

Corrigendum No. 2 (Dated 17.04.2024)

Request for Proposal (RFP)

for

Selection of Entity for Design, Manufacturing, Supply, Commissioning, Operation and Maintenance of Rolling Stock on PPP Model for BSRP

RFP No.: KRIDE/2023-24/SE0002

The following are the modifications and amendments to the Request for Proposal (RFP) for Selection of Entity for Design, Manufacturing, Supply, Commissioning, Operation and Maintenance of Rolling Stock on PPP Model for BSRP.

SN	Clause/Item	Amendment
1.	Conditions of Contract Article 24.4.2	<p><u>Replace:</u> Upon completion of each Year, if the Actual Annual Availability for that Year is greater than the Minimum Guaranteed Annual Availability less Annual Non-Availability, then the additional Maintenance Charges (“Additional Maintenance Charges payable shall be the product of: (i) Actual Annual Availability less the (Minimum Guaranteed Annual Availability less Annual Non-Availability, and (ii) the Indexed Maintenance Charges. <u>With:</u> Upon completion of each Year, if the Actual Annual Availability for that Year is greater than the Minimum Guaranteed Annual Availability less Annual Non-Availability, then the additional Maintenance Charges “Additional Maintenance Charges payable shall be the product of: (i) Actual Annual Availability less the Minimum Guaranteed Annual Availability less Annual Non-Availability, and (ii) the Indexed Maintenance Charges.</p>
2.	Conditions of Contract Article 30.2 (b)	<p><u>Replace:</u> comprehensive third-party liability insurance for life, goods or property, including injury to or death of personnel of K-RIDE or others, arising from any Accident at the Maintenance Depots and/or the Corridor on account of any negligence of the Lessor or a defect or deficiency in a Train for a minimum sum assured of Rs. 5 lakhs per incident and no limit on number of such accidents; <u>With:</u> comprehensive third-party liability insurance for life, goods or property, including injury to or death of personnel of K-RIDE or others, arising from any Accident at the Maintenance Depots and/or the Corridor on account of any negligence of the Lessor or a defect or deficiency in a Train for a</p>

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		minimum sum assured of Rs. 5 lakhs per person and no limit on number of such accidents. <u>For the avoidance of the doubt, it is clarified that responsibility of the Liability insurance for the users/passengers including employees of K-RIDE rests with the K-RIDE;</u>								
3.	Conditions of Contract Schedule – C Clause 3.3.2	<p><u>Replace:</u> K-RIDE shall install suitable energy meter(s) to measure the electrical energy consumption by Lessor at the Depot Site(s) for both traction and non-traction usage of electrical energy. The energy meter reading shall be jointly recorded as per the billing cycle and K-RIDE shall advise the Lessor on the energy bills to be paid by the Lessor, the payment of which shall be made by Lessor to K-RIDE within the stipulated time.</p> <p><u>With:</u> K-RIDE shall install suitable energy meter(s) to measure the electrical energy consumption by Lessor at the Depot Site(s) for both traction and non-traction usage of electrical energy. The energy meter reading shall be jointly recorded as per the billing cycle and K-RIDE shall advise the Lessor on the energy bills to be paid by the Lessor, the payment of which shall be made by Lessor to K-RIDE within the stipulated time. <u>For the avoidance of the doubt, it is clarified that charges/bills for the traction usage shall be paid by the K-RIDE.</u></p>								
4.	Schedule-A Clause 3.17 table 3.5	<p><u>Replace:</u></p> <table border="1" data-bbox="414 817 1529 999"> <tr> <td data-bbox="414 817 965 906">System Particulars</td> <td data-bbox="965 817 1529 906">For all sections and depots</td> </tr> <tr> <td data-bbox="414 906 965 999">Voltage for guaranteed performance</td> <td data-bbox="965 906 1529 999">22.5 kV a.c.</td> </tr> </table> <p><u>With:</u></p> <table border="1" data-bbox="414 1110 1529 1289"> <tr> <td data-bbox="414 1110 965 1200">System Particulars</td> <td data-bbox="965 1110 1529 1200">For all sections and depots</td> </tr> <tr> <td data-bbox="414 1200 965 1289">Voltage for guaranteed performance</td> <td data-bbox="965 1200 1529 1289">22.5 kV a.c.to 27.5kV a.c</td> </tr> </table>	System Particulars	For all sections and depots	Voltage for guaranteed performance	22.5 kV a.c.	System Particulars	For all sections and depots	Voltage for guaranteed performance	22.5 kV a.c.to 27.5kV a.c
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5.	Schedule-A Clause 3.22 Table 3.7	<p><u>Replace:</u> Minimum Design Average Acceleration rate for fully loaded (AW4) for 6/3 Car train on level tangent track shall be as under:</p>								

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SN	Clause/Item	Amendment	
		from 0 to 40 km/h	1.0 m/s ²
		from 0 to 60 km/h	> 0.85 m/s²
		from 0 to 80 km/h	> 0.65 m/s²
		Minimum Design Average Acceleration rate for crush loaded (AW3) for 6/3 Car train on level tangent track shall be as under:	
		from 0 to 40 km/h	1.2 m/s ²
		from 0 to 60 km/h	> 0.85 m/s²
		from 0 to 80 km/h	> 0.65 m/s²
		<u>Note</u>	
		Maximum service braking effort from 90km/h to 5 km/h shall be shared only by regeneration in motor Cars with adhesion coefficient up to 16% for fully loaded (AW4) train	
		<u>With:</u>	
		Minimum Design Average Acceleration rate for fully loaded (AW4) for 6/3 Car train on level tangent track shall be as under:	
		from 0 to 40 km/h	1.0 m/s ²
		from 0 to 60 km/h	> 0.7 m/s²
		from 0 to 80 km/h	> 0.35 m/s²
		Minimum Design Average Acceleration rate for crush loaded (AW3) for 6/3 Car train on level tangent track shall be as under:	
		from 0 to 40 km/h	1.2 m/s ²
		from 0 to 60 km/h	> 0.75 m/s²
		from 0 to 80 km/h	> 0.40 m/s²

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SN	Clause/Item	Amendment
		<p><u>Note</u> Maximum service braking effort from 90km/h to 5 km/h shall be shared only by regeneration in motor Cars with adhesion coefficient up to 20% for fully loaded (AW4) train</p>
6.	Schedule-A Clause 3.23.1(ii)	<p><u>Replace:</u> A 6/3-Car fully loaded train AW4 shall be capable of clearing the section, with the traction motors of 2/1 motor Cars are cut out (50% motoring at train level). The temperature rise of the traction motor and equipment shall be within rating of traction motor and other equipments in the above condition.</p> <p><u>With:</u> A 6/3-Car fully loaded train AW4 shall be capable of operating train for a further period of 2 hours or a round trip whichever is more, with the traction motors of 2/1 motor Cars are cut out (50% motoring at train level). The temperature rise of the traction motor and equipment shall be within rating of traction motor and other equipments in the above condition.</p>
7.	Schedule-A Clause 5.16	<p><u>Deleted</u></p>
8.	Schedule-A Clause 6.17.2	<p><u>Replace:</u> The Lessor shall submit the details of the brake control system interfaces with the vehicle control circuits, The Propulsion system, the Master Controller, PWM generator and ATP/ATO etc. The brake control system logic shall have adequate redundancy and back-up. PWM data from PWM generator or digital data and ATO shall be hard wired but shall also be received through TCMS as back- up. The system design shall also define the fallback mode operation when PWM data is not available from both the PWM generator and TCMS back-up, because of any reason.</p> <p><u>With:</u> The Lessor shall submit the details of the brake control system interfaces with the vehicle control circuits, The Propulsion system, the Master Controller, PWM generator and ATP/ATO etc. The brake control system logic shall have adequate redundancy and back-up. PWM data from PWM generator or digital data and ATO shall be hard wired but shall also be received through TCMS as back- up. The system design shall also define the fall-back mode operation when PWM data is not available from both the PWM generator and TCMS back-up, because of any reason. Further if lessor proposes Ethernet based effort demand instead of PWM generator the proposal may be considered upon submission of proven records of existing projects and review by independent engineer.</p>
9.	Schedule-A	<p><u>Replace:</u></p>

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SN	Clause/Item	Amendment
	Clause 8.3.1	<p>A roof-mounted Vacuum circuit breaker (VCB) of proven design shall be provided for the 25kV AC system vehicles, located close to the pantograph. The VCB shall be of the single bottle type having a short circuit rating of 400MVA, and conforming to IEC 60056, in conjunction with C3 category, type tested with 300,000 operations & IEC 60077-4. Protection class for the external portion and internal portion shall be IP 67 and IP 20 respectively. The creepage distance of the insulator shall not be less than 900mm for the highly polluted environment in accordance with IEC 815. The auxiliary contacts and control equipment shall be located beneath the base plate so as to be accessible from within the vehicle. The control cable shall be compliant to the requirements of EN45545 or equivalent in respect of fire, smoke, & toxicity characteristics. A 110 V D.C connector of proven design shall be provided. The VCB base plate along with bottom cover shall be suitably protected to prevent corrosion in adverse environment of Bengaluru. The mounting plate of VCB shall be provided with a proper sealing to avoid ingress of water from roof. The past three year's record of proposed VCB shall establish NIL failure of vacuum tube and not more than two component failures in last three years. The VCB shall be suitable for repeated switching within short time comparable with the short (6m) neutral sections. Type test reports shall be submitted. Spare auxiliary interlocks, at least 20% duly cabled upto terminal block in the electrical cubicle shall be provided.</p> <p><u>With:</u></p> <p>A roof-mounted Vacuum circuit breaker (VCB) of proven design shall be provided for the 25kV AC system vehicles, located close to the pantograph. The VCB shall be of the single bottle type having a short circuit rating of 400MVA, and conforming to IEC 60056, in conjunction with C3 category, type tested with 300,000 operations & IEC 60077-4. Protection class for the external portion and internal portion shall be IP 67 and IP 20 respectively. The creepage distance of the insulator shall not be less than 900mm for the highly polluted environment in accordance with IEC 815. The auxiliary contacts and control equipment shall be located beneath the base plate so as to be accessible from within the vehicle. The control cable shall be compliant to the requirements of EN45545 or equivalent in respect of fire, smoke, & toxicity characteristics. A 110 V D.C connector of proven design shall be provided. The VCB base plate along with bottom cover shall be suitably protected to prevent corrosion in adverse environment of Bengaluru. The mounting plate of VCB shall be provided with a proper sealing to avoid ingress of water from roof. The past three year's record of proposed VCB shall establish NIL failure of vacuum tube and not more than two component failures in last three years. The VCB shall be suitable for repeated switching within short time comparable with the short (6m) neutral sections. Type test reports shall be submitted. Spare auxiliary interlocks, adequate in number duly cabled upto terminal block in the electrical cubicle shall be provided.</p>
10.	Schedule-A Clause 9.1.2	<p><u>Replace:</u></p> <p>The auxiliary power supply system shall be configured such that it performs reliably for all operating train consists. Full auxiliary power shall be available from 19KV to 31KV.</p> <p><u>With:</u></p> <p>The auxiliary power supply system shall be configured such that it performs reliably for all operating train consists. Full auxiliary power shall be available from 22.5 KV to 27.5.KV. However, from 22.5kV to 19kV and 27.5 kV to 31kV, Auxiliary Converter may work in degraded mode and capable of supplying minimum 50% of rated power to auxiliary loads in such case the auxiliary load cutoff to be approved by KRIDE/Independent engineer.</p>

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11.	Schedule-A Clause 9.1.3	<p><u>Replace:</u> The auxiliary power distribution scheme shall be such configured that main transformer shall feed to two auxiliary power supply. When any Train Operator’s cab is activated. All the auxiliary power supply equipment in the Train shall operate. In the event of failure of an auxiliary power supply equipment in 3 Car train, the remaining auxiliary power supply equipment must be capable of supplying all auxiliary power to the motor/trailer Cars for which it is installed, plus all of the 230V 50Hz 1 φ, 110V d.c. loads, 415V 3-phase for at least two third rated cooling capacity in each Car (of defective and healthy unit) and Auxiliary propulsion loads and emergency loads of the 3 Car train. All two auxiliary power supply units shall work in parallel synchronous operation control in normal as well as degraded and emergency mode.</p> <p><u>With:</u> The auxiliary power distribution scheme shall be such configured that main transformer shall feed to two auxiliary power supply. When any Train Operator’s cab is activated. All the auxiliary power supply equipment in the Train shall operate. In the event of failure of an auxiliary power supply equipment in 3 Car train, the remaining auxiliary power supply equipment must be capable of supplying all auxiliary power to the motor/trailer Cars for which it is installed, plus all of the 230V 50Hz 1 φ, 110V d.c. loads, 415V 3-phase for at least 50% rated cooling capacity in each Car (of defective and healthy unit) and Auxiliary propulsion loads and emergency loads of the 3 Car train. All two auxiliary power supply units shall work in parallel synchronous operation control in normal as well as degraded and emergency mode.</p>
12.	Schedule-A Clause 9.2.16	<p><u>Replace:</u> 24V DC LED based lighting arrangement shall be provided in the APS box for maintenance purpose. Its failsafe interlocking with the box cover shall be ensured. Lessor shall submit the detail document for Independent Engineer’s review during design stage.</p> <p><u>With:</u> 24V DC LED based lighting arrangement shall be provided in the APS box for maintenance purpose. Its interlocking with the box cover shall be ensured. Lessor shall submit the detail document for Independent Engineer’s review during design stage</p>
13.	Schedule-A Clause 10.4.9	<p><u>Replace:</u> Single point uploading of software and down loading of faults shall be possible from TCMS nodes in each Car. In-case of sub supplier’s equipment like doors, PIS, HVAC etc. also, single point uploading of software and down loading of faults train basis shall be ensured. Single point uploading of all software of all sub systems/systems shall be possible in less than 10 minutes. In addition, it shall be possible to update software, modify parameter setting etc. of one or more of the selected sub-systems by Lessor’s maintenance personnel using remote wireless access.</p> <p><u>With:</u> Single point uploading of software and down loading of faults shall be possible from TCMS nodes in each Car. In-case of sub supplier’s equipment like doors, PIS, HVAC etc. also, single point uploading of software and down loading of faults train basis shall be ensured. Single point uploading</p>

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SN	Clause/Item	Amendment
		of all software of all sub systems/systems shall be possible in less than 20 minutes . In addition, it shall be possible to update software, modify parameter setting etc. of one or more of the selected sub-systems by Lessor's maintenance personnel using remote wireless access.
14.	Schedule-A Clause 10.13	<p><u>Replace:</u> i)All energy measurements shall have accuracy within ± 3 %. This shall be validated during type tests.</p> <p><u>With:</u> i)All energy measurements shall have accuracy within ± 3 %. This shall be validated for prototype during type tests. During regular operation all the energy measurements shall have accuracy within ± 5 %.</p>
15.	Schedule-A Clause 12.10.4	<p><u>Replace:</u></p> <p>PWM Generator i)Robust design fail-safe redundant PWM generator shall be used to convert the analogue signal from the Master Controller to a PWM signal for powering and braking control. The design shall ensure no shifting of calibration once done during commissioning. The outgoing PWM signals shall be hardwired. Provision of PWM generator shall be as per the interface design with signalling contractor.</p> <p>ii)The Lessor shall interface with Signalling Contractors for ATO operation interface.</p> <p>iii)The equipment shall confirm to IEC 60571, IEC 60077 and IEC 61373.</p> <p><u>With:</u></p> <p>PWM Generator i)Robust design fail-safe redundant PWM generator shall be used to convert the analogue signal from the Master Controller to a PWM signal for powering and braking control. The design shall ensure no shifting of calibration once done during commissioning. The outgoing PWM signals shall be hardwired. Provision of PWM generator shall be as per the interface design with signalling contractor.</p> <p>ii)The Lessor shall interface with Signalling Contractors for ATO operation interface.</p> <p>iii)The equipment shall confirm to IEC 60571, IEC 60077 and IEC 61373.</p> <p>Note: if lessor proposes Ethernet based effort demand instead of PWM generator the proposal may be considered upon submission of proven records of existing projects and review by independent engineer.</p>
16.	Schedule R Annexure-12 5.1	<p><u>Replace:</u> M and P required for depots, studied across DPR of BSRP and other metros. Practical installation of these machineries was studied by visiting DMRC and BMRCL depots and final requirement for BSRP was formulized and same was discussed with HYT for detail specifications and present market price. Specification is provided in annexure 4.</p>

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17.	<p>Schedule R Annexure-12 5.2 Note</p>	<p><u>Replace:</u> Specification and present rate were taken from HYT limited and rates were tabulated as below. (detailed specification is given in appendix)</p> <p><u>With:</u> Mandatory Depot Equipment (M&P) Items list to be procured by Rolling stock lessor for BSRP two major depots.</p> <table border="1"> <thead> <tr> <th align="center">SL No</th> <th align="center">M&P equipment name</th> <th align="center">Qty/Depot</th> </tr> </thead> <tbody> <tr> <td align="center">1.</td> <td>Auto Wash Plant</td> <td align="center">1</td> </tr> <tr> <td align="center">2.</td> <td>CNC underfloor wheel lathe</td> <td align="center">1</td> </tr> <tr> <td align="center">3.</td> <td>Mobile lifting jack for 3 car train</td> <td align="center">2</td> </tr> <tr> <td align="center">4.</td> <td>Bogie turntable</td> <td align="center">4</td> </tr> <tr> <td align="center">5.</td> <td>Rescue vehicle with Re-Railing and allied equipment</td> <td align="center">1 (both depots together)</td> </tr> <tr> <td align="center">6.</td> <td>Diesel operated road/ rail shunter</td> <td align="center">1</td> </tr> <tr> <td align="center">7.</td> <td>Battery operated road/ rail shunter</td> <td align="center">1</td> </tr> <tr> <td align="center">8.</td> <td>EOT cranes as per shed layout</td> <td></td> </tr> <tr> <td align="center">9.</td> <td>Air compressor</td> <td align="center">1</td> </tr> <tr> <td align="center">10.</td> <td>Fork lift battery and diesel operated</td> <td align="center">1</td> </tr> <tr> <td align="center">11.</td> <td>Scissor lift</td> <td align="center">1</td> </tr> <tr> <td align="center">12.</td> <td>Battery operated vehicle (golf cart) for carrying equipment</td> <td align="center">1</td> </tr> </tbody> </table>	SL No	M&P equipment name	Qty/Depot	1.	Auto Wash Plant	1	2.	CNC underfloor wheel lathe	1	3.	Mobile lifting jack for 3 car train	2	4.	Bogie turntable	4	5.	Rescue vehicle with Re-Railing and allied equipment	1 (both depots together)	6.	Diesel operated road/ rail shunter	1	7.	Battery operated road/ rail shunter	1	8.	EOT cranes as per shed layout		9.	Air compressor	1	10.	Fork lift battery and diesel operated	1	11.	Scissor lift	1	12.	Battery operated vehicle (golf cart) for carrying equipment	1
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18.	Schedule-A Clause 3.21.4	<p>The Proposed design for seating arrangement is attached. However, dimensions shall be finalised in approval with Independent Engineer during the design finalisation. Further the number of vertical grab poles for the convenience of passengers shall be minimum 30 numbers per car Lessor shall submit the detail document for Independent Engineer’s review during design stage.</p> <p style="text-align: center;"><u>PROPOSAL</u></p> 