

**BIDDING DOCUMENTS**

**FOR**

**DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF  
TRAIN CONTROL & SIGNALLING AND TELECOMMUNICATION SYSTEM FOR MUMBAI METRO  
LINE 2A, 2B AND 7**

**BID NO. MS01**

**ADDENDUM NO. 4**

**'MS01' Bid document: Addendum No. 4**

Part, Section, Clause, Description, Page, Location etc.	Amendments
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 2 (Overview of the Project)</li> <li>• Clause 2.2</li> </ul>	<p><b><u>REPLACE</u></b> Number of stations with points and crossings: 10 Nos</p> <p><b><u>WITH</u></b> Number of stations with points and crossings: <b>11 Nos</b></p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 3 (Scope of the works)</li> </ul>	<p><b><u>ADD</u></b> <b>3.1.3_S&amp;TC contractor shall try to procure maximum possible items from local sources. Refer APPENDIX A9 – Indigenisation<sup>3</sup> (Ref. MOUD Letter No.K-14011/9/2014-UT.II – Part (1) dated 21st April 2017) of these PS for more detail.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 3 (Scope of the works)</li> <li>• Clause 3.2 (19)</li> </ul>	<p><b><u>REPLACE</u></b> <b>There will be two Large Video Screens of identical specification which are required to be provided under MS01 contract</b></p> <p>Initially the OCC will be at Charkop depot and at the later stage all the hardware pertaining to OCC will be shifted to a centralised OCC at Aaray. The contractor shall undertake all the activities viz installation, SAT, Integrated T&amp;C, safety certification etc.</p> <p><b><u>WITH</u></b></p> <p><del>There will be two Large Video Screens of identical specification which are required to be provided under MS01 contract Deleted</del></p> <p>Initially the OCC will be at Charkop depot and subsequently in due course during contract period <b>new centralised OCC will be commissioned at Aaray and thereafter Charkop OCC will function as regular BCC.</b> The contractor shall undertake all the activities viz installation, SAT, Integrated T&amp;C, safety certification etc. <b>for centralised OCC and BCC also. There will be no Large video screens at Charkop OCC but two monitors of minimum 40” size each will to be provided for the view of section at Charkop OCC. After commissioning of centralised OCC at Aaray, except minimum required workstations and equipments for Charkop to work as regular BCC operation, all other workstations and equipments will be shifted to Aaray OCC during commissioning of the same.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 3 (Scope of the works)</li> <li>• Clause 3.4</li> </ul>	<p><b><u>ADD</u></b> <b>3.4.2.11 – The Emergency Load of Electrical dept is not in the scope of MS01</b></p>

<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 5 (Functional Requirement)</li> <li>• Clause 5.3.12.1</li> </ul>	<p><b><u>ADD</u></b></p> <p><b>The contractor shall provide 120 KVA UPS system to cater the requirement of Charkop Depot and BCC at Charkop. No separate UPS of 60 KVA is required for Charkop Depot.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 5 (Functional Requirement)</li> <li>• Clause 5.11.6.1</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Route indicator shall be matrix type <b>and of the same design as in use in DMRC.</b></p> <p><b><u>WITH</u></b></p> <p>Route indicator shall be matrix type.</p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 5 (Functional Requirement)</li> <li>• Clause 5.11.7.1</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Green: Proceed: Route set, locked and the track circuits/axle counters to the next signal are clear and the overlap locked.</p> <p><b><u>WITH</u></b></p> <p>Green: Proceed: Route set, locked and the track circuits/axle counters to the next signal are clear and the overlap locked (<b>wherever provided</b>).</p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 5 (Functional Requirement)</li> <li>• Clause 5.15.1 (1)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Central control from the OCC and</p> <p><b><u>WITH</u></b></p> <p>Central Control from the OCC/<b>BCC</b> and</p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Chapter: 5 (Functional Requirement)</li> <li>• Clause 5.25.5</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>The height of the display portion of the panels shall be of approximately 2.5m and width approximately 25m for entire line 2A,2B and 7 so as to accommodate two 3x10 modules.</p> <p><b><u>WITH</u></b></p> <p>The height of the display portion of the panels shall be of approximately 2.5m and width approximately 25m for entire line 2A,2B and 7 so as to accommodate <b>one 3x15 modules.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• AppendixA9- Indigenisation.</li> </ul>	<p><b><u>ADD</u></b></p> <p><b>APPENDIX A9 – Indigenisation<sup>3</sup> (Ref. MOUD Letter No.K-14011/9/2014-UT.II – Part (1) dated 21st April 2017)</b></p> <p><b>1. S&amp;TC contractor shall try to procure maximum possible items from local sources. Items which are indigenized and sourced from India shall meet the performance requirements and quality standards as per technical requirement. In this direction, following equipment shall be procured indigenously and accordingly the price in BOQ shall be quoted. The contractor shall inform separately in bid submission, how these objective is proposed to be achieved for MS01 project.</b></p>

	<p>a) Point machine for depot b) UPS ,Power Distribution Cubicle and associated system c) Cables d) LED based signals e) Large Video Screen (LVS) Laser type f)Site accessories viz. computers and workstations and servers (recommended)<sup>1</sup> g) Point machine for mainline (recommended)<sup>1</sup> h) Axle counter (recommended)<sup>1</sup> i) Electronic interlocking (recommended)<sup>1</sup></p> <p>2. S&amp;TC contractor shall try to develop maximum possible local competence so that knowhow and technical support is available locally within India as far as possible. The Signalling and Train Control project implementation shall have Indian partner(s), who would take up following works:</p> <p>a) ATS non-core functions<sup>2</sup> comprising of the following:</p> <ul style="list-style-type: none"><li>• Interface for public announcements and passenger information system</li><li>• Provide interface with passenger surveillance systems</li><li>• Provide interface with the communication system for passengers and staff</li><li>• Besides, S&amp;TC contractor may decide indigenization of following additional functions:<ul style="list-style-type: none"><li>• Time table generation</li><li>• Time distance graph</li><li>• Fault reporting</li><li>• Control traction power</li><li>• Manage operational disturbances</li><li>• Manage rolling stock and staff resources (crew management)</li><li>• Support maintenance by interfacing with external maintenance management system of MMRDA</li><li>• Supervise infrastructure external to CBTC system</li></ul></li></ul> <p>b) Preparation of Signalling plan, control table, application drawings c) Site installation, testing and commissioning d) Safety assurance e) Integration for the sub-system/ modules sourced from India f) Life-time spares management g) Data preparation of ATP, Interlocking and ATS (recommended)<sup>1</sup> h) Extension, modification and re-Signalling works in future as lead partner (recommended)<sup>1</sup></p> <p>Notes:</p> <p>1. The intention of writing "Recommended" is to specify that contractor is encouraged to take up this item under the head where it appears while recognizing at the same time the challenges involved in taking this step at this stage.</p> <p>2. ATS non-core functions are those not directly interfacing with interlocking and ATP safety functions.</p> <p>3. From the point of view of indigenization, Indian Railways have adopted "Policy for cross acceptance/ approval of Software Embedded Electronics Railway Signalling Systems and New/Imported Technology Products for Railway Signalling issued vide Railway Board letter no. 2012/Sig/SGF/7 dt 6.3.2014. This policy may be suitably made use of.</p>
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<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Appendix D(Design criteria)</li> <li>• Clause5.1</li> </ul>	<p><b><u>REPLACE</u></b>  For any stabling track that can hold more than one <b>6-car</b> rake, the track circuits/axle counter shall be provided in such a way so as detect the presence of rakes individually. Axle counter shall be provided for lines/ sections of depot where provision of AFTC is not feasible due to improper track bed resistivity</p> <p><b><u>WITH</u></b>  For any stabling track that can hold more than one <b>6/8-car</b> rake, the track circuits/axle counter shall be provided in such a way so as detect the presence of rakes individually. Axle counter shall be provided for lines/ sections of depot where provision of AFTC is not feasible due to improper track bed resistivity</p>
<ul style="list-style-type: none"> <li>• Part-IIA:(PS)- Signalling</li> <li>• Appendix R (Sections)</li> <li>• Clause 3.1 &amp; 3.2</li> </ul>	<p><b><u>REPLACE</u></b></p> <p><b>3.1 Stations with point and crossing</b></p> <ol style="list-style-type: none"> <li>1) Andheri Metro East</li> <li>2) Aaray</li> </ol> <p><b>3.2 Stations without points and crossing</b></p> <ol style="list-style-type: none"> <li>1) Shankar Wadi</li> <li>2) JVLR Junction</li> <li>3) Mahanand</li> <li>4) PathanWadi</li> <li>5) Pushpa Park</li> <li>6) Banadogri</li> <li>7) Mahindra &amp; Mahindra</li> <li>8) Maga Thane</li> <li>9) Devi Pada</li> <li>10) National Park</li> <li>11) <b>Overi Pada station</b></li> </ol> <p><b><u>WITH</u></b></p> <p><b>3.1 Stations with point and crossing</b></p> <ol style="list-style-type: none"> <li>1) Andheri Metro East</li> <li>2) Aaray</li> <li>3) <b>Overi Pada station</b></li> </ol> <p><b>3.2 Stations without points and crossing</b></p> <ol style="list-style-type: none"> <li>1) Shankar Wadi</li> <li>2) JVLR Junction</li> <li>3) Mahanand</li> <li>4) PathanWadi</li> <li>5) Pushpa Park</li> <li>6) Banadogri</li> <li>7) Mahindra &amp; Mahindra</li> <li>8) Maga Thane</li> <li>9) Devi Pada</li> <li>10) National Park</li> <li>11) <del>Overi Pada station</del> <b>Deleted</b></li> </ol>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)- Telecommunication</li> <li>• Chapter: 2 (PAS)</li> </ul>	<p><b><u>REPLACE</u></b>  The contractor shall provide all the required audio recording services at a professional recording studio for production and recording of messages for the PAS.</p> <p><b><u>WITH</u></b>  The contractor shall provide all the required audio recording services at a</p>

<ul style="list-style-type: none"> <li>• Clause No 3.3.4</li> </ul>	<p>professional recording studio for production and recording of messages for the PAS. <b>The voice mail/female for different language shall be decided at later stage for which approval to be taken from Employer.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 2 (PAS)</li> <li>• Clause No 4.5.1 &amp; 5.6.6</li> </ul>	<p><b><u>REPLACE</u></b> The output of the PAS Amplifier should be tapped and recorded automatically either locally or remotely at OCC/BCC, so that record of actual announcement made can be analysed at a later date. The record to be kept for 7 days.</p> <p><b><u>WITH</u></b> The output of the PAS Amplifier should be tapped and recorded automatically <b>at local and remote level</b> at OCC/BCC, so that record of actual announcement made can be analysed later. The record to be kept for <b>15</b> days.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 2 (PAS)</li> <li>• Clause No 5.6.5</li> </ul>	<p><b><u>REPLACE</u></b> Live audio broadcast relating to emergency, fire and evacuation messages from OCC/BCC shall be recorded in the Centralized digital recording system at OCC/BCC. Similar broadcast s made from SCR/PSB shall be recorded at the SCR/TER in the PAS station server or the MMI itself. It shall however be possible to retrieve any message so recorded and save same on an external storage device like a memory stick for future reference.</p> <p><b><u>WITH</u></b> Live audio broadcast relating to emergency, fire and evacuation messages from OCC/BCC shall be recorded in the Centralized digital recording system at OCC/BCC. Similar broadcasts made from SCR/PSB shall be recorded at the SCR/TER in the PAS station server or the MMI itself. <b>The recording at SER/TER shall be transferred to CDRS every 24 hours. So that it is available for future retrieval.</b> It shall however be possible to retrieve any message so recorded and save same on an external storage device like a memory stick for future reference <b>for minimum 15 days.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 2 (PAS)</li> <li>• Clause No 5.10.1.1.11</li> </ul>	<p><b><u>REPLACE</u></b> Hence PAS Control panel shall work as a manual backup to MMI (including the DVA) at all locations i.e. stations and OCC/BCCs</p> <p><b><u>WITH</u></b> Hence PAS Control panel shall work as a manual backup to MMI (including the DVA) at <b>respective</b> locations i.e. stations and OCC/BCCs</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 2 (PAS)</li> <li>• Clause No 6.3.13.1</li> </ul>	<p><b><u>REPLACE</u></b> All equipment of the PAS shall work from 240 Volts 20% AC Single phase power supply and connected to a dedicated UPS to be supplied as part of MS01 contract. Refer to clause 3.4.2 of this chapter.</p> <p><b><u>WITH</u></b> All equipment of the PAS shall work from <b>240V ±20%</b> AC Single phase power supply and connected to a dedicated UPS to be supplied as part of MS01 contract. Refer to clause 3.4.2 of this chapter.</p>

<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 3 (PIDS)</li> <li>• Clause No 1.1.5</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>The PIDS Subsystem will adopt decentralized architecture with redundancy built <b>at both at station and</b> at OCC/BCC TER level.</p> <p><b><u>WITH</u></b></p> <p>The PIDS Subsystem will adopt decentralized architecture with redundancy built <b>at OCC/BCC TER</b> level.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 3 (PIDS)</li> <li>• Clause No 3.1.2.8 a) (IV) &amp; (V)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>(iv) Facility for display of advertisements on the LED based Display Boards at stations from the PAS/PIDS HMI at OCC/BCC.  (v) The Contractor shall propose Size of the display Boards for Employer’s approval.</p> <p><b><u>WITH</u></b></p> <p>(iv) Facility for display of advertisements on the LED based Display <b>Screen</b> at stations from the PAS/PIDS HMI at OCC/BCC.  (v) The Contractor shall propose Size of the display <b>Screens</b> for Employer’s approval.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 3 (PIDS)</li> <li>• Clause No 3.1.2.7 (g)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>g) The PIDS display housing shall provide cable access from the top <b>and</b> bottom of the unit and shall be equipped with internal cable termination facilities together with an earth terminal for termination of external cables.</p> <p><b><u>WITH</u></b></p> <p>g) The PIDS display housing shall provide cable access from the top <b>or</b> bottom of the unit and shall be equipped with internal cable termination facilities together with an earth terminal for termination of external cables.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 3 (PIDS)</li> <li>• Clause No 6.1.2.2</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Each management Workstation shall be equipped with a 20/21” inches color TFT display with at least “1280 x 1024” pixels resolution or latest specifications to provide graphical presentation and display of the PIDS.</p> <p><b><u>WITH</u></b></p> <p>Each management Workstation shall be equipped with a 20/21” inches color <b>LED</b> display with at least “1280 x 1024” pixels resolution or latest specifications to provide graphical presentation and display of the PIDS.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 3 (PIDS)</li> <li>• Clause No 7.1.1.4</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>The information on display boards shall be displayed in turn in English and then in Hindi language.</p> <p><b><u>WITH</u></b></p> <p>The information on display boards shall be displayed in turn in</p>

	English/Hindi/Marathi language.
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 4 (MCS)</li> <li>• Clause No 1.2.3</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>The MSC shall be designed to provide no more than one-millisecond time difference between any HMI of Mumbai Metro Rail Project equipment.</p> <p><b><u>WITH</u></b></p> <p>The <b>MCS</b> shall be designed to provide no more than one-millisecond time difference between any HMI of Mumbai Metro Rail Project equipment.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 4 (MCS)</li> <li>• Clause No 2.3</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Digital Display Clocks– OCC/BCC, SCO, DCC</p> <p><b><u>WITH</u></b></p> <p>Digital Display Clocks– OCC/BCC, SCO/<b>SCR</b>, DCC</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 4 (MCS)</li> <li>• Clause No 6.3.1.3</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>In the event of failure of the slave clock <b>control system</b>, on reconnection the sub-master clocks shall automatically re-adjust the slave clocks on re-connection.</p> <p><b><u>WITH</u></b></p> <p>In the event of failure of the slave clock, on reconnection the sub-master clocks shall automatically re-adjust the slave clocks on re-connection.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 5 (CDRS)</li> <li>• Clause No 5.1 (5) &amp; 5.17 (e)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Recording of free space voice conversations of all Controllers in SCO Room, DCC Room, and OCC/BCC Theatre. The micro phones shall be so placed in SCO, DCC, OCC/BCC to enable clear recording of all controller positions without any mixing / disturbance.</p> <p><b><u>WITH</u></b></p> <p>Recording of free space voice conversations of all Controllers in SCO Room, DCC Room, and OCC/BCC Theatre. The micro phones shall be so placed in SCO, DCC, OCC/BCC to enable clear recording of all controller positions without any mixing / disturbance <b>and suits the theatre/room aesthetically and should be approved by Employer.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 6 (Radio System)</li> <li>• Clause No 5.7.2.2</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>The received text message must be displayed on the Train Radio Control Panel regardless of whether the target radio user is involved in a voice call.</p> <p><b><u>WITH</u></b></p> <p>The received text message must be displayed on the <b>RCH</b> regardless of whether the</p>



	target radio user is involved in a voice call.
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 6 (Radio System)</li> <li>• Clause No 6.11.2.8</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>7) Call Waiting</p> <p><b><u>WITH</u></b></p> <p><b>Deleted</b></p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 7 (Telephone System &amp; 48V DC Power System)</li> <li>• Clause No 3.2.1</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>(4) Digital telephone <b>and Satellite TEL subsystem</b></p> <p><b><u>WITH</u></b></p> <p>(4) Digital telephone</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 7 (Telephone System &amp; 48V DC Power System)</li> <li>• Clause No 5.2.4</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Help Points Analogue Phone (One at each PSB)</p> <p style="padding-left: 40px;">(i) Analogue phone connected to SCR and SC</p> <p><b><u>WITH</u></b></p> <p>Help Points <b>IP</b> Phone (One at each PSB)</p> <p style="padding-left: 40px;">(i) <b>Another type of DLT</b> connected to SCR and SC</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV System)</li> <li>• Clause No 1.2.6</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>LED Video wall of size 5x2x70” shall be provided in Security Control Room at OCC/BCC to view all cameras Line 2A, 2B and Line 7 corridor of Mumbai Metro. Detailed specifications of Video Wall are given in Annexure-A to this Chapter of PS</p> <p><b><u>WITH</u></b></p> <p><b>LASER</b> Video wall of size <b>5x3x70”</b> shall be provided in Security Control Room at OCC/BCC to view all cameras Line 2A, 2B and Line 7 corridor of Mumbai Metro. Detailed specifications of Video Wall are given in Annexure-A to this Chapter of PS</p>

<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV System)</li> <li>• Clause No 4.4.1</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Network Video recording system shall provide local recording at the station itself and mirrored recording at adjacent station for all <b>Phase-III</b> stations. The Network Video Recording system shall provide Failover and Redundancy.</p> <p><b><u>WITH</u></b></p> <p>Network Video recording system shall provide local recording at the station itself and mirrored recording at adjacent station for all stations. The Network Video Recording system shall provide Failover and Redundancy.</p>												
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV)</li> <li>• Clause No 5.2.6 (8) &amp; 5.2.7 (Q)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>5.2.6 High Definition IP Fixed Dome Camera (Day/Night)</p> <table border="1" data-bbox="456 814 1425 877"> <tr> <td>8.</td> <td>Enclosure</td> <td>IP66, NEMA-4 or better</td> </tr> </table> <p>5.2.7 High Speed, High Definition IP PTZ Dome Camera (Day/Night)</p> <table border="1" data-bbox="456 940 1425 1003"> <tr> <td>Q.</td> <td>Housing Arrangement</td> <td>IP66, NEMA 4 or better.</td> </tr> </table> <p><b><u>WITH</u></b></p> <p>5.2.6 High Definition IP Fixed Dome Camera (Day/Night)</p> <table border="1" data-bbox="456 1182 1425 1245"> <tr> <td>8.</td> <td>Enclosure</td> <td><b>IP66/NEMA-4 or better</b></td> </tr> </table> <p>5.2.7 High Speed, High Definition IP PTZ Dome Camera (Day/Night)</p> <table border="1" data-bbox="456 1308 1425 1371"> <tr> <td>Q.</td> <td>Housing Arrangement</td> <td><b>IP66/NEMA-4 or better.</b></td> </tr> </table>	8.	Enclosure	IP66, NEMA-4 or better	Q.	Housing Arrangement	IP66, NEMA 4 or better.	8.	Enclosure	<b>IP66/NEMA-4 or better</b>	Q.	Housing Arrangement	<b>IP66/NEMA-4 or better.</b>
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Q.	Housing Arrangement	<b>IP66/NEMA-4 or better.</b>											
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV)</li> <li>• Clause No 5.2.18.3 (C) &amp; (P)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>In case data older than 7 days is available, the retrieval should be possible.</p> <p><b><u>WITH</u></b></p> <p>In case data older than <b>15</b> days is available, the retrieval should be possible.</p> <p>And</p> <p><b><u>REPLACE</u></b></p> <p>Minimum recording shall be for 7 days.</p> <p><b><u>WITH</u></b></p> <p>Minimum recording shall be for <b>15</b> days.</p>												

<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV System)</li> <li>• Annexure A</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Requirements of 5x2 x 70" Large Video Screen</p> <p><b><u>WITH</u></b></p> <p>Requirements of Large Video Screen</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV System)</li> <li>• Annexure A Clause A (5)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Normally all the stations of the OCC/BCC's jurisdiction shall be viewed simultaneously on the full 5x2 Video Wall at OCC/BCC windows of equal sizes.</p> <p><b><u>WITH</u></b></p> <p>Normally all the stations of the OCC/BCC's jurisdiction shall be viewed simultaneously on the full <b>3x5</b> Video Wall at OCC/BCC windows of equal sizes</p> <p>And</p> <p><b><u>REPLACE</u></b></p> <p>5) The Large Screen Graphics Wall shall be installed in the Control Room at OCC/BCC. The Large Screen Graphics Wall shall be made up of 10 Rear Projection Modules fitted in 5 columns wide and 2 rows high and the overall screen size shall be approximately 7,750 (w) mm x 1,744 (h) mm.</p> <p><b><u>WITH</u></b></p> <p>5) The Large video Screen for Train control &amp; Signalling system shall be installed OCC theatre of 3x15 matrix of 70" screen each and the large video screen for CCTV surveillance shall be installed in the Security Control Room at OCC with 3x5 matrix of 70" screen each.</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 8 (CCTV)</li> <li>• Annexure C (List of RSS)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Please refer PS Part-1.</p> <p><b><u>WITH</u></b></p> <ol style="list-style-type: none"> <li>1. DN Nagar</li> <li>2. Charkop Depot</li> <li>3. Magathane</li> <li>4. BKC</li> <li>5. Mandale</li> </ol>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 9 (FOTS)</li> <li>• Clause No 2.1.1 (V)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>(V) The Core Data Switch shall have</p> <ul style="list-style-type: none"> <li>• Modular and Scalable with full expansion capability</li> <li>• Number of Slots - Minimum of 6 slots.</li> </ul> <p><b><u>WITH</u></b></p> <p>(V) The Core Data Switch shall have</p> <ul style="list-style-type: none"> <li>• Modular and Scalable with full expansion capability</li> <li>• Number of Slots - Minimum of <b>12</b> slots.</li> </ul>

<ul style="list-style-type: none"> <li>Part-IIB:(PS)-Telecommunication</li> <li>Chapter: 9 (FOTS)</li> <li>Table 5.1 (Page 7 of 31)</li> </ul>	<p><b>Item 11. Deleted</b></p>																										
<ul style="list-style-type: none"> <li>Part-IIB:(PS)-Telecommunication</li> <li>Chapter: 10 (Appendices)</li> <li>Appendix E – Contract Spares</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>1. FOTS</p> <table border="1" data-bbox="456 632 1425 695"> <tr> <td>1.</td> <td>All replaceable parts (Cards/Modules) of Core switch at OCC/BCC</td> <td>5 each</td> </tr> </table> <p>2. Telephone System</p> <table border="1" data-bbox="456 772 1425 894"> <tr> <td>2.</td> <td>IP PBX Server including Gateway (fully equipped)</td> <td>3 No.</td> </tr> <tr> <td>8.</td> <td>Analogue Telephones</td> <td>117No.</td> </tr> </table> <p><b><u>WITH</u></b></p> <p>1. FOTS</p> <table border="1" data-bbox="456 1031 1425 1094"> <tr> <td>1.</td> <td>All replaceable parts (Cards/Modules) of Core switch at OCC/BCC</td> <td><b>2 each</b></td> </tr> </table> <p>2. Telephone System</p> <table border="1" data-bbox="456 1171 1425 1507"> <tr> <td>2.</td> <td>IP PBX Server including Gateway (fully equipped)</td> <td><b>1 No.</b></td> </tr> <tr> <td>8.</td> <td><b>Basic IP Phone</b></td> <td>117 No.</td> </tr> <tr> <td><b>18.</b></td> <td><b>Direct Line Telephone Console (90 Lines capacity) with Direct Line Master Conference Set</b></td> <td><b>10% of Supplied population for each type</b></td> </tr> </table>						1.	All replaceable parts (Cards/Modules) of Core switch at OCC/BCC	5 each	2.	IP PBX Server including Gateway (fully equipped)	3 No.	8.	Analogue Telephones	117No.	1.	All replaceable parts (Cards/Modules) of Core switch at OCC/BCC	<b>2 each</b>	2.	IP PBX Server including Gateway (fully equipped)	<b>1 No.</b>	8.	<b>Basic IP Phone</b>	117 No.	<b>18.</b>	<b>Direct Line Telephone Console (90 Lines capacity) with Direct Line Master Conference Set</b>	<b>10% of Supplied population for each type</b>
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<ul style="list-style-type: none"> <li>Part-IIB:(PS)-Telecommunication</li> <li>Chapter: 10 (Appendices)</li> <li>Appendix M</li> <li>Clause No 4.2.1</li> </ul>	<p><b><u>REPLACE</u></b></p> <ul style="list-style-type: none"> <li>Monitors- On Platform Monitors side and also inside the Telecom Room on the equipment side for Power and Data both.</li> </ul> <p><b><u>WITH</u></b></p> <p><b>Deleted.</b></p>															
<ul style="list-style-type: none"> <li>Part-IIB:(PS)-Telecommunication</li> <li>Chapter: 11 (IT System)</li> <li>Annexure 1(a)</li> </ul>	<p><b>Sr No. 4. Deleted</b></p>															
<ul style="list-style-type: none"> <li>Part-IIB:(PS)-Telecommunication</li> <li>Chapter: 11 (IT System)</li> <li>Annexure 2(b), 2(c), 2(d), 2(e) &amp; 2(f)</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>Annexure 2(b)</p> <table border="1" data-bbox="456 1444 1442 1488"> <tr> <td>1.1</td> <td>Shall be 15" Rack Mountable</td> </tr> </table> <p>Annexure 2(c), 2(d), 2(e) &amp; 2(f)</p> <table border="1" data-bbox="456 1551 1442 1596"> <tr> <td>1.1</td> <td>Shall be 1RU, 15" Rack Mountable</td> </tr> </table> <p><b><u>WITH</u></b></p> <p>Annexure 2(b)</p> <table border="1" data-bbox="456 1722 1442 1766"> <tr> <td>1.1</td> <td>Shall be <b>15"/19"</b> Rack Mountable</td> </tr> </table> <p>Annexure 2(c), 2(d), 2(e) &amp; 2(f)</p> <table border="1" data-bbox="456 1829 1442 1873"> <tr> <td>1.1</td> <td>Shall be 1RU, <b>15"/19"</b> Rack Mountable</td> </tr> </table>	1.1	Shall be 15" Rack Mountable	1.1	Shall be 1RU, 15" Rack Mountable	1.1	Shall be <b>15"/19"</b> Rack Mountable	1.1	Shall be 1RU, <b>15"/19"</b> Rack Mountable							
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<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 12 (Access Control System)</li> <li>• 1.Scope of work</li> </ul>	<p><b><u>ADD</u></b></p> <p><b><u>III. The Scope of works include supply of 10%of supplied population for each type under contract spare except Server and Printer.</u></b></p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 12 (Access Control System)</li> <li>• 2. Salient Features</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>IV. Provision for data retrieval from readers of standalone gates or other readers (in case of network failure) through laptop shall be made available</p> <p><b><u>WITH</u></b></p> <p>IV. Provision for data retrieval from readers/<b>controller</b> of standalone gates or other readers (in case of network failure) through laptop shall be made available</p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 12 (Access Control System)</li> <li>• 3. Access Control System Equipments</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>I. Recessed/Surface mounted Networkable multiprocessor controlled 4 reader controller capable of controlling multiple readers (IN/OUT) with inbuilt troubleshooting indications on front panel, <b>2 GB</b> memory buffer, power supply and 6 hours battery back-up along with TCP/IP connectivity, <b>Onboard LCD display</b>; 8 inputs and 8 outputs; readers expandable up to 8 per controller complete as required.</p> <p><b><u>WITH</u></b></p> <p>I. Recessed/Surface mounted Networkable multiprocessor controlled 4 reader controller capable of controlling multiple readers (IN/OUT) with inbuilt troubleshooting indications on front panel, memory buffer, power supply and 6 hours battery back-up along with TCP/IP connectivity 8 inputs and 8 outputs; readers expandable up to 8 per controller complete as required complete as required. <b>The hardware and software should be the same OEM.</b></p>
<ul style="list-style-type: none"> <li>• Part-IIB:(PS)-Telecommunication</li> <li>• Chapter: 12 (Access Control System)</li> <li>• 4.Specifications of Smart</li> </ul>	<p><b><u>REPLACE</u></b></p> <p>IV. Shall store at least <b>200000</b> card IDs and at least <b>500000</b> history transactions with date/time stamp at the central controller.</p> <p>VII. <b>Display : LCD screen (16 characters x 2 rows alpha numeric)</b></p> <p><b><u>WITH</u></b></p> <p>IV. Shall store at least <b>20000</b> card IDs and at least <b>50000</b> history transactions with date/time stamp at the central controller.</p> <p>VII. <b>Deleted</b></p>

Card Reader	<p><b><u>REPLACE</u></b> XVII. Reader application should be modifiable according to future user-requirement. <b>All circuit diagrams and source code</b>, firmware etc. shall be provided to DMRC/MMRDA.</p> <p><b><u>WITH</u></b> XVII. Reader application should be modifiable according to future user-requirement. <b>All circuit diagrams</b> and firmware etc. shall be provided to DMRC/MMRDA.</p>
<ul style="list-style-type: none"><li>• Part-IIB:(PS)-Telecommunication</li><li>• Chapter: 12 (Access Control System)</li><li>• Clause No 4 Specifications of Smart Card Reader</li></ul> <ul style="list-style-type: none"><li>• Part-IIB:(PS)-Telecommunication</li><li>• Chapter: 12 (Access Control System)</li><li>• Clause No 6. Access Control Computer Server (ACC)</li></ul>	<p><b><u>REPLACE</u></b> 6) Original license with CD shall be provided for COTS (commercial off the shelf software) <b>and source code for application software</b>, with complete documentation and application shall be provided</p> <p><b><u>WITH</u></b> 6) Original license with CD shall be provided for COTS (commercial off the shelf software), with complete documentation and application shall be provided.</p>