

**BHARATIYA RESERVE BANK NOTE MUDRAN PRIVATE LIMITED***(Wholly owned subsidiary of Reserve Bank of India)*

P.O. RBNML, Salboni, Dist. Paschim Medinipur, West Bengal, Pin Code-721132

**CORRIGENDUM NO. 8 dated 07/03/2022****TO OPEN TENDER ENQUIRY NO. 06/SAL/MMD-MAINT/2021-22 DATED 10/07/2021 FOR  
DESIGN, SUPPLY, INSTALLATION & COMMISSIONING OF IP CCTV SYSTEM****Tender No. : 06/SAL/MMD-MAINT/2021-22****Tender Name: DESIGN, SUPPLY, INSTALLATION & COMMISSIONING OF IP CCTV SYSTEM**

The following contents of the Tender No. given above are amended as per details given below.

**AMENDMENT IN DATES**

| <b>Sl. No.</b> | <b>Description</b>                           | <b>Original details as Per Tender</b>                     | <b>Details as per Corrigendum/ Amendment No. 7 dated 18/02/2022</b> | <b>Details as per Corrigendum/ Amendment No.8 dated 07/03/2022</b> | <b>Reference Page number of Tender</b> |
|----------------|--|---|---|--|--|
| <b>1.</b>      | Date of Sale of tender documents             | From <b>10/07/2021 to 09/08/2021</b> during office hours. | From <b>10/07/2021 to 21/03/2022</b> during office hours.           | From <b>10/07/2021 to 28/03/2022</b> during office hours.          | <b>4</b>                               |
| <b>2.</b>      | Closing date and time for receipt of tenders | <b>10/08/2021 at 11.30 hours.</b>                         | <b>22/03/2022 at 11.30 hours.</b>                                   | <b>29/03/2022 at 11.30 hours.</b>                                  | <b>1, 4</b>                            |
| <b>3.</b>      | Time and date of opening of tenders          | <b>10/08/2021 at 11.45 hours.</b>                         | <b>22/03/2022 at 11.45 hours.</b>                                   | <b>29/03/2022 at 11.45 hours.</b>                                  | <b>1,5,7,201</b>                       |

**Note: These changes are applicable to all other places of tender including Page No(s) given above.**

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| <b>Sl. No.</b> | <b>Pre Bid Sl. No.</b> | <b>Tender Page No.</b> | <b>As per Original Tender</b>   | <b>Amended and should be read as</b>  |
|----------------|------------------------|------------------------|---|---|
| <b>1</b>       | <b>19</b>              | <b>69</b>              | 4 COMPREHENSIVE CAMC<br>4) The successful bidder shall provide all software updates, releases, Version upgrades, New Versions and renewal of licenses etc. within 30 days of their availability at no additional cost to the BRBNMPL. | 4 COMPREHENSIVE CAMC<br>4) The successful bidder shall provide all software updates, releases, Version upgrades, New Versions and renewal of licenses etc. within 60 days of their availability at no additional cost to the BRBNMPL. |
| <b>2</b>       | <b>20</b>              | <b>70</b>              | 5 NATIONAL / INTERNATIONAL STANDARDS FOR MATERIAL<br>All materials supplied shall be of applicable national / international standards of FCC, UL, CE, BIS, IEC, EN, ROHS  | 5 NATIONAL / INTERNATIONAL STANDARDS FOR MATERIAL<br>All materials supplied shall be of applicable national / international standards of FCC/UL/ CE/ BIS/ IEC/ EN/ ROHS   |
|                | <b>51</b>              | <b>92</b>              | 8 Dynamic C/R-MEGA DCR<br>20. Certification-UL (USA) , FCC(USA) , CE(Europe)  | 8 Dynamic C/R- DCR<br>Certification-UL (USA)/ FCC(USA)/CE(Europe)   |
| <b>3</b>       | <b>21</b>              | <b>73</b>              | a.IP Based Outdoor Varifocal IR Bullet Cameras and IP Based IR Indoor HD Bullet Cameras   | a. IP Based Outdoor Varifocal IR Bullet Cameras and IP Based IR Indoor HD Bullet Cameras  |
|                | <b>22</b>              | <b>74</b>              | 4. Wide Dynamic Range-True WDR min 140 dB   | 4. Wide Dynamic Range-True WDR min 120 dB   |
|                | <b>138</b>             | <b>75</b>              | 7.Focus-Automatic Back Focus  | 7.Focus-Auto Focus  |
|                | <b>23</b>              | <b>76</b>              | 14.d. Alarm Event-Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering etc.,   | 14.d. Alarm Event-Events / alerts send via SSH, HTTP, email, Pre-Post alarm video buffering etc.,   |
|                | <b>9</b>               | <b>77</b>              | 28.Event Notification-Record in SD Card/ FTP, Relay Output, Snapshot  | 28.Event Notification-Record in SD Card/ SSH/HTTP, Relay Output, Snapshot etc   |

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| Sl. No.  | Pre Bid Sl. No. | Tender Page No. | As per Original Tender  | Amended and should be read as  |
|----------|-----------------|-----------------|---|--|
| <b>4</b> | <b>4</b>        | <b>73</b>       | 15.c. Alarm Event-Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering etc.,   | 15.C. Alarm Event-Events / alerts send via SSH/ HTTP/ email/ Pre-Post alarm video buffering etc.,  |
|          | <b>5</b>        | <b>73</b>       | 23. ONVIF Network Interface Specifications-ONVIF Profile S, G, Q and T Compliant  | 23. ONVIF Network Interface Specifications-ONVIF Profile S, G and T Compliant  |
|          | <b>140</b>      | <b>77</b>       | 29 Alarm Input/ Output - 7 Inputs, 1 Output   | 29 Alarm Input/ Output - 3 Inputs, 1 Output  |
|          | <b>34</b>       | <b>89</b>       | Certification: EN55022 class A, FCC class A, VCCI class A, EN55024, UL, cUL, TUV. RoHS Compliant and Energy Efficient Ethernet compliant (EEE)  | Certification: EN55022 class A, FCC class A, VCCI class A/equivalent, EN55024/ UL/ cUL/ TUV/ RoHS Compliant and Energy Efficient Ethernet compliant (EEE)  |
| <b>5</b> | <b>27</b>       | <b>82</b>       | Client software should be able to overlay the following information on every video panel:<br>1. FPS<br>2. Codec info<br>3. Resolution<br>4. Multi-cast status<br>5. Hardware Acceleration Status<br>6. Lost Frames<br>7. Motion Detected<br>8. Camera nomenclature (Camera name, Location etc.) | Client software should be able to overlay the following information on every video panel:<br>a) FPS<br>b) Codec info :<br>c) Resolution :<br>d) Hardware Acceleration Status :<br>e) Motion Detected :<br>Displayed as symbol.<br>f) Camera nomenclature (Camera name, , Location etc) :<br>g) Time and Date |
| <b>6</b> | <b>32</b>       | <b>88</b>       | b.L2 Network Switch: Commercial grade-Resiliency The Min Virtual chassis bandwidth between the switches shall be min of 40 Gbps and should support the redundancy across the geographically diversified locations (min 800 Mtrs),   | b.L2 Network Switch: Commercial grade-Resiliency The stacking bandwidth of the switches shall be min of 40 Gbps and should support the redundancy across the geographically diversified locations (min 800 Mtrs), also Vendors should offer required   |

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|----------------|------------------------|------------------------|--|--|
|                |                        |                        | also Vendors should offer required cables/modules from day 1   | cables/modules from day 1  |
| <b>7</b>       | <b>38</b>              | <b>89</b>              | L2 Switch : Outdoor-Industrial Grade (8 port)<br>Port Density: Rugged outdoor Din Rail mountable switch with Min 8*10/100/1000 Base-T port of POE + and 4* 10 GB Fiber slots with suitable AC PSU; dual power inputs. 4 nos 10 GB SM modules should be loaded.                       | L2 Switch : Outdoor-Industrial Grade (8 port)<br>Port Density: Rugged outdoor Din Rail mountable switch with Min 8*10/100/1000 Base-T port of POE + and 2* 1 GB Fiber slots with suitable AC PSU; dual power inputs. 2 nos 1 GB SM modules should be loaded.                       |
|                | <b>125</b>             | <b>91</b>              | L2 Switch : Outdoor-Industrial Grade (4 port)<br>Port Density & Hardware Requirement: Rugged outdoor Din Rail mountable switch with Min 4*10/100/1000 Base-T port of POE + and 2* 10 GB Fibre slots with suitable AC PSU; dual power inputs. 2 nos 10GB SM modules should be loaded. | L2 Switch : Outdoor-Industrial Grade (4 port)<br>Port Density & Hardware Requirement: Rugged outdoor Din Rail mountable switch with Min 4*10/100/1000 Base-T port of POE + and 2* 1 GB Fibre slots with suitable AC PSU; dual power inputs. 2 nos 1GB SM modules should be loaded. |
|                | <b>40</b>              | <b>91</b>              | L2 Switch : Outdoor-Industrial Grade (4 port)<br>Performance & System Capacity: The switch should have min. 24 Gbps of switching capacity & min. 17 Mbps of forwarding rate. Switch should support 16K MAC addresses   | L2 Switch : Outdoor-Industrial Grade (4 port) (8 port)<br>Performance & System Capacity: The switch should have min. 24 Gbps of switching capacity & min. 17 Mbps of forwarding rate. Switch shall support 8K MAC addresses  |
| <b>8</b>       | <b>42</b>              | <b>91</b>              | L2 Switch : Outdoor-Industrial Grade (8 port)<br>5. Switch should support 16K MAC addresses  |  |
|                | <b>126</b>             | <b>91</b>              |  |  |
|                | <b>122</b>             | <b>90</b>              |  |  |

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|----------------|---|------------------------|---|---|
| <b>9</b>       | <b>53<br/>145</b>                             | <b>86</b>              | d.SAN Storage<br>High Availability and Storage Processors:<br>Each Controller must have minimum Intel E5-2600 minimum 8 Core Processors per controller or equivalent and 64GB Memory  | d.SAN Storage<br>High Availability and Storage Processors:<br>Each Controller must have minimum Intel E5-2600 minimum 8 Core Processors per controller or equivalent processor and 64GB Memory                                    |
| <b>10</b>      | <b>55<br/>157<br/><br/>59<br/>158<br/>160</b> | <b>86<br/><br/>87</b>  | 6. VMS Validation on the Storage System<br>The Proposed Storage System should be tested and validated jointly by the VMS Application OEM & Storage OEM. The Validation white paper for the same to be submitted as a part for the Storage System Compliance documentation.<br><br>12. Storage Validation Test report<br>Storage OEM should have a test & validation document supporting the bandwidth mentioned with the VMS application supplied by the bidder | 6. VMS Validation on the Storage System<br>The System integrator has to test and validate the Bandwidth mentioned for VMS application compatibility with the storage as per the total requirement of the project for 750 cameras. |
| <b>11</b>      | <b>57</b>                                     | <b>87</b>              | Server Operating System Support<br>Windows Server 2008, Windows Server 2008 R2+, Windows Server 2012, Windows Server 2016 R2, Windows Server 2019 and latest release, Microsoft Hyper-V, Novell Suse Enterprise, Oracle, RedHat Enterprise, & x86 VMware® vSphere   | Server Operating System Support<br>Windows Server 2012, Windows Server 2016 R2, Windows Server 2019 and latest release, Microsoft Hyper-V, Novell Suse Enterprise, Oracle, RedHat Enterprise, & x86 VMware® vSphere               |

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|---------|-----------------|-----------------|---|--|
| 12      | 62              | 95              | b. EQUIPMENT RACK – 12U for L2 Switch (Wall Mounted)<br>1. Frame structure: Deep Powder coated Steel Frame Rack 2590x600x450 (HxWxD), 2 mm thick angle.   | b. EQUIPMENT RACK – 12U for L2 Switch (Wall Mounted)<br>1. Frame structure: Deep Powder coated Steel Frame Rack 600x600x600 (HxWxD), 2 mm thick angle.   |
| 13      | 134<br>151      | 73              | a. IP Based Outdoor Varifocal IR Bullet Cameras.<br><br>12 b) Video Resolution : > 2 MP (1920x1080)   | a. IP Based Outdoor Varifocal IR Bullet Cameras.<br><br>b) Video Resolution : >= 2 MP (1920x1080)  |
| 14      | 137<br>154      | 75              | b. IP Based IR Indoor HD Bullet Cameras.<br><br>12. e) Quad H.265/H264 (Recording & Viewing)  | b. IP Based IR Indoor HD Bullet Cameras.<br><br>Tri-stream<br>H.265/H.264(recording and Viewing) at minimum 30 fps and at 1080 resolution  |
| 15      | 139             | 76              | c. IP Network Megapixel PTZ Full HD Camera for Indoor/Outdoor application<br>21) Video Streams : Minimum 3 streams (2 Configurable Primary Streams & 1 Service stream)<br>Primary Streams:1080p/720p/ D1 @ 25/30fps Service Stream: 720p/D1/CIF @ 15/25/30fps | c. IP Network Megapixel PTZ Full HD Camera for Indoor/Outdoor application<br>21) Video Streams : Minimum 3 streams (2 Configurable Primary Streams & 1 Service stream)<br>Primary Streams:1080p @ 25/30 fps Service Stream: 720p/D1/CIF @ 15/25/30fps  |
| 16      | 142             | 60              | i) v. In case storage server not available the video data from <b>NVR should be transferred when SAN storage is up.</b>   | BRBNMPL clarified that IP CCTV video recording has to be parallelly stored in Camera Server / Recording Server (7 days) as well as SAN Storage (90 days). In case SAN storage server not available for storing due to break down etc, the video data from Camera server / recording server should be transferred when SAN storage is up. |

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| <b>Sl. No.</b> | <b>Pre Bid Sl. No.</b> | <b>Tender Page No.</b> | <b>As per Original Tender</b>  | <b>Modification / New Insertion</b>  |
|----------------|------------------------|------------------------|--|--|
| <b>1</b>       | <b>13</b>              | <b>New Insertion</b>   | Redundancy required in Database servers and Recording Servers is N:1 NIT at Sl. No. 53 at pg 13 of original tender       | Bidder shall provide N:1 for VMS servers, Database servers and Recording Servers. Storage in servers and SAN storage Shall be configured with minimum RAID 6. The Power(SMPS) redundancy in servers and switches shall be N:N.The cable (OFC) shall have redundancy of N:N at the LIU termination and ready to plug and play. The switch racks also shall have Redundancy power source for Switches and servers accommodated in the rack. The bidder has to provide minimum above redundancy but free to design better than the above redundancy |
| <b>2</b>       | <b>73</b>              | <b>65</b>              | 8 nos of manpower deployment:<br><br>1. Network administrator<br>2. Domain administrator<br>3. Residential engineers     | 8 nos of manpower deployment:<br><br>1. Network administrator--Wage rate Shall be minimum Highly skilled<br>2. Domain administrator-Wage rate Shall be minimum Highly skilled<br>3. Residential engineers-Wage rate Shall be minimum skilled   |
| <b>3</b>       | <b>47</b>              | <b>101</b>             | BOQ<br>22.Supply & installation of Online UPS 30 KVA for Control room equipment and centralized L2 switch installations. | BOQ<br>22.Supply & installation of Online UPS 30 KVA for Control room equipment and centralized L2 switch installations. UPS shall have 3 phase input and 3 ph output. Battery Backup minimum 1 hour is required with 12V, 150AH batteries<br>Technical specifications of 30 KVA UPS - enclosed as Annexure-1 (02 Pages).  |

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|----------------|------------------------|------------------------|---|--|
| <b>4</b>       | <b>48</b>              | <b>101</b>             | BOQ<br>23. Supply & installation of Online UPS 2 KVA for distributed L2 switch installations at various locations   | BOQ<br>Supply & installation of Online UPS 2 KVA for distributed L2 switch installations at various locations. UPS shall have single phase input single phase output with battery Backup of Minimum 1 hour. Technical specifications of 2 KVA UPS - enclosed as Annexure-2 (01 Page).  |
| <b>5</b>       |                        | <b>109</b>             | Section IX: Qualification / Eligibility Criteria – Documentary Proof to be obtained: Documentary proof (copies of POs executed) for the above qualifying criterion should be submitted along with your offer duly signed by authorized signatory of your company. | Documentary proof (work completion certificates along with the Copies of PO's executed) should be submitted along with your offer duly signed by authorized signatory of your company.   |
| <b>6</b>       |                        | <b>New Insertion</b>   | Section I - NIT   | Bidder should submit duly stamped and signed<br><br>a) Annexure-3 (02 Pages) - Containing Model Clauses for Tenders and Declaration regarding "Restrictions on Public Procurement from a Bidder of a Country which shares a Land Border with India".<br><br>b) Annexure-4 (01 Page) - Modification in SIT Provisions under Section III: Special Instructions to Tenderers (SIT) [Page No. 31 of tender] w.r.t. "Restrictions on Public Procurement from countries sharing a land border with India". |



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| <b>Sl. No.</b> | <b>Pre Bid Sl. No.</b> | <b>Tender Page No.</b> | <b>As per Original Tender</b> | <b>Modification / New Insertion</b>   |
|----------------|------------------------|------------------------|-------------------------------|---|
|                |                        |                        |                               | c) Annexure-5 (01 Page) - Modification in SCC Provisions under Section V: Special Conditions of Contract (SCC) [Page No. 50 of tender] w.r.t. "Restrictions on Public Procurement from countries sharing a land border with India". |

**Bidders shall submit copy of minutes of pre bid meeting & this Corrigendum duly sealed & signed along with their Bid.**

**Note: These changes are applicable at all other places of tender including Page Nos. given above.**

**All other terms and conditions remain unchanged.**

***This Corrigendum/Amendment forms part of the referred Tender & is to be submitted along with Techno-Commercial Bid (Part – I) duly signed and sealed by authorised signatory.***

***Bidders who have already submitted their sealed offer have to submit all the pages of this Corrigendum/Amendment duly signed and sealed in a separate envelope super scribing as "CORRIGENDUM NO. 8 TO OPEN TENDER ENQUIRY NO. 06/SAL/MMD-MAINT/2021-22 DATED 10/07/2021 FOR DESIGN, SUPPLY, INSTALLATION & COMMISSIONING OF IP CCTV SYSTEM" by authorized signatory within the closing date of submission i.e. 29/03/2022.***

Yours faithfully,  
For & on behalf of BRBNMPL, Salboni

--sd--  
(P.K. Biswal)  
Deputy General Manager

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021 for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-1**

**TECHNICAL SPECIFICATION OF 30KVA UPS 3PHASE INPUT 3PHASE OUTPUT**

| <b>A</b> | <b>INPUT</b>  |  |
|----------|---|--|
| 1        | Input voltage tolerance                                   | 320 to 470Vac at 100% load   |
| 2        | Input frequency   | 50 Hz  |
| 3        | Current THD   | <=3%   |
| 4        | Control   | Fully Digital, DSP PWM technology  |
| 5        | Event Log   | The Event Log shall store up to 2000 in the front display panel  |
| 6        | Topology  | Level 3; <b>True On-Line Double Conversion type</b> UPS system. The UPS shall have rectifier, inverters with latest technology IGBT based sine wave PWM, along with in-built static and maintenance bypass.          |
| <b>B</b> | <b>OUTPUT</b>   |  |
| 7        | Nominal Module full load rating KVA                       | 30KVA  |
| 8        | Rated voltage   | 415V 3Phase @ 50Hz with +/-1% variation  |
| 9        | Output power factor                                       | Unity  |
| 10       | Output power factor range                                 | 0.5 lagging to unity without any KVA derating  |
| 11       | Internal oscillator stability                             | +/- 0.1 Hz.  |
| 12       | Mains synchronization tracking                            | +/- 1 Hz (settable to +/-2 Hz)   |
| 13       | Output voltage harmonics                                  | < 1%   |
| 14       | Crest Factor  | 3: 1 accordingly with IEC 62 040-3   |
| 15       | Efficiency (Online mode)                                  | 94% or better  |
| 16       | Overload capability<br>i) 10 min<br>ii) 60 sec            | i) 115% of load rate<br>ii) 135% of load rate  |
| 17       | Transfer Time from inverter to bypass and vice versa.     | Approx. 0 msec.  |
| 18       | Inbuilt Manual by pass switch                             | Required   |
| 19       | Inbuilt Static by pass switch                             | Required   |
| 20       | Emergency Stop  | Emergency Stop Button on its Front panel, which also trips Battery Circuit Breaker.  |
| 21       | Back feed protection                                      | Required   |
| 23       | Isolation Transformer                                     | Required at input side   |
| 24       | Self-Capacity test  | Capacity of the UPS can check at site without connecting any external load.  |
| <b>C</b> | <b>DC CHARACTERISTICS</b>                                 |  |
| 25       | Nominal DC bus voltage                                    | Min 415V   |
| 26       | DC voltage stability                                      | +/- 1 %  |
| 27       | DC ripple   | < 1 % (with Battery connected)   |
| 28       | <b>Battery backup time</b>                                | Minimum 60 minutes (SMF VRLA Lead acid batteries)  |
| 29       | <b>In-built Intelligent Battery Management integrated</b> | Automatic Programmed as well as Manual Online Testing of the Battery Bank from UPS Front Panel LCD. Depth and Time of Discharge, user settable. Post Test status indication on Front Panel LCD Screen of UPS Module. |
| 30       | Battery isolation   | Battery circuit breaker  |
| 31       | Automatic Battery testing                                 | Automatic battery testing from front display   |
| 32       | Communication   | RS 232/ Modbus   |

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021 for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-1**

|          |   |
|----------|---|
| <b>D</b> | <b>CONTROLS</b>   |
| 33       | Charger input Isolator  |
| 34       | Battery circuit breaker (mounted separately in its own enclosure)   |
| 35       | Inverter output Isolator  |
| 36       | Bypass line Isolator  |
| 37       | Maintenance Bypass Isolator   |
| 38       | Alarm acknowledge / Reset button  |
| 39       | Inverter On-Off Push button for Manual switching On/Off of the Inverter   |
| 40       | Emergency off push button   |
| <b>E</b> | <b>MEASURING INSTRUMENTS</b>  |
| 41       | LCD panel for Measuring Output voltages, Output currents and Frequency, Battery Voltage and Charging / Discharging current. |
| 42       | LCD panel displays status of the Battery charge status (in %).  |
| 43       | Display- Digital LCD type   |
| <b>G</b> | <b>PROTECTIONS</b>  |
| 44       | RC surge suppressor.  |
| 45       | Sustained under voltage on input side   |
| 46       | Phase loss on input side.   |
| 47       | Negative sequence on input side & bypass  |
| 48       | Semiconductor fuses in the lines for rectifier thyristors   |
| 49       | Snubber circuit for device dv/dt protection   |
| 50       | Charger input current limit   |
| 60       | Battery current limit   |
| 61       | DC over voltage   |
| 62       | Low battery   |
| 63       | Overload  |
| 64       | Over temperature for the inverter   |
| 65       | HRC fuses in the control circuit  |
| <b>H</b> | Battery rack: Suitable MS rack for battery bank   |

**Environmental Conditions:**

|                       |                                 |
|-----------------------|---------------------------------|
| Panel type            | Floor mounted front access only |
| Operating temperature | 0 – 40 deg.C <b>continuous</b>  |
| Relative humidity     | 0- 95 % Non-condensing          |
| Storage temp.         | From 0 to + 55 deg. C.          |
| IP protection         | Min. IP 20                      |

|               |   |
|---------------|---|
| Certification | EN 62040-1, EN 62040-2, EN 62040-2, ISO 9001, ISO 14001 |
|---------------|---|

**Documents:**

- Single Line diagram of the unit
- General arrangement drawings
- Main and control circuit schematic diagrams
- Test reports of batteries
- Installation and operating manual
- Engineering calculation sheet for selection of AH rating and no. of cells of the battery bank required as per our requirement

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021  
for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-2**

**2 KVA UPS Technical specifications**

| Sr.NO  | DESCRIPTION                                       | Technical Specification   |
|--|---|---|
| 1  | Capacity  | 2 KVA   |
| 2  | Design  | True online double conversion design  |
| <b>Input Characteristics.</b>                      |   |   |
| 3  | Nominal Input Voltage                             | 230 Vrms Single phase   |
| 4  | Nominal Input Frequency                           | 50Hz  |
| 5  | Input Power Factor                                | 0.99  |
| 6  | Type of Rectifier                                 | IGBT Based PWM Rectifier  |
| 7  | Current Protection                                | With Fuse.  |
| <b>Battery Parameters.</b>                         |   |   |
| 8  | Charging Method                                   | Constant voltage constant current (CVCC)  |
| 9  | Charging current Capacity                         | Settable 1/2/4/6  |
| 10   | Type of Batteries                                 | SMF VRLA Lead acid  |
| 11   | Battery Back up                                   | Minimum 60 minutes  |
| <b>Output Parameters.</b>                          |   |   |
| 12   | Nominal Output voltage                            | 230 Volts   |
| 13   | Output Frequency                                  | Frequency Range (Batt. Mode): 50 Hz $\pm$ 0.1 Hz ;  |
| 14   | Output Waveform                                   | Pure sine wave  |
| 15   | Total Harmonic distortion (THD)                   | Less than 3%  |
| 16   | Inverter  | IGBT based PWM with Instantaneous Sine wave control   |
| 17   | Power Rating                                      | 2 KVA   |
| 18   | Crest factor                                      | 3:1 accordingly with IEC 62 040-3   |
| 19   | Duty.   | Continuous duty   |
| 20   | Frequency synchronization Band for Static. Bypass | 46 - 54Hz   |
| 21   | Transfer (Inverter to Bypass)                     | 0 ms  |
| 22   | Retransfer ( Bypass to Inverter)                  | 0 ms  |
| 23   | Automatic Bypass                                  | Inbuilt   |
| 24   | Overall efficiency (AC to AC)                     | >90 %.  |
| <b>Miscellaneous Function</b>                      |   |   |
| 25   | Intelligent Fans Speed Control                    | Yes.  |
| 26   | Auto Restart Function                             | Yes.  |
| <b>Physical and Environmental Characteristics.</b> |   |   |
| 27   | Ambient Temperature                               | 0 - 50 Deg C  |
| 28   | Storage Temperature                               | -15°C~60°C  |
| 29   | Humidity  | 0-95 % non-condensing   |
| 30   | Enclosure Protection Grade                        | IP 20   |
| 31   | Cooling   | Forced Air  |
| <b>Metering (Digital display)</b>                  |   |   |
| 32   | Input voltage                                     | Advanced LCD based Display System, able to monitor Input Voltage/Battery Voltage/Output Voltage/Output Frequency/Input Frequency/Ambient Temperature. |
| 33   | Battery voltage                                   |   |
| 34   | Output voltage                                    |   |
| 35   | Output current                                    |   |
| 36   | Output frequency                                  |   |
| 37   | Input Frequency                                   |   |
| 38   | Heat sink temperature                             |   |
| 39   | <b>Fault indicated on Digital Display Alarms</b>  | LED indication display  |
| 40   | input fail  | Inbuilt and accessible on LCD Display.  |
| 41   | Battery Low                                       |   |
| 42   | Transfer to bypass and system fault               |   |
| 43   | LED Indications                                   |   |
| 44   | Protection  | Overload/Short Ckt/Battery Deep Discharge/Low Battery/Reverse Battery/Inverter Current Limitation/Over Temperature/Output Overvoltage.                |
| 45   | Optional features                                 | RS 232 communication port for interfacing, Remote monitoring  |
| <b>Standards</b>                                   |   |   |
| 46   | Continuous Electromagnetic Susceptibility         | IEC 61000-4-3   |
| 47   | Electrical Fast Transient Compatibility           | IEC 61000-4-4   |
| 48   | Surge   | EN 61000-4-5: 2005  |
| 49   | CRFI  | IEC61000-4-6  |
| 50   | Magnetic Field Immunity                           | IEC 61000-4-8   |
| 51   | Transportation                                    | IEC 60068-2-32,IEC 60068-2-64,IEC 60068.2-27  |
| 52   | Protection  | IP-20   |

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021 for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-3**

**"Restrictions on Public Procurement from countries sharing a land border with India"**

**Model Clauses for Tenders**

1. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.
2. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
3. "Tender" will include other forms of procurement, except where the context requires otherwise.
4. "Bidder from a country which shares a land border with India" means: -
  - a. An entity incorporated, established or registered in such a country; or
  - b. A subsidiary of an entity incorporated, established or registered in such a country; or
  - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
  - d. An entity whose *beneficial owner* is situated in such a country; or
  - e. An Indian (or other) agent of such an entity; or
  - f. A natural person who is a citizen of such a country; or
  - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
5. The beneficial owner for the purpose of 4 above will be as under:
  - i. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation—
    - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
    - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholder agreements or voting agreements;
  - ii. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
  - iii. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
  - iv. Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
  - v. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
6. An "Agent" is a person employed to do any act for another, or to represent another in dealings with third person.
7. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. The definition of "contractor from a country which shares a land border with India" shall be as in paragraph 4 above.
8. A bidder is permitted to procure raw material, components, subassemblies etc. from the vendors from countries which share a land border with India. Such vendors will not be required to be registered with the Competent Authority as it is not regarded as "sub-contracting". However, in case a bidder has proposed to supply finished goods procured directly / indirectly from the vendors from the countries sharing land border with India, such vendor will be required to be registered with the Competent Authority.

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021 for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-3**

**Model Certificate for Tenders**

**DECLARATION REGARDING RESTRICTIONS ON PROCUREMENT FROM A BIDDER OF A COUNTRY WHICH SHARES A LAND BORDER WITH INDIA**  
**(To be submitted on the Bidder's Company's Letterhead)**

To,  
The General Manager  
BRBNMPL, Salboni

**Sub: Declaration Regarding Restrictions on Procurement from a Bidder of a Country which shares a Land Border with India**

Ref: Tender no. \_\_\_\_\_

Dear Sir,

I/We declare that

1. "I/We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I/We certify that M/s .....(Name of Bidder) is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that M/s ..... (Name of Bidder) fulfils all requirements in this regard and is eligible to be considered.

[Where applicable, evidence of valid registration by the Competent Authority shall be attached.]".

Further I/We declare that

2. "I/We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I/We certify that M/s .....(Name of Bidder) is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I/We hereby certify that M/s .....(Name of Bidder) fulfils all requirements in this regard and is eligible to be considered.

[Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

Place: \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_ Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Authorized Signatories

Seal

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021 for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-4**

**Modification in SIT Provisions under Section III: Special Instructions to Tenderers (SIT) w.r.t. "Restrictions on Public Procurement from countries sharing a land border with India"**

| <b>Sl. No.</b> | <b>GIT Clause No.</b> | <b>Topic</b>                                | <b>Modification under SIT Provision</b>  |
|----------------|-----------------------|---|--|
| 2              | 3                     | Eligible Tenderers                          | Applicable.<br>Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).   |
|                | 4                     | Eligible Goods & Services (Origin of Goods) | Applicable.<br>In addition, A bidder is permitted to procure raw material, components, subassemblies etc. from the vendors from countries which share a land border with India. Such vendors will not be required to be registered with the Competent Authority as it is not regarded as "sub-contracting". However, in case a bidder has proposed to supply finished goods procured directly / indirectly from the vendors from the countries sharing land border with India, such vendor will be required to be registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). |

**Corrigendum No. 8 to Open Tender Enquiry No. 06/SAL/MMD-MAINT/2021-22 dated 10/07/2021 for "Design, Supply, Installation & Commissioning of IP CCTV System"**

**Annexure-5**

**Modification in SCC Provisions under Section V: Special Conditions of Contract (SCC) w.r.t. "Restrictions on Public Procurement from countries sharing a land border with India"**

| <b>Sl. No.</b> | <b>GCC Clause No.</b> | <b>Topic</b>   | <b>Modification under SCC Provision</b>   |
|----------------|-----------------------|--|---|
| 1.             | 1 to 4                | Defination;<br>Interpretation and Abbreviation,<br>Application, Use of Contract documents and information, Patent Rights | No Change   |
|                | 5                     | Country of Origin  | Applicable.<br>In addition, a bidder is permitted to procure raw material, components, subassemblies etc. from the vendors from countries which share a land border with India. Such vendors will not be required to be registered with the Competent Authority as it is not regarded as "sub-contracting" However, in case a bidder has proposed to supply finished goods procured directly / indirectly from the vendors from the countries sharing land border with India, such vendor will be required to be registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). |
| New Insertion  | 18                    | Sub-Contracts  | The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).  |