

**SP01 FOR Reader**

**SPECIFICATIONS**

**ANNEXURE -2**

| PARAMATERS   | BHEL Requirement  | Vendor Compliance |
|--|---|-------------------|
| Access Mode  | Finger Print or Smart Card  |                   |
| Built in Smart Card Reader   |   |                   |
| Finger Print Sensor  | Optical Type  |                   |
| Finger Print Sensor Scan Area  | 1.5 cm x 1.5 cm Min   |                   |
| Finger Print Sensor  | Should angle so that the users should comfortably place their fingers   |                   |
| External Control Required  | Only In/Out Mode Switch for deciding the direction of the access movement ( Any Other Controls or pads should be hidden from the common user) |                   |
| Should Send the signal to the access system/ turnstile wrt to the input given                |   |                   |
| Verification/ Identification Time  | < 2 Sec   |                   |
| False Rejection Ratio  | 0.1%  |                   |
| False Acceptance Ratio   | 0.001%  |                   |
| Enrollment time  | 4 sec   |                   |
| Finger Print Displacement  | +/- 30 Deg wrt finger guide provided  |                   |
| Configurable percentage of fingerprint matching  | Yes   |                   |
| Card Read Range  | 50 mm   |                   |
| Communication Ports  | USB Port and TCP IP Port  |                   |
| Communication Interface  | On board 10/100 MBPS Ethernet or higher   |                   |
| Finger Print Template Storage  | 10000 or Higher   |                   |
| Transactions Event Storage   | 30000 or Higher, Should Over write First In First Out   |                   |
| Audio / Beeper on Finger Swipe for Access  | 70 db min   |                   |
| Operating Temperature Range should be  | between 10 deg C to 45 deg to C   |                   |
| Battery should be rechargeable   | within 8 hours  |                   |
| Automatic Download to the Server using the communication port and the corresponding software |   |                   |
| Admin Password for Enrollment and configuring  |   |                   |
| Audio should be 2 distinguishable beeps for access granted / denied                          |   |                   |

|   |  |  |
|---|--|--|
| Display Graphic with Different Backlit(or Separate Green/ Red Indicator) for access granted and access denied, Contrast of the display should be easy to read and operate even at bright glare  |  |  |
| Depending on the IN or OUT arrangement in the switch, output of the reader to give direction of the turnstile Access should change .  |  |  |
| Reader shall use technology that allows accurate fingerprint comparison on subjects with dirty(greasy or Oily) hands  |  |  |
| Display Configurable by the admin   |  |  |
| Finger Print Templates should be uploadable to the reader from the server using TCPIP port  |  |  |
| In case of Loss of Power for 6 hours No Data Loss should happen   |  |  |
| Unit shall have a mean time to repair of less than 48 hours   |  |  |
| Out of the total 14 readers ,Dedicated 2 readers to be provided with separate official / personal display depending on the toggle switch input stationed at the security office.Proper indication at the reader should give accordingly Personal and Official |  |  |
| Time Displayed will be same as that of the server in order to synchronise the time between LARGE DISPLAY of Clock and that at the reader , server   |  |  |
| Unit shall operate in indoors in all weather conditions   |  |  |
| SIZE and DIMENSIONS   | Preferably 190 X 150 X 70mm or smaller , Should Fit in the existing infrastructure |  |

## SP02

| ENROLLMENT KIT                                  | BHEL Requirement | Vendor Compliance |
|---|------------------|-------------------|
| Access Mode                                     | Finger / RF Card |                   |
| Finger Print Sensor                             | Optical Type     |                   |
| Verification/ Identification Time               | < 2 Sec          |                   |
| False Rejection Ratio                           | 0.1%             |                   |
| False Acceptance Ratio                          | 0.001%           |                   |
| Enrollment time                                 | 4 sec            |                   |
| Finger Print Displacement                       | +/- 30 Deg wrt   |                   |
| Configurable percentage of fingerprint matching | Yes              |                   |
| Card Read Range                                 | 50 mm            |                   |

|  |                 |  |
|--|-----------------|--|
| Finger Print Template Storage  | 10000 or Higher |  |
| Download to the Server using the communication port and the corresponding software                                   | Automatic       |  |
| Admin Password for Enrollment and configuring  | Available       |  |
| Reader shall use technology that allows accurate fingerprint comparison on subjects with dirty(greasy or Oily) hands | Yes             |  |
| Finger Print Templates should be uploadable to the reader from the server using TCPIP port                           | Yes             |  |

**SP03**

Turnstile

| Specifications  | BHEL Requiremnts  | Vendor Compliance |
|---|---|-------------------|
|   |   |                   |
| Tripod Turnstile  | Three Cylindrical Arms preferably of Stainless Steel  |                   |
| Hydraulic/ Motorised smooth Mechanism   | Yes   |                   |
| Mechanism to have Rotating Speed Adjustable / Configurable  | Yes   |                   |
| Allows only one user to enter at a time.  | Only One User   |                   |
| Turnstile Operates at input Voltage   | 230V AC 10 % 50 Hz single phase   |                   |
| All the parts and accessories should be of metal preferably the tong should be stainless steel ( should not be plastic or glass ) | Yes   |                   |
| The tripod arms should not have the sharp ends to catch clothing .  | Yes   |                   |
| Rotation :  | Rotate 120 Deg and Stop   |                   |
| Operation   | Bi Directional  |                   |
| Available Space is  | 2 and Half Feet wide (0.75 m)   |                   |
| Should be integrable with the Bio metric Access Reader  | Yes   |                   |
| Fail Safe Mode:   | In case of power failure or switched off ,tripod arms will be free to rotate in either directions |                   |
| Turnstile Bolted to the floor using anchor bolt   | YEs   |                   |
| Dust proof body covering the mechanical system ensuring long life.  | Yes   |                   |
| The gates are electrically insulated to avoid electrical shock.   | Yes   |                   |
| MAKE and Model of:  | Sivananda Electronics- TS-1 /TS-1S or equivalent  |                   |

**SP04**

Communication Software

| BHEL Requiremnts  | Vendor Compliance |
|---|-------------------|
| Should be integral part of the reader so as to enable tel |                   |
| And download the data automatically in the prescribed     |                   |
| Should be able to download the data from the various t    |                   |
| also correspondingly upload the template data from th     |                   |

**SPECIFICA  
TIONS  
SP05**

**ANNEXURE -2**

Ethernet Switch for OFC

| BHEL Requiremnts  | Vendor Compliance |
|---|-------------------|
| 24 Nos. or more of 10/100Mbps Ethernet ports            |                   |
| 10 / 100 Mbs Speed                                      |                   |
| 2 Nos. of SFP based 1000Base LX Uplink Ports            |                   |
| Power Supply  |                   |
| MAKE : CISCO  |                   |
| The offered switch comes with the latest operating syst |                   |
| having full layer 2 features.                           |                   |

**SP06**

Ethernet S

| BHEL Requiremnts  | Vendor Compliance |
|---|-------------------|
| 24 Nos. of 10/100Mbps Ethernet ports                    |                   |
| 2 Nos. of fixed 10/100/1000BASE-T uplink ports          |                   |
| Power Supply  |                   |
| MAKE : CISCO  |                   |
| The offered switch comes with the latest operating syst |                   |
| having full layer 2 features.                           |                   |

**SP07**

Server

| BHEL Requiremnts  | Vendor Compliance |
|---|-------------------|
| Processor : Dual Core Intel Xeon 2GHz or higher   |                   |
| HDD:SEAGATE 500GB or Higher   |                   |
| MEMORY : 4 GB ECC DDR2 667 MHz SDRAM or more with 1 GB or higher memory modules.                  |                   |
| VGA: 1024x768 or higher resolution  |                   |
| Operating System:Windows 2008 Server or Higher  |                   |
| Hot pluggable redundant fans  |                   |
| NIC Ethernet Cards : 2 or more  |                   |
| DVD ROM :8x or higher DVD-CDRW Combo Drive  |                   |
| Extension slots 2 or more PCI-X / PCI-express slots   |                   |
| LAN Card with static IP for each controller , additional LAN Card SLOT along with additional CARD |                   |

For Data Storage / Stand alone Polling Software / Other Usage

|        |  |  |
|--------|--|--|
| Backup | Office 2003 Professional or Higher   |  |
|        | SQLSvrStd 2008 SNGL OLP NL / Oracle 8i or higher   |  |
|        | System should be automatically scheduled to copy the relevant data to the external hard disk / system provided |  |
|        | For this Purpose A USB Hard Disk ( 250 GB ) for such data copyig to be provided make                           |  |
|        | Make :HP/IBM   |  |

**SP08**

| PARAMETER   | BHEL Requiremnets   | Vendor Compliance |
|---|---|-------------------|
| CAT 5e Cabling                                    |   |                   |
| Cable   | 400 m appx  |                   |
| Laying of the Cable                               |   |                   |
| PVC 1 " pipe                                      | 200 m appx ( Rear gateto Medical Center, Center Gate to Canteen )                     |                   |
| GI Pipe 1 "                                       | 50 m appx underground ( Center Gate to Canteen and Center gate to Time Office server) |                   |
| Underground Cable Trench                          | 10 m appx( at both rear gates and center gates turnstile locations)                   |                   |
| MAKE  | Dlink/Tyco /Molex or Equivalent   |                   |
| 9U Wall Mount Rack with 5Skt Power Strip          | 3 Nos   |                   |
| CAT 5e I/O terminals with Face plate and Back Box | To connect the respective readers ( appx 40 )   |                   |

**SP09**

| Parameter                            | BHEL Requirement                           | Vendor Compliance |
|--------------------------------------|--|-------------------|
| Optic Fibre                          | 6 core ,Single Mode Armoured Outdoor Cable |                   |
| Make                                 | Dlink /Tyco or Equivalent                  |                   |
| Cable                                | 700 m                                      |                   |
| Laying of the Cable                  |  |                   |
| Underground Slit Cutting ( 1ft Deep) | 500 m appx                                 |                   |
| Including Road Cutting               |  |                   |
| Cable Laying and Filling             |  |                   |

|  |                                |       |  |
|--|--------------------------------|-------|--|
|  | UTP - Fibre Convertor - 2      |       |  |
|  | Sc Connectors                  |       |  |
|  | SC Couplers                    |       |  |
|  | OFC Patch Cord Duplex - 4 each |       |  |
|  | 24 Port OFC LIU Rack Mount     | 2 Nos |  |
|  | OFC termination                |       |  |

SP10

| Parameter | BHEL Requirement   | Vendor Compliance |
|-----------|--|-------------------|
| RF CARD   |  |                   |
|           | CONTACTLESS  |                   |
|           | 1 K Card   |                   |
|           | Smart Card Should be able to store data regarding employee ,with Read Write Capabilty type |                   |
|           | Should be sensed from 50 mm distance from the sensor / reader                              |                   |

SP11

## ANNEXURE -2

| Software | BHEL Requirements  | Vendor Compliance |
|----------|--|-------------------|
|          | Communication Software for automatically downloading the data on to the server                           |                   |
|          | Unit Should be capable of operating software using microsoft internet explorer standard browser          |                   |
| 1        | software   |                   |
| 2        | Data Security shall be accomplished by data encryption when saving or transmitting data                  |                   |
| 3        | Unit data security should be HIPPA compliant   |                   |
| 4        | Standard Reports shall be viewable by the administrator to analyse and investigate the unit operation    |                   |
| 5        | The unit shall maintain a running log that can be downloaded to a computer at administrators discretion. |                   |
|          | The log shall capture all events and the results of each event (positive or failed ID)                   |                   |

|                  |  |  |
|------------------|--|--|
| Front End        | Visual Basic / J2EE/ .NET / ASP.NET                                  |  |
| Backend (DB)     | ORACLE 9i or Higher  |  |
| Operating System | Windows 2008 Server or Higher  |  |
| Screens          |  |  |
| 1                | For Updating and corrections in the following fields of the database |  |
|                  | IN /OUT timings  |  |

|                         |  |  |
|-------------------------|--|--|
|                         | Personal and Official Gate Pass Entry  |  |
|                         | OOD Entries  |  |
|                         | Leave  |  |
|                         | Compensatory Offs  |  |
|                         | Updation and Corrections for the earlier months attendance                           |  |
|                         | including attendance, leave encashments ,paid holidays                               |  |
| Reports                 | Monthly Attendance for each Employee for salary purpose                              |  |
|                         | and Leave Encashments  |  |
|                         | For Supplementary payments purpose including the Overtime, Differential Attendance , |  |
|                         | and Leave Encashments  |  |
|                         | Reports for attendance based on different selection criterias like                   |  |
|                         | Reports for Canteen inputs and Medical Attendance also has to be developed           |  |
|                         | Date, time, Staff Nos, Cadre,Dept,   |  |
|                         |  |  |
| Leave Management System |  |  |
|                         | User Should be able to apply for leave Online  |  |
|                         | Recommendation and Sanction can also be done online                                  |  |
|                         | Correspondingly the Deduction can be made from the users balance                     |  |

**SP 12**

Official / Personal Display

|  |                   |
|--|-------------------|
| BHEL Requiremnts   | Vendor Compliance |
| Connected with the official And Personal Toggle Switch at the Security |                   |
| Displaying the Offical / Personal as per the Switch Settings           |                   |
| LED Display  |                   |
| Display Size 4 " X 12 "  |                   |

**SP 13**

Official / Personal Switch

|   |                   |
|---|-------------------|
| BHEL Requiremnts  | Vendor Compliance |
| Connected with the official And Personal Display                        |                   |
| Located at the Security Office  |                   |
| A toggle switch with two options only Offical or Personal Access / Exit |                   |

**SP 14**

Digital Clock

|                   |                   |
|-------------------|-------------------|
| BHEL Requirements | Vendor Compliance |
| Network Clock     |                   |

|  |  |
|--|--|
| Connected with the Server  |  |
| Displaying the Network Server Timings and the entire system timings to be synchronised automatically |  |
| LED Display  |  |
| Display Size 4 " X 12 "  |  |

**SP 15**

UPS A

| BHEL Requirements   | Vendor Compliance |
|---|-------------------|
| Suitable for Server   |                   |
| Should be able to give 1 hr Back up   |                   |
| Compliance : IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) |                   |
| Maintenance Free Battery  |                   |
| Battery Make : Excide   |                   |

**SP 16**

UPS B

| BHEL Requirements   | Vendor Compliance |
|---|-------------------|
| Suitable to Support Readers   |                   |
| Should be able to supply power and support maximum six readers                  |                   |
| The battery back up time should be 3 Hrs or more                                |                   |
| In case of Power Failure there should not be any data loss for at least 6 hours |                   |
| Compliance : IEC-60950-1: 2001 / IS 13252:1992 / UL (Underwriters Laboratories) |                   |
| Battery Make : Excide   |                   |
| Maintenance Free Battery  |                   |