will be recorded for one system reader as per specification SPO7        | Yes  |  |
| 41 | Synchronization of time displays with readers, server and digital clocks                            | Time Displayed in the readers will be synchronized with the server time and the two IP based digital Clock displays already existing at EDN. These Clocks have network connectivity.         |  |
| 42 | Size and Dimensions   | Preferably 210 X 160 X 70mm or smaller.  |  |
| 43 | Operation Modes   | Biometric only, card only, biometric + card modes must be possible and configurable for each user in the system.   |  |



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| 44  | Others                  | 1) Any No of INs & OUTs per day shall be allowed.<br>2) For every IN Punch, there shall be an OUT Punch. 2 INs or 2 OUTs should not be allowed. Already Punched should appear if 2 INs or 2 outs are attempted.<br>4) If an expired Card or wrong Finger print is used, ACCESS DENIED should be displayed & a BEEP should sound.<br>5) Continuous 3 to 4 failed IN or OUT should Alert with an Alarm. |  |
| 45  | Mounting of the readers | 20 nos. of Readers will mounted on the turnstiles in the entrance area and 3 nos. of readers in the canteen area they will be wall mounted.   |  |
| <b>End of SP02 -Stainless steel tripod turnstiles</b> |                         |   |  |

**SP03 - Enrollment kit**

|    | Specifications                                  | Requirements                  | Vendor |
|----|---|-------------------------------|--------|
| 1  | Access Mode                                     | Finger/contactless smart card |        |
| 2  | Finger Print Sensor                             | Optical Type                  |        |
| 3  | Verification/ Identification Time               | < 2 Sec                       |        |
| 4  | False Rejection Ratio                           | 0.1%                          |        |
| 5  | False Acceptance Ratio                          | 0.001%                        |        |
| 6  | Enrollment time                                 | 4 sec                         |        |
| 7  | Finger Print Displacement                       | +/- 30 Deg wrt                |        |
| 8  | Configurable percentage of fingerprint matching | Yes                           |        |
| 9  | Card Read Range                                 | Up to 7 cm                    |        |
| 10 | Finger Print Template Storage                   | 10000 or Higher               |        |

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|                                     |  |           |  |
|-------------------------------------|--|-----------|--|
| 11                                  | Download to the Server using the communication port and the corresponding software.                                  | Automatic |  |
| 12                                  | Admin Password for Enrollment and configuring  | Available |  |
| 13                                  | Reader shall use technology that allows accurate fingerprint comparison on subjects with dirty(greasy or Oily) hands | Yes       |  |
| 14                                  | Finger Print Templates should be unloadable to the reader from the server using TCPIP port.                          | Yes       |  |
| <b>End of SP03 - Enrollment kit</b> |  |           |  |

### SP04 - Contactless Smart cards

|   | Specifications          | Requirements  | Vendor |
|---|-------------------------|---|--------|
| 1 | Card type               | Contactless smart cards (Mi Fare cards) that employ a radio frequency between card and reader without physical insertion of the card.   |        |
| 2 | Communication frequency | 13.56 MHz   |        |
| 3 | Standard                | ISO 14443 standard  |        |
| 4 | Memory capacity         | 4 KB  |        |
| 5 | Quantity                | 1000 cards  |        |
| 6 | Printing on card        | The name of the Company, employee, his photo and staff number will be printed on the card. The card will have a band of various colors based on grade levels. The exact matter and format for printing of the cards will be provided by BHEL. The photographs will be provided by BHEL. |        |
| 7 | Distance range          | Up to 7 cm  |        |



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|--|------------------------------|--|--|
| 8  | Card memory                  | The card memory to store the biometric data, name, staff number of the employee.   |  |
| 9  | Finger selection /Exceptions | Vendor to identify employees whose fingerprints are not identifiable by the Biometric Reader and such persons will be configured to allow access with only Contactless smart card. |  |
| <b>End of SP04 - Contactless Smart cards</b> |                              |  |  |

### SP05- Networking

|                                | Specifications  | Requirements   | Vendor |
|--------------------------------|---|--|--------|
| 1                              | All network cables to be of CAT 5e  | Yes  |        |
| 2                              | Cable lengths   | Cabling from switches to readers at gate 400 m approx.                       |        |
| 3                              | PVC 1 " pipe /casing & capping : to house the CAT 5 e cable wherever the networking is above the ground.      | 400 m approx.( within the swiping shelter / canteen area and reception area) |        |
| 4                              | GI Pipe 1 " : to house the CAT 5 e cable wherever the networking is below the ground/on ground in open areas. | 100 m approx. (Swiping shelter Gate area to switch at reception area.)       |        |
| 5                              | Switches  | To be provided by BHEL   |        |
| 6                              | CAT 5e I/O terminals with Face plate and Back Box   | To connect the respective readers as required.                               |        |
| 7                              | UTP cable laying through casing/piping wherever required.   | Yes  |        |
| <b>End of SP05- Networking</b> |   |  |        |

### SP06 - UPS Systems

#### (a)For the server

|   | Specifications      | Requirements | Vendor |
|---|---------------------|--------------|--------|
| 1 | Suitable for Server | 1 no.        |        |
| 2 | Back up time        | 1 hour       |        |



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|---|--|---|--|
| 3 | Compliance :                                     | IEC-60950-1: 2001 / IS<br>13252:1992 / UL |  |
| 4 | Battery type                                     | Maintenance Free                          |  |
| 5 | Battery Make :                                   | Exide/ AMCO /Standard                     |  |
| 6 | UPS makes  | APC, Emerson, Eaton, Power<br>ware        |  |
| 7 | 1 year warranty includes battery<br>replacement. | Yes                                       |  |

**(b)For the Readers:**

|   | <b>Specifications</b>                               | <b>Requirements</b>                       | <b>Vendor Compliance</b> |
|---|---|---|--------------------------|
| 1 | Suitable to Support Readers at the gate<br>(7 nos.) | 1 no.                                     |                          |
| 2 | Back up time  | =2 Hrs                                    |                          |
| 3 | Compliance :  | IEC-60950-1: 2001 / IS<br>13252:1992 / UL |                          |
| 4 | Battery Makes                                       | Exide, AMCO , STANDARD                    |                          |
| 5 | UPS makes   | APC, Emerson, Eaton,<br>Powerware         |                          |
| 6 | Battery type  | Maintenance Free                          |                          |
| 7 | One year warranty includes battery<br>replacement   |   |                          |

**End of SP06 - UPS Systems**

**SP07-Server & backup**

|    | <b>Specifications</b> | <b>Requirements</b>   | <b>Vendor</b> |
|----|-----------------------|---|---------------|
| 1. | Processor             | 2 Way 2U Rack server, Intel<br>Xeon Dual core processor,<br>2GHz or higher. |               |
| 2. | Memory                | 4 GB RAM expandable to 8<br>GB or higher                                    |               |
| 3. | Hard disk             | 3 x 72 GB SAS, 2.5" Hot swap<br>HDD, 8 Bays Standard, RAID<br>5.            |               |



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| 4.                                     | Monitor, Keyboard, mouse | 15" LCD TFT Monitor, 104 keys keyboard, 2 Button OEM Scroll Mouse.  |  |
| 5.                                     | Operating System         | Windows 2008 Server or Higher Or Red hat Linux latest version as required for the time and attendance software being supplied by you. |  |
| 6.                                     | NIC Ethernet Cards       | 2 nos.  |  |
| 7.                                     | DVD Writer               | 8x or higher  |  |
| 8.                                     | Server Makes             | HP, IBM, Dell   |  |
| 9.                                     | 24 U Rack                | The server is to be mounted in a 24 U rack with internal fans rack and internal vertical power strip.                                 |  |
| 10.                                    | Makes for Rack           | Acer, HP, IBM, APW, NetRack, HCL  |  |
| 11.                                    | USB backup device        | 1 TB external USB hard disk   |  |
| 12.                                    | Makes for USB hard disk  | Transcend, Seagate, Maxtor  |  |
| 13.                                    | Database                 | Oracle 10G or higher  |  |
| <b>End of SP07-Server &amp; backup</b> |                          |   |  |

### SP08 - Official And Personal Switch & display

|   | Specifications              | Requirements  | Vendor |
|---|-----------------------------|---|--------|
| 1 | Toggle Switch               | 1 No. Cable toggle switch with two options only Official or Personal Exit |        |
| 2 | LED Display                 | Displaying the Official / Personal as per the Switch Settings             |        |
| 3 | Display Size                | 4 " X 12 "  |        |
| 4 | Location of switch & displa | Security Office at gate   |        |



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| 5  |   | Out of the total 7 readers with turnstiles, 1 reader will be dedicated for personal/official out punch and will be provided with separate official / personal display depending on the toggle switch input stationed at the security office. Based on the toggle position the reader screen will indicate official/personal in its LED display and this data will be captured by the reader and must be available in the database for computation. |  |
| 6  | Employees forgetting to bring smart cards | For the entry employees forgetting to bring smart cards, The switch will be put in personal position by the security and then this reader shall allow entry of the employee with biometric verification only. It will also be recorded in the system that the employee has not brought his   |  |
| <b>SP08 - Official And Personal Switch &amp; display</b> |   |  |  |

**SP09 - Time and Attendance software**

|    | <b>Specifications</b>    | <b>Requirements</b>   | <b>Vendor</b> |
|----|--------------------------|---|---------------|
| 1. | Operating system         | Windows 2008 Server or Higher or Red hat Linux latest version as required for the time and attendance software being supplied by you. |               |
| 2. | Backend database         | ORACLE 10G or Higher  |               |
| 3. | Front End/ Input screens | All input & output screens must be web based accessible in Internet explorer & Mozilla Firefox.                                       |               |
| 4. |                          | Should be seamlessly integrated with the access   |               |





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| 5.  |                                       | Should be multiuser software  |  |
| 6.  | Softwares                             | Any software required for the time and attendance management software being supplied by the vendor must be supplied by the vendor. BHEL will not provide any supporting software. Antivirus for the server will be provided |  |
| 7.  |                                       | Company defined attendance policies must be configurable for  |  |
| 8.  |                                       | Admin must be able to mark employee attendance manually if the employee   |  |
| 9.  | Shift definition                      | Unlimited shifts to be possible, night shift, flexi shift, Time shift and auto shift should be  |  |
| 10. | Bus/Route numbers                     | Facility to enter bus numbers for a group of persons.   |  |
| 11. | Route timings                         | Facility to enter Route timings for a bus.  |  |
| 12. | Facility to enter OOD, tours and OT   | Yes   |  |
| 13. | File upload                           | Facility to upload leave from excel or text file provided through SAP-ESS   |  |
| 14. | Dash Board for HOD/admin              | HOD to be able to view the attendance details of his subordinates in dashboard.   |  |
| 15. | Addition of no. employees             | Unlimited Employee addition should be possible.   |  |
| 16. | .Integration                          | Seamless Integration with payroll software should be possible   |  |
| 17. | User defined grace periods/entry/exit | User defined grace periods for making late and early must be possible.  |  |
| 18. | Provision for back up data            | Provision to take regular backup of the data should be  |  |
| 19. | Up loading data as per BHEL format    | Facility to upload attendance data to local EDN system as per their format.   |  |



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| 20. | Various reports customisation   | Standard Reports shall be viewable by the administrator to analyse and investigate the unit operation.  |  |
| 21. | Maintenance of log  | The unit shall maintain a running log that can be downloaded to a computer at administrator's discretion.   |  |
| 22. | Event capture   | The log shall capture all events and the results of each. Event (positive or failed ID)   |  |
| 23. | Screens to be provided For Updating and corrections in the database to be possible with authorization logins/admin login.                     | IN /OUT timings, Personal and Official Gate Pass Entry, OOD Entries, Leave, Compensatory Offs, Holidays, Updating and Corrections for the earlier months must be possible.  |  |
| 24. | <p><b><u>Reports for the following to be provided:</u></b></p> <p>The reports must be available for daily monthly and for a period inputs</p> | <ol style="list-style-type: none"><li>1. Reports for attendance based on different selection criteria's like Date, time, Staff Nos, Cadre, department,.</li><li>2. Reports for displaying overtime.</li><li>3. Reports for displaying nonproductive hours.</li><li>4. Reports for use of the Canteen for lunch and breakfast.</li><li>5. Monthly Attendance for each Employee for salary Purpose.</li><li>6. For Supplementary payments purpose including the Overtime, Differential Attendance and</li><li>7. Number of employees present grade wise and total.</li><li>8. Reports for bus punctuality, route wise</li><li>9. Reports of late and early punches.</li><li>10. Reports for OODs/OT personal &amp; official</li></ol> |  |

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|---|---------------------------------------|--|--|
| 25.   | <b><u>Uploads to system</u></b>       | <ol style="list-style-type: none"><li>1. Provision is to be provided for entry of leave/OOD by administrator.</li><li>2. Option to upload leave data as provided by SAP ESS.</li><li>3. Uploads of holidays in a year</li></ol>  |  |
| 26.   | <b><u>Excel and Pdf outputs :</u></b> | <ol style="list-style-type: none"><li>1. All reports must be available as Excel and Pdf outputs also.</li><li>2. All reports must have print option also.</li><li>3. Excel output for upload to payroll system must be possible.</li><li>4. Payroll system output formats will be provided in BHEL. Two formats are required one for present</li></ol> |  |
| <b>End of SP09 - Time and Attendance software</b> |                                       |  |  |

### SP10 - Installation & Commissioning

| Sl. no | Requirements   | Vendor Compliance |
|--------|--|-------------------|
| 1.     | <b><u>Turnkey project</u></b> : This is a turnkey project and it is the responsibility of the vendor to design the system, supply, install and commission the system for satisfactory functioning. |                   |
| 2.     | Vendor shall install the Biometric Reader along with the Tripod Turnstile Mechanism  |                   |
| 3.     | <b><u>Newness Certificate</u></b> : All Equipment supplied and installed should be NEW and conforming to the contract technical specifications. The certificate of newness is to be furnished.     |                   |
| 4.     | <b><u>Communication between components</u></b> : Vendor to ensure that communication between readers, turnstiles and server is seamless.   |                   |
| 5.     | The system should be designed and looped in such a way that an employee can log in / out from any of the 7 nos. access gates.  |                   |
| 6.     | <b><u>The Official / Personal toggle Switch &amp; the reader</u></b> is to be installed at Security Centre at front gate, location will be provided by BHEL.                                       |                   |



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| 7.  | <b><u>Change over from the old System:</u></b> The switching over from the old system to the new system shall be done smoothly without any interruption and loss of data. All the attendance data from the old system will be ported to the new system before the start of the changeover. Changeover can be done department wise if required. |  |
| 8.  | The vendor must ensure that existing siren works with respect to the server timings and ensure that shift intimations take place through the same.   |  |
| 9.  | Existing IP based Digital clock displays( 2 nos.) must be integrated with the system.  |  |
| 10. | <b>Enrolment of finger prints of all the employees initially to be done by the vendor and training to be provided to HR persons for future enrollments.<br/>During enrollment minimum of two fingers prints per person one for each hand to be enrolled.</b>   |  |
| 11. | The Enrollment of the Employees will be done at BHEL-ESD, Electronics City, Bangalore.   |  |
| 12. | <b><u>Warranty:</u></b> Supplier / System Integrator should provide minimum warranty of one year for the entire system supplied including workmanship and should replace at free of cost.  |  |
| 13. | <b><u>Training:</u></b> Supplier / System Integrator should train BHEL Engineers / Personnel for operation of all the systems and software including enrollment.   |  |
| 14. | All tools, instrument required for installation & commissioning is to be brought by Supplier / System Integrator only.   |  |
| 15. | All safety and Security norms to be adhered by Supplier / System Integrator.   |  |
| 16. | The software should be customized to the rules and regulation of BHEL as per the specifications attached. Any clarification can be sought during the development and customization stage.  |  |
| 17. | The Supplier / System Integrator should ensure compatibility of their attendance system software with SAP.   |  |
| 18. | The software should have capabilities to block the specific employee / restrict the gates for the specific group on the need basis.  |  |
| 19. | The system has to be installed and commissioned within 4weeks from the date of the purchase order.   |  |



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**End of SP10 - Installation & Commissioning**

*Banendra Mishra*

*[Handwritten Signature]*

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