Pre-Bid Replies for Selection of Lessor for Design, Manufacturing, Supply, Commissioning, Operation and Maintenance of Rolling Stock on PPP Model for BSRP

SN	Clause No.	Original Clause	Query & Suggestions	Remarks
1.	**Condition of contract Article 30**	Insurance	1. Passenger Liability – The Document does not indicate liability to the passengers. Kindly Confirm, if the same would be addressed to by K-Ride.	Refer corrigendum-2
2.	**Condition of contract Article 30.2 (b)**	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;	K-Ride being a joint policy holder with Lessor (BEML), employees of K-Ride cannot become third party. Confirm your assent to the following proposal. a. Personal Accident Cover up to maximum extent of K-Ride employee? whilst on the premises of Depot/in the train. b. If yes, kindly let us know maximum number of K-Ride employees that would be at depot premises/in the train. Third party liability per incident for death/injury & third-party property damage at Rs.5lac is it per incident or per person?	Refer corrigendum-2
3.	**Condition of contract Article 30.2 (d)**	workmen's compensation insurance;	Workmen Compensation Insurance – Would be addressed to by Lessor (BEML) for its employees/employees of contractor deployed at K-Ride premises. Not for K-RIDE workmen.	Yes. Your understanding is correct.
4.	**Condition of contract Article 35.3.2**	Termination Payment Subject to Clause 35.4, upon Termination on account of a K-RIDE Default after the Appointed Date, K-RIDE shall pay to the Lessor, by way of Termination Payment, an amount equal to the following: (a) Debt Due; and (b) 150% (one hundred and fifty per cent) of the Adjusted Equity.	• Debt Due can be assumed as short term & long-term loan. • Adjusted equity can be assumed as net worth which includes R&S (Reserve and surplus) • further if contract gets terminated in a very early stage by any reason and by the time Lessor made high commitment in such case how to recover those commitment. Also, how to protect future loss of income for Lessor.	• Definition of *'Debt Due'* is provided in Article 1 (Definitions). Please refer. • Definition of *'Adjusted Equity'* is provided in Article 1 (Definitions). Please refer. • Please refer Article 32.7, 32.8, 32.9 for Termination Payment in relation

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				to Force Majeure and Article 35.3 for Default either by Lessor or K-RIDE. upon Termination on account of a K-RIDE Default after the Appointed Date, K-RIDE shall pay to the Lessor an amount equal to the Debt Due and 150% of the Adjusted Equity. K-RIDE is paying 150% of the Adjusted Equity which will take care of future loss of income of Lessor.
5.	**Condition of contract Article 26.4**	**Payment Security** a) K-RIDE shall, within 30 (thirty) Business Days prior to the commencement of the Revenue Services of the first Train, execute an escrow agreement with the K-RIDE's bank substantially in the form specified in Schedule - L ("Escrow Agreement") for the establishment and operation of the escrow account in favour of the Lessor ("Escrow Account"). The Parties agree and acknowledge that the Escrow Account shall be established and maintained at a bank selected by the Authority at its sole discretion ("Escrow Bank"). The K-RIDE shall, fund the Escrow Account with an amount equivalent to 3 (three) times the Monthly Lease Charges and 3 (three) times the Monthly Maintenance Charges as payment security towards its obligation to pay the Lease Charges and the Maintenance Charges to the	This Clause is silent beyond 3 months in case KRIDE unable to recoup Escrow account with requisite fund.	KRIDE is Public Sector Enterprise (PSE) under the Govt of Karnataka. In normal course, state public sector enterprises are supported by State Govt budgetary support/grant in case paucity of funds for the PSE as per Govt policies and norms.

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		Lessor in accordance with the terms of this Contract ("Escrow Payment Security").		
6.	**BOQ Sheet**	Present Value (PV) (discounted at ___ percent per annum) -8.45%	IRR is shown 8.45% which is very low against such a huge investment by the Lessor please reconsider to revise IRR, ideally WACC (Weighted average cost of capital) may be considered for IRR which includes return to equity holder also.	Discount rate is calculated considering the cost of the funds based on the cost of the Government, and it is only limited to evaluation of the Bids and the selection of the lowest Evaluated Bidder. So, no change agreed. **And** The IRR rate 8.45% is only for evaluation of bids to arrive at NPV. Which will be applicable for all valid bids received. The said rate 8.45% is nothing to do with any actual payout to lessor or pay in from lessor to lessee.
7.	**Condition of contract Article 1.3**	**Deposit into Escrow Account** The Authority shall transfer an amount equivalent to 3 (three) times the Monthly Lease Charges and 3 (three) times the Monthly Maintenance Charges as payment security towards its obligation to pay the Lease Charges and the Maintenance Charges to the Lessor in accordance with the terms of this Contract (the Escrow Amount).	Please clarify the amount in Escrow account to be deposited by K-RIDE.	K-RIDE shall deposit an amount equivalent to 3 times the Monthly Lease Charges and 3 times the Monthly Maintenance Charges based on the Lease Charges and Maintenace Charges

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				payable to the Lessor as per its Bid.
8.	General		Since the SPV needs to make initial Investments of Capex in initial period and further investment for Sustenance Capex & Opex commitment (Statutory). How SPV can be compensated as per the termination clause, if any left out.	It is understood that all the capex shall be financed through the Debt & Equity. In case of Termination, Termination Payment is combination of Debt Due and Equity. So, no change agreed.
9.	**Schedule-A, Clause 3.17**	Supply voltage system for catenary voltage variations	We understand that IEC 60850 shall also be followed ensuring durations for voltage variation is limited as per norms. Please clarify.	Refer corrigendum-2
10.	**Schedule-A, Clause 3.22**	Performance requirement	Request to share inputs needed for performance simulations. - Track data with details of gradient, stoppages, curvatures etc.	Will be shared
11.	**Schedule-A, Clause 3.22**	Adhesion	Request to define the % adhesion allowed to be used during Traction mode. Also pl. confirm adhesion in service brake with regeneration is limited to 16% only.	Refer corrigendum-2
12.	**Schedule-A, Clause 3.22.1**	Acceleration requirement	Request to revisit the acceleration requirements, 0.85 m/s^2 for 0 to 60km/h and 0.65 m/s^2 for 0 to 80 km/h. In general, for all vehicle loading conditions, requested acceleration is significantly higher than Metro and sub-urban operation. Acceleration of 0.6m/s2 for 0 to 60km/h (Reference CMRL P2, DMRC RS17) and 0.3m/s2 for 0 to 80 km//h (Reference CMRL P2, DMRC RS17) is more appropriate for the application of metro, whereas for sub-urban application usual practice is of 0.5m/s2 for 0 to 40km/h (Reference: MEMU) with time to reach peak speed. Request to revisit above requirement and request to synergise with metro or sub-urban application.	Refer corrigendum-2

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13.	**Schedule-A, Clause 3.22.1**	Annual running distance of one train (for design purpose) 150,000 km	From rolling stock design, operation and maintenance point of view annual mileage plays a major role. Apart from availability, minimum design and operational annual mileage is required. KRIDE to please review and clarify	Tender condition prevails. Annual milage can be considered as 150000km
14.	**Schedule-A, Clause 3.22.7**	The Lessor shall handover one complete set of calculation for the above studies including assessment of energy conservation modes (Clause 3.22.1 above) along with the requisite documentation, during design stage to the K-RIDE. The software simulation shall calculate Run Time performance of the train under varied loads, route profiles, headway, inter-station distances, train resistance, Train formation and TE/BE characteristics, evaluation of energy conservation modes etc. The software simulation and calculation shall not be restrictive to the above and shall be for general application with provision for the Independent Engineer to select parameters. Nominated K-RIDE staff shall be fully trained and made fully conversant by the Lessor for this purpose software(s) package and associated hardware employed shall be shall be submitted once the termination notice is issued by either party. The handed over set shall be fully functional during the contract period h& shall require no inputs or facilities whatsoever from K-RIDE.	In corrigendum 1 issued, software package is removed from the scope. However, we still have statements regarding software package delivery and training etc. to be removed. In Corrigendum 1, the software package is no longer included in the scope. Therefore, all clauses related to software package delivery and training to be removed from the contract. We kindly request K-ride to take note of this change and update accordingly Proposed clause: 'The Lessor shall handover one complete set of calculation for the above studies including assessment of energy conservation modes (Clause 3.22.1 above) along with the requisite documentation, during design stage to the K-RIDE. The software simulation shall calculate Run Time performance of the train under varied loads, route profiles, headway, inter-station distances, train resistance, Train formation and TE/BE characteristics, evaluation of energy conservation modes etc. The software simulation and calculation shall not be restrictive to the above and shall be for general application with provision for the Independent Engineer to select parameters. Nominated K-RIDE staff shall be fully trained and made fully conversant by the Lessor for this purpose software(s) package and associated hardware employed shall be shall be submitted once the termination notice is issued by either party. The handed over set shall be fully functional during the contract period h& shall require no inputs or facilities whatsoever from K-RIDE.'	Tender condition prevails
15.	**Schedule-A, Clause 5.14.1**	Oil type Wheel flange lubricators (oil type) of a proven design in EMU/ metro application shall be provided only at both driving ends of each train. A suitable mechanism shall be provided to ensure that	Please clarify the requirement "….to reduce wear of wheel & track/rail and reduce noise in the curves".	Your understanding is correct and only wheel flange lubricator is

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		lubricators operate only in the leading position on the train actuate suitably during traversing of the curves automatically and shall be effective for all wheels, The purpose of the WFL shall be to reduce wear of wheel & track/rail and reduce noise in the curves.	Our understanding is that only wheel flange lubrication is required. other lubrication methods like top of rail, check-rail lubrications are not required which will make the system more complex and inefficient.	required as stated in clause 5.14.1
16.	**Schedule-A, Clause 5.14.3**	The spray of oil shall be time controlled as well as distance controlled. The actuation and spray cycle and quantity shall be decided by the location and degree of the curve which shall communicated to the system by a centrifugal force sensor, coordinates and parameters of curves informed by the vehicle or/and through GPS. Status of WFL shall be available in TCMS. It shall be possible to isolate the equipment through TCMS in case of any defect/malfunctioning.	Whether ethernet communication is required between TCMS and WFL. Please clarify.	No. Hardwire communication shall be considered. However, it is left to lessor to choose.
17.	**Schedule-A, Clause 5.16.1**	The wayside system shall at least be able to monitor the following parameters-: (i) Axle Box bearing temperature (ii) Hot wheel detection (iii)Wheel flat detection through Wheel Impact Load detection (WILD) (iv) Detection of non-rotating axles (v) Bogie dynamic characteristics affecting safety including hunting.	Sub clauses of 5.16.1 are removed, and in 5.16 description, "wayside" has been removed. so, this has made the clause 5.16 an open-ended clause. please clarify types of Rolling stock CMS and no. of installation required for realistic costing.	Refer corrigendum-2
18.	**Schedule-A, Clause 6.17.2**	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	Ethernet based effort demand is proposed instead of PWM generator. Therefore, request to update the clause accordingly	Refer corrigendum-2

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		mode operation when PWM data is not available from both the PWM generator and TCMS back-up, because of any reason.		
19.	**Schedule-A, Clause 8.1.4**	All propulsion equipments shall be rated to ensure for operation of normally operating train for a further period of 2 hours or a round trip whichever is more with half propulsion power (50%) in operation.	Please be informed that as per the applicable requirement 3.23.1 ii), the performance requirement for a 50% failure case is already specified, and the proposed clause is contradictory to it. Therefore, we kindly request to remove this clause accordingly.	Refer corrigendum-2, for clause 3.23.1(ii)
20.	**Schedule-A, Clause 8.3.1**	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.....	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 200,000 300,000 operations & IEC 60077-4.	Tender condition prevails.
21.	**Schedule-A, Clause 8.3.1**	….....Spare auxiliary interlocks, at least 20% duly cabled upto terminal block in the electrical cubicle shall be provided.	….....Spare auxiliary interlocks, adequate in number at least 20% duly cabled up to terminal block in the electrical cubicle shall be provided.	Refer corrigendum-2
22.	**Schedule-A, Clause 8.7.7**	The kVA rating of the transformer shall be designed to deliver the power to the continuous load as calculated with specified run cycle at Clause 8.10.5, Technical Specification, Section VI B, and 10% extra for maximum load for 60 minutes. The overloading of transformer for typical run shall be specified and type tested. Short time Ratings (say 15 sec & 110 sec as the case may be) shall be submitted along with the justification.	This could result in unnecessary oversizing of the transformer, which can lead to increased costs and add to the weight of the Train. Therefore, we kindly request that the 10% extra capacity requirement be removed. Please note 10% extra capacity is not part of requirements from past projects like Chennai Ph2, Mumbai L4, DMRC Ph4 (312 cars).	Tender condition prevails.
23.	**Schedule-A, Clause 8.7.16**	Transformer cooling arrangement shall be designed to ensure completion of round trip (without loss of time) of already working train with only one radiator fan working.	We understand that there is already a requirement to complete the round trip without a loss of time with a 25% motorization cutout. However, this requirement is independent of the requirement we are addressing. Additionally, if this requirement is to be fulfilled, it should be checked in a healthy train condition. We kindly request your confirmation on this	Tender condition prevails

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			matter. If both requirements are meant to be linked together, it would result in a double failure case, and it would not be possible to meet the adherence to the time table journey.	
24.	**Schedule-A, Clause 8.9.4**	The current rating of the semiconductor shall be such that the junction temperature has the minimum thermal margin of 10°C in the worst loading conditions taking into account the extreme ambient conditions in Bengaluru and surrounding. Lessor shall consider the temperature rise of the air in vicinity of the equipment on account of different factors including proximity impact in the underframe, difference in wheel diameter of the bogie(s) and rescue operation etc	As, train rescuing is a limited and short-period operation, and therefore, we believe that K-ride is not expecting a 10°C thermal margin requirement for rescue purposes. However, we can assure you that the equipment will perform its function during the rescue operation without damage. Accordingly, we kindly request that the requirement be modified by removing the "rescue" operation or better clarify its interpretation to avoid any ambiguity in the future.	Tender condition prevails
25.	**Schedule-A, Clause 8.9.13**	(v) Current drawn by each motor shall be measured and recorded.	We understand that in group drive system, important is to measure current delivered by respective inverter which ensures integrity of control and protection aspects. Measuring current on each motor of group drive system will not add any benefit from control and protection prospective. Kindly Confirm.	Tender condition prevails
26.	**Schedule-A, Clause 9.1.2**	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.	It any be noted that full power availability for auxiliary converter at 31kV is technically challenging and will bring impact on associated products including main transformer. Hence, we request to keep 27.5 kV for full power in line with IEC 60850 & EN 50388 and reduced to 50% at 29kV.	Refer corrigendum-2
27.	**Schedule-A, Clause 9.1.3**	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	Clause may please be modified as below in line with previous metro tenders. 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,	Refer corrigendum-2

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		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.	110V d.c. loads, 415V 3-phase for at least two third 50% of 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.	
28.	**Schedule-A, Clause 9.2.5**	The supply shall be regulated within ±5% of the nominal voltage and total harmonic disturbance shall be limited to 5% under all operating conditions. Phase-to-phase voltage imbalance shall not exceed 1% between phases. The converter shall otherwise comply with the provisions of IEC 61287-1.	A phase-to-phase voltage imbalance of 1% between phases is outside the scope of the EN Standard 50533:2011, which stipulates a limit of 2%. We kindly request that the clause be updated to reflect the EN Standard's requirements and specify that "Phase-to-phase voltage imbalance shall not exceed 2% between phases. "	Tender condition prevails
29.	**Schedule-A, Clause 9.2.8**	(iv) …...The diagnostics system memory shall be retained for at least 400 events.	We would like to clarify that the diagnostics shall be saved in TCMS, and it has the capacity to store up to 400 faults. However, the TCMS has a refresh rate and works on a First In, First Out (FIFO) basis. Which means that if 400 faults are not recorded for the auxiliary converter within a given time, the faults would be erased during the TCMS refresh. We kindly request you to confirm our clarification to avoid any ambiguity during project execution.	Events to be stored in TCMS are different from events stored in APS control unit. TCMS refresh shall not impact the data stored in APS control unit.
30.	**Schedule-A, Clause 9.2.16**	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.	We would like to request a clarification regarding expectations for the failsafe interlock. Based on our understanding, LED-based lighting arrangements will be provided within the inverter box for maintenance purposes, with the necessary interlock with the box cover to ensure that the lights go off when the cover is closed. During regular maintenance activities, a check for light or switching element failure (snap action) can be performed. Therefore, we believe that a failsafe interlock is not necessary. Please kindly provide us with further information on the expectations regarding the failsafe interlock	Refer corrigendum-2

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31.	**Schedule-A, Clause 10.1.3**	Fault Diagnostic Functionality " Incident investigation and reporting "	Our understanding is all levels of fault diagnostics will be analysed to find out probable root cause of the faults as a trouble shooting feature & communicated through VDU to train operator in manual mode for necessary action.	Tender condition prevails
32.	**Schedule-A, Clause 10.1.6**	During the development of TCMS for the project, the K-RIDE may depute team of engineers to fully associate with the TCMS/controls design work so as to make them competent to implement software changes as required within the scope of this contract. Lessor shall ensure full association and support of Lessor's team with the K-RIDE_s team throughout the project or as the case may be	Requirement modified as "During the development of TCMS for the project, the K-RIDE may depute team of engineers to fully associate with the TCMS/controls design work. Lessor shall ensure full association and support of Lessor's team with the K-RIDE's team throughout the project or as the case may be". We would like to understand what is the expectation of "to fully associate with the TCMS/controls design work"	Tender condition prevails
33.	**Schedule-A, Clause 10.4.9**	Single point uploading of all software of all sub systems/systems shall be possible in less than 10 minutes	We propose not be more than 20 minutes each and the same shall be demonstrated	Tender condition prevails
34.	**Schedule-A, Clause 10.5.6**	(i)The recorder shall have capacity for 24 hours recording of vital data and operating data. (ii) A non-volatile memory capable of retaining the recorded data with time stamp and location for at least 30 days.	We propose 24 hours recording of selected data and recorded data with time stamp and location for at least 15 days	Tender condition prevails
35.	**Schedule-A, Clause 10.13**	Energy Measurements The control system shall be designed to ensure accurate energy measurements. The integrity of measurements with train shall be ensured, recorded and retrievable. ..... (i) All energy measurements shall have accuracy within ±3 %. This shall be validated during type tests. The data shall be stored for 15 days and shall be downloadable as and when required. (iii) The motoring, coasting & re-generated components shall be recorded separately during the	(i) We would like to inform you that based on our past experience, the energy measurement accuracy is 5%. Hence, we kindly request K-ride to modify the requirement as follows to allow us to comply with a value that is practical and proven: (i) All energy measurements shall have an accuracy within ±5%. (iii) We propose the data shall be stored for one week and shall be downloadable as and when required.	Refer corrigendum-2

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		day and shall be available for every 5 min in 24 hr. cycle (00 hrs. to 00 hrs.) with time and distance travelled stamp. It should also be possible to link the Train Operator's particulars with these measurements. Complete data shall be transmitted to control centre at assigned times which shall be advised during design. The data shall be stored for 15 days and shall be downloadable as and when required		
36.	**Schedule-A, Clause 12.10.4**	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.	Ethernet based effort demand is proposed instead of PWM generator. Therefore, request to update the clause accordingly	Refer corrigendum-2
37.	**Schedule-A, Clause 12.11.4**	All auxiliary motors, including that of the auxiliary compressor, shall conform to the requirements of IEC 60349-2.	IEC 60349-2 applies for traction motors, which are electronic converter – fed alternating current motors. Instead, we propose IEC 60034 for auxiliary motors used in traction and auxiliary converters. IEC 60349-2 applies to traction motors, which are electronic converter-fed alternating current motors, we would like to propose that IEC 60034 be used for auxiliary motors used in both traction and auxiliary converters. This standard is more applicable. We kindly request that you consider our proposal and update the relevant requirements accordingly.	Tender condition prevails