Sub: Minor Fabrication – Invitation of Quotation for Fabrication, Supply, Installation and Commissioning of Electronic Door Access Control System

Dear Sir / Madam,

1. Quotations are invited for the minor fabrication job as per para 10.
2. Bidder shall quote for fabrication of these components as per BOQ, technical specifications and terms and condition in Annexure 1, 2 & 3.
3. Taxes shall be quoted separately.
4. The quotation must reach, Head, Control Instrumentation Division by 31/03/2020 and must be sent in a sealed envelope super-scribed with the above reference number and due date given above. The quotation should be only send by speed post / registered post. Quotation should also indicate GST No./ PAN No./Sale Tax and Service Tax Registration No. of the party.
5. The address on the envelope should read:
   The Head, Control Instrumentation Division,
   Bhabha Atomic Research Centre,
   R-321, ESC, North Site, Trombay, Mumbai - 400 085.
   Attn: Smt. Ranjana Kulgod
6. The bidder shall have to take an insurance policy against any material issued to him by the purchaser.
7. The fabrication work shall be subject to inspection by our engineer. The finished components shall not be despatched prior to approval by our engineer, at bidder’s works. Necessary inspection facilities should be provided to our engineers during a fabrication at bidder’s premises.
8. The bidder shall deliver the finished components after approval by our engineers, within FOUR MONTHS from the date of the firm purchase order issued to the bidder. The finished components and the scrap from the free issue material shall be delivered by the bidder at R-321, ESC, North Site, CnID, BARC, TROMBAY, Mumbai-85.
9. Head, Control Instrumentation Division, BARC, reserves the right to accept/reject any or all quotations without any reason.
10. Minor fabrication works:
    1) Fabrication, Supply, Installation and Commissioning of Electronic Door Access Control System as per BOQ, technical specification & term and condition in Annexure 1, 2 & 3.

Encls: 1. Bill of Quantity as Annex 1 (1 Sheet)
2. Technical Specifications as Annex 2 (in 5 Sheets)
3. General Instructions as Annex 3 (1 Sheet)
Annexure 1

BOQ for Fabrication, Supply, Installation and Commissioning of Electronic Door Access Control System

<table>
<thead>
<tr>
<th>SI No</th>
<th>items</th>
<th>Unit</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>POE RFID reader with PIN, Keyboard, display and Bell switch</td>
<td>Nos.</td>
<td>25</td>
</tr>
<tr>
<td>2.</td>
<td>Door strike latch lock with mounting accessories for wooden doors.</td>
<td>Nos.</td>
<td>25</td>
</tr>
<tr>
<td>3.</td>
<td>Junction Box for door RFID reader, including switch for exit, Doorbell, Wireless controller with remote.</td>
<td>Nos.</td>
<td>25</td>
</tr>
<tr>
<td>4.</td>
<td>i5 or better processor workstation with 8GB RAM, 512 GB SSD with Windows 10 professional edition or latest suitable for system</td>
<td>Nos.</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>24 Ports POE switch suitable for above system.</td>
<td>Nos.</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>Software of Access Control System for employee and visitor card support</td>
<td>Nos.</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Employee / visitor/ Contractor ID card registration device for ACS Software</td>
<td>Nos.</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>UPS 600VA</td>
<td>Nos.</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>9 U wall mount Network rack</td>
<td>Nos.</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>LAN cable CAT 6 as per actual requirement</td>
<td>Mtrs</td>
<td>300</td>
</tr>
<tr>
<td>11.</td>
<td>PVC Casing capping as per actual requirement</td>
<td>Mtrs.</td>
<td>80</td>
</tr>
<tr>
<td>12.</td>
<td>2&quot;,UPVC conduit as per actual requirement</td>
<td>Mtrs.</td>
<td>15</td>
</tr>
<tr>
<td>13.</td>
<td>Installation &amp; Commissioning of Readers, Door lock on Wooden Door Frame, UPS, ACS Application with PC, JB, Network switch with rack and LAN Cabling.</td>
<td>Lot</td>
<td>1</td>
</tr>
</tbody>
</table>

Ranjana Kulgod  
SO/G,PPSS,CnID,BARC

Anand Laddha  
SO/H,PPSS,CnID,BARC
Annexure 2

Technical Specifications

Fabrication, Supply, Installation and Commissioning of Electronic Door Access Control System

1. SCOPE OF WORK:

The scope of work is as follows:

a. Fabrication, Supply, Installation and commissioning of Electronic Door Access Control System as per technical specifications provided in this document.

b. Network cabling is required to be done above false ceiling in UPVC conduit and below false ceiling in casing capping. Readers are to be installed on entry walls and locks are to be installed on wooden doors or door frame. Ten doors are double doors and remaining are single door. Any fitting accessories required to fit the lock on door should be considered and supplied in installation. On double doors lock are to be fitted on fixed wooden door part and necessary fitting required should be included in quotation.

c. The system shall be properly packed and safely delivered to BARC.

2. Technical Specifications

3.1 Access control reader with RFID card, keyboard and display & bell switch

3.1.1 Reader with lock should work with POE power.

3.1.2 Module should support read write of Philips mifare RFID smart card

3.1.3 It should allow Mifare (ISO14443-A) standard card (1KB & 4KB) Read / Write facility.

3.1.4 Read range should 20 to 100 mm or better

3.1.5 Operating frequency should be 13.56 MHz.

3.1.6 Module firmware should be provided with user programmable “Key-set” facilities. It should support assigning separate key to each sector including sector 0.

3.1.7 Module firmware should support reading of BARC Employee and Visitor Card Format with Unit and Validity Check from the card.

3.1.8 Access Permission should be given based on verification of UID and BARC employee number.

3.1.9 Reader Should have illuminated sticker with “Show Card Here” legend

3.1.10 Reader should also support two or more potential free contact outputs and two or more opto-isolated inputs.

3.1.11 The relay on/off duration should be programmable.

3.1.12 Reader should include keypad for entering PIN.

3.1.13 Reader should have within enclosure a Bell button for Visitors.

3.1.14 Should support assigning different PIN to each employee and should be stored in reader for verification.

3.1.15 It should be possible to assign the PIN for each authorized employee at central controller and upload to reader.

3.1.16 Reader should have graphic display to provide date, time, card details and access verification result.

3.1.17 It should be possible to enroll card and PIN to controller database and upload t reader.

3.1.18 Quote separately for any hardware/software required for configuration of users.

3.1.19 Audio as well as visual announcement for verification results should be supported.
3.1.20 Reader should be compatible with existing user mfare RF-ID card of the department.
3.1.21 Reader should be configurable to operate in only card and card + PIN mode.
3.1.22 Communication with external controller on LAN should be supported.
3.1.23 Should support memory for storing at-least 1999 employee details including access permission, PIN and at-least 32000 transactions.
3.1.24 Operating Temperature: -10 to +50 Deg. C, RH 0-95%(Non-condensing)
3.1.25 Reader should not cause EMI interference to the sensitive electronic equipment in proximity to it.
3.1.26 IP 65 protection should be supported.

Make: Senergy or equivalent

3.2 Electro-Mechanical Electric Strike for Latch

3.2.1 Holding Force 300 Kg or better
3.2.2 Lock Should be suitable size for the installed latch
3.2.3 Stainless Steel Striker.
3.2.4 Fail Secure mode
3.2.5 12 or 24 VDC
3.2.6 Instantaneous release
3.2.7 10,00,000 or better cycles endurance rating
3.2.8 To be mounted on wooden door should include all accessories required for single and double door requirement.
3.2.9 Operating temperature - -20⁰ C - +60⁰ C
3.2.10 Humidity – 0-95 %
3.2.11 Fire rated for 4 hrs.
3.2.12 CE approved
3.2.13 UL1034 approved
3.2.14 IP 56

Make: Trimac/Enforcer or compatible

3.3 Junction Box including Exit Switch, doorbell & wireless remote

3.3.1 Junction box should accommodate exit switch, doorbell & wireless remote
3.3.2 Power indication LED visible on top cover.
3.3.3 Push to Open Door Legend on top cover
3.3.4 Push button should be flushed with top cover on wall mounted enclosure.
3.3.5 Signal connectors should be male/female type detachable connector
3.3.6 Reader cabling using 6 core cable
3.3.7 Should include bell for Visitor Notification.
3.3.8 Should include remote for Door Remote Release
3.3.9 Compatible to be used with the Access Control Reader.
3.3.10 Exit switch, doorbell should be Durable and robust
3.3.11 Reader should have switch for doorbell & doorbell should be installed in junction box.
3.3.12 Wireless Remote

3.3.12.1 Receiver
3.3.12.1.1 Input Voltage: DC10-14V
3.3.12.1.2 Standby Current: <5MA
3.3.12.1.3 RF Frequency: 433MHZ
3.3.12.1.4 RF Working mode: Super heterodyne receiver
3.3.12.1.7 Can store the number of remote control: 50
3.3.12.1.8 Working Voltage: DC 12V
3.3.12.1.9 Output Current: 10 A
3.3.12.1.10 Rated load: 10 A 250 VAC / 10 A 125 VAC
3.3.12.1.11 10 A 30 VDC / 10 A 28 VDC
3.3.12.1.12 Output: Normally open, Common, Normally closed
3.3.12.1.13 Dimension: 3.5 cm x 3 cm x 1.6 cm or smaller

3.3.12.2 Transmitter
3.3.12.2.1 Material: ABS Plastic
3.3.12.2.2 Battery: 23 A Battery (Battery should be included)
3.3.12.2.3 Operating voltage: 12 V
3.3.12.2.4 Frequency: 433 MHz
3.3.12.2.5 Reference distance: 50 meters Current job: 9 ~ 12 mA
3.3.12.2.6 Transmitting power: 10-15 mw
3.3.12.2.7 Frequency deviation: ±0.2 MHz
3.3.12.2.8 Size (LxWxH): 58 x 38 x 15 (mm) or smaller

3.4 Access Control Workstation
3.4.1 Processor - Intel Core i5 or better processor
3.4.2 Memory - 8 GB DDR4 2133 MHz or higher speed expandable to 16 GB
3.4.3 I/O ports - 4 USB ports (2.0/3.0), 10/100/1000 M bs LAN ports - 2 nos.
3.4.4 SSD + HDD controller - Minimum 4 SATA ports with 3.0 Gbps or higher speed
3.4.5 Power Supply - SMPS sufficient for fully populated hardware
3.4.6 Keyboard, Mouse and Display.
3.4.7 Hard disk - 500 GB SATA SSD 6 Gbps or higher
3.4.8 OS - Preloaded genuine Windows 10 professional 64 bit (OEM) latest version/Linux
latest version as per the OS required for ACS.
3.4.9 Antivirus - Latest antivirus software preloaded

Make: HP/Dell/IBM or compatible

3.5 24 Port Unmanaged POE+ Network Switch
3.5.1 24 x gigabit PoE+ ports, 1 x gigabit RJ45 port, LED indicators
3.5.2 Rack Mountable
3.5.3 Remote setup management and monitoring
3.5.4 PoE output power management support.
3.5.5 PoE port with 6 KV surge protection.
3.5.6 PoE standard IEEE 802.3at standard.
3.5.7 Standard IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3ab, and IEEE802.3z
3.5.8 Power Supply 100 ~ 240 VAC, 50/60 Hz
3.5.9 POE budget suitable to power all access control readers and lock connected on network.

Make: DLink/Netgear or compatible

3.6 Access Control Software
3.6.1 Software should provide configuration of all reader parameter on Ethernet LAN.
3.6.2 It should provide uploading and downloading of reader configuration and user data like
BARC Employee and Visitor Data.
3.6.3 User friendly adding/modifying and deleting of employee details.
3.6.4 Should support uploading of individual PIN of employee to reader.
3.6.5 Transaction records with search and display facility for today, one week, month should
be supported.

Annex 2: Technical Specifications of EDACS
3.6.6 Offline data should be downloaded and updated in database.
3.6.7 Headcount and employee/Visitor details of persons inside to be supported.
3.6.8 Personalization of card data should be supported.
3.6.9 Firmware upgrade and application and sector key uploading should be supported.

3.7 Employee / visitor/ Contractor ID card registration device for ACS Software
3.7.1 Compatible to system proposed

3.8 UPS with batteries
3.8.1 Battery should be Maintenance-free sealed Lead-Acid battery with suspended electrolyte: leak-proof keys holding capacity.
3.8.2 LED indications
3.8.3 Overload and low battery alarm
3.8.4 Input frequency support 47 - 63 Hz
3.8.5 Input voltage range for main operations support 145 - 290V
3.8.6 Output Watts up to 360Watts / 600VA or better
3.8.7 Battery internal in UPS
3.8.8 Surge Protection Up to 255Joules
3.8.9 Operating Temperature should 0 - 40 °C
3.8.10 Operating Relative Humidity Should 0 - 95 %
3.8.11 Compliance to BIS
3.8.12 Should be accommodated in 9U rack
Make: APC or compatible

3.9 9U, 19" Wall Mount Network Rack
3.9.1 Rack Standard compliance to EIA-310-E or IEC-60297-3-100 or DIN 41494
3.9.2 500 mm depth
3.9.3 PDU, 3x5A
3.9.4 230V Fan
3.9.5 Front Door with Lockable Toughened Glass Door
3.9.6 Equipment Mounting with DIN Standard Slots
3.9.7 Mounting Angle for 19" Mounting angles made of formed steel
3.9.8 Rack Finishing with Powder Coated
3.9.9 Rack Top and Bottom Cover with Welded to Frame
3.9.10 Rack with Vented and top & bottom Field Cable entry exit cut outs
3.9.11 IP20 protection
Make: APW/Rittal/Valrack

3.10 UTP CAT-6 Cable
3.10.1 Balanced Twisted-Pair insulated with high quality polyethylene PVC jacket.
3.10.2 4 pair, 23AWG gauge stranded copper
3.10.3 Insulation Resistance – 500 M ohm at 500 VDC
3.10.4 Dielectric strength – 1500 V for 1 min at 1 MHz
3.10.5 Mutual Capacitance 56 pF/100 m max
3.10.6 Jacket Material – PVC, Low smoke, flame retardant Zero Halogen
3.10.7 UV resistant- High microbial resistance

Annex 2: Technical Specifications of EDACS
Make: CommScope/Digilink or compatible

3.11 PVC Casing Capping

3.11.1 Casing Capping Size 38 mm x 16 mm, 1.2mm thick
3.11.2 Flame Retardant (FR) PVC material,
3.11.3 Ivory Color, Unplasticised formulation for prolong storage or usage, double lock,
3.11.4 ISI Marked as per IS 14927,
3.11.5 Highly durability, Resistance to oil and grease.

Make: Branded

3.12 UPVC Conduit

3.12.1 2", 1.2mm thick
3.12.2 Flame Retardant (FR) PVC material,
3.12.3 Ivory Color, Unplasticised formulation for prolong storage or usage, double lock,
3.12.4 ISI Marked as per IS 4985:2000,
3.12.5 Highly durable, Resistance to oil and grease.

Make: Precision or equivalent

3. General terms and conditions

3.1 Supplier should be developer of system based on similar products.
3.2 Supplier should quote separately any hardware or software required for complete installation, configuration and functioning of the system.
3.3 Supplier should have installed similar product at BARC previously and should have installed similar system at least at 5 locations.
3.4 Supplier should support the system after installation and provide one-year warranty.
3.5 Supplier should have security vetting of BARC and should have PVC for the persons required to visit BARC for installations.
3.6 GST exemption certificate shall be provided.
Annexure 3

General Instructions

Fabrication, Supply, Installation and Commissioning of Electronic Door Access Control System

Mandatory requirements

1. Quotation should contain item wise price for all items of our enquiry.
2. Quotation to be submitted considering completion of the work as per the delivery period in enquiry from the date of release of work order.
3. For installation & commissioning, I&C charges and tax to be quoted separately.
4. All the electronic components, hardware, cables & other items shall be brand new from reputed manufacturers procured from their authorized agents.

General requirements

5. Bidder can suggest equivalent or better make and model number against each suggested Instruments and same to be approved by the customer.
6. Total time to execute the job given above is from the date of work order placed which includes procurements of items, interfacing, cable laying, installation & commissioning and final integration testing.
7. No Free Issue Material will be provided to the supplier. Materials, tools, manpower etc required for the above work will not be supplied by the user. Supplier has to arrange the above on his own.
8. The supplier must incorporate minor changes in the design as required at the time of execution of work at no extra cost.
9. Supplier will submit prepare Network Drawing, Cable Schedule etc. for the site and send to the customer for approval. After approval from the customer only installation will be started.
10. The Supplier shall workout a detailed design to meet fabrication requirements and work description, quantity. Supplier will submit the final drawings, system manual and operation manual in hard copy and in a CD as part of supply.
11. Supplier shall submit the list of their clients, and catalogues or literature to support their quotation with the list of similar jobs carried out.
12. During work execution, the supplier shall follow standard practices & procedures for quality assurance.
13. Supplier should have similar work experience and along with the offer, shall submit the details of past experience with documentary proof.
14. Supplier shall appoint worker with high integrity and he will be responsible for his workers. The Supplier’s workers deputed to work inside BARC premises must have necessary Police Verification Certificate. It will be supplier’s responsibility to obtain police verification Certificate of such workers well in time, so that committed delivery schedule is not affected. All BARC security rules for contract workers will be applicable. The working hours for the work inside BARC shall be 9.30 a.m. to 5.30 p.m. on all working days. (Monday to Friday)
15. Sub contract: The supplier shall not sub-contract any or all the work without written consent from the indenter. The supplier shall be responsible to the indenter for all work, the sub-contractor of the supplier, if allowed by the indenter.
16. Quality surveillance, Inspection: The supplier will use standard quality items for fabrication of items. Used or recycled MS angles/sections/plates/GI pipes/conduits for cable laying will not be accepted.
17. For the items with detailed specification as given in Annexure 2 shall be subject to surveillance/ inspection by the indenter or his authorized representative. The Supplier shall quote make of all these items in his quotation.
18. Without above detailed information, Make, Model & specifications offer will be considered incomplete and may be rejected.