

**Chennai Metro Rail Limited**  
**Tender Description: Expression of Interest for providing Rolling Stock(42 Trains Of 3 Car Configuration - 126 Cars) on lease basis for Phase II of Chennai Metro Rail Project.**  
**Tender No. CMRL/PHASE II/SYS/ARE04/2021**  
**Tender ID: 2021\_CMRL\_641951\_1**

Pre-EOI Meeting -Response to Bidders Queries						
Sl no	Part/Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
1	EOI Instructions to tenders	1.2.2	The Lessee at his discretion may advise the Lessor in writing about increased requirement of Rolling Stock for operation on Phase II. For any increase in quantity, Lessee may exercise the option on any date within five years of the scheduled induction of last trainset on revenue service.	As the Rolling Stock manufacturer would need to have manufacturing slots reserved in the factory for production of Rolling Stock, sufficient notice needs to be provided for exercise of such an option. Accordingly, we request tht the Lesse should exercise the option on any date one year prior to the scheduled induction of the last trainset on revenue service.  Please also confirm if the present quantity of 42 trainsets as requested covers the maintenance and operations spare trainsets as well.	Additional trains is not required in PPP model. This sentence shall be deleted. Please refer to Addendum (01) 42 trains cover O&M spares.	Y
2	EOI Instructions to tenders	1.3	There are no restrictions on the country of origin of Plant, equipment, materials, and services to be provided under the Contract. However, all Plant, equipment, materials and services shall be to the satisfaction of the Lessee and Engineer.	Please confirm that this tender is subject to Rule 144 (xi) of the General Financial Rules, 2017 published by Procurement Policy Division, Ministry of Finance as per which a bidder would be required to register with the Competent Authority if it belongs to a country sharing a land border with India, as detailed in this order.	Refer Addendum (01)	Y
3	EOI Instructions to tenders	3.1.4 (vii)	However, in case of consortium/JV between companies and their subsidiaries where either the parent or the subsidiary or both is/are (an) Indian company/companies registered in India, parent company shall be eligible to apply on the basis of credentials of their owned subsidiaries. Subsidiaries shall be eligible to apply on the basis of credentials of their parent company. Here it will be mandatory that the applicants must enter into a consortium/JV agreement with a token participation of such parent/ subsidiary whose credentials are being sought to be used. This consortium/JV agreement should clearly stipulate that the individual companies (i.e. the parent and the JV) shall be jointly and severally responsible and liable for the timely execution of the contract and failure to do so will make all of the them liable to the penal conditions of the contract. In such case there will be no requirement of the minimum threshold of 15% participation by each member of the consortium/JV.	We request that Indian companies should be permitted to participate together with token participation of their foreign sister companies (ultimate ownership by a common parent). Accordingly, we request the following modification:  However, in case of consortium/JV between companies and their subsidiaries/Associates where either the parent or the subsidiary/Associates or both is/are (an) Indian company/companies registered in India, parent company shall be eligible to apply on the basis of credentials of their owned subsidiaries. Subsidiaries/Associates shall be eligible to apply on the basis of credentials of their parent company/Associates. Here it will be mandatory that the applicants must enter into a consortium/JV agreement with a token participation of such parent/ subsidiary/Associates whose credentials are being sought to be used. This consortium/JV agreement should clearly stipulate that the individual companies (i.e. the parent/Associates and the JV) shall be jointly and severally responsible and liable for the timely execution of the contract and failure to do so will make all of the them liable to the penal conditions of the contract. In such case there will be no requirement of the minimum threshold of 15% participation by each member of the consortium/JV.  "Associate means, in relation to the Applicant/consortium members, a person who controls, is controlled by, or is under the common control with such Applicant or Consortium Members, as the case may be (the "Associate"). As used in this definition, the expression "control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law."	Please check Addendum (01)	Y
4	EOI Instructions to tenders	1.3.1 Initial Eligibility Criteria Footnote 7	RSM, shall have option to participate either as a member of the Applicant consortium/JV/SPV or as a subcontractor to any Applicant.	Considering the short time span available for the submission of this EoI and in the absence of further details available for the project, we request that RSM should be permitted to qualify on its own and/or as a subcontractor during the EoI stage. During the RFP stage, the qualified RSM should be provided the flexibility to bid either on its own or as a subcontractor to other Applicants.  We request CMRL to also clarify that if the RSM is not the Lead Member of the Consortium or is a subcontractor, then a different RSM can be proposed at the RFP stage provided it continues to meet the eligibilty requirements specified in the EoI for RSM.	CMRL will finalize only Lead Member. RSM can be decided in RFP stage.	Y
5	EOI Instructions to tenders	1.3.2	Each Applicant shall submit only one EOI. If an Applicant submits an EOI in his own name and at the same time participates and submits an EOI as a member of a consortium/joint venture, both applicants will be disqualified. However, a propulsion system supplier can participate either as a member of any JV/Consortium applying for this EOI or as a sub vendor to other Applicant (s).	Please confirm that the RSM can participate as a subcontractor to more than one Applicant.	YES	N
6	EOI Instructions to tenders	Corrigendum 1	Clarification End Date & Time: 31-08-2021 & 06.00 pm	We request extension of the Clarification End Date by one week to 07-09-2021	Addressed in Corrigendum 02	N

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7	EOI Instructions to tenders	Corrigendum 02 & 03	Last Date and Time of submission/uploading of EOIs 21st September 2021 till 13:00 hrs	Considering the complex nature of this project and the time required to finalise the consortium structure comprising of Financial Institutions, Rolling Stock Manufacturers, Maintenance Service Providers and other entities, the time providing for submission of this EoI is very short. We would therefore request CMRL to extend the EoI submission deadline by one month to 21st October 2021 in order to provide the bidders adequate time to finalise their Applications.	Addressed in Corrigendum 02 & 03	N
8	EOI Instructions to tenders	Instruction to Applicants, Clause 1.5	The contract period shall be 39 years (including 4 years for initial supply & commissioning of trainsets and considering the maintenance period of each trainset as 35 years). <b>This means that contract shall be operative at least till completion of life cycle, i.e. 35 years from the date of commissioning of the last trainset.</b>	Bidder understand that the life cycle of the trainset will be 35 Years and same will be the maintenance period for that particular trainset.  As the deliveries and commissioning of complete fleet of 42 trainset will be staggered, we understand that maintenance period of each trainset shall also be different, accordingly please modify the last sentence as below:  <i>"This means that contract shall be operative, on each trainset basis, at least till completion of life cycle of each trainset, i.e. 35 years from the date of commissioning of the each last trainset."</i>	Trains will be inducted in service by CMRL on LOT Basis. (Final Lot size and periodicity shall be specified in RFP stage.) The contract shall be operative till the completion of mid life refurbishment of the last trainset.	Y
9	EOI Instructions to tenders	Instruction to Applicants, Clause 1.5	The payment terms shall be detailed in the RFP Document and shall be based on train revenue service hours(hourly running of trains). <b>Payment of lease charges shall be fixed</b> and on quarterly basis subject to the terms in RFP. CMRL shall pay minimum guaranteed demand. Details of Minimum guaranteed demand shall also be included in the RFP document.	Considering the long duration of Maintenance scope, it is extremely difficult to offer a fixed price for a period of more than 39 Years, <b>request to add the price adjustment methodology for Maintenance scope.</b>	Tender Condition Prevails.	N
10	EOI Instructions to tenders	Instruction to Applicants, Clause 3.1.9	The Applicant shall quote their price in INR only. <b>Payment also will be made in INR</b> as per the RFP conditions and Schedule of Payments.	Considering long duration of contract, <b>request to allow multi currency payment.</b>	Tender Condition Prevails.	N
11	EOI Instructions to tenders	1.2.4 & 1.2.6	Functional and Performance based specifications The work comprises supply of adequate number of trains (New Stock) [...] Maintenance of Depot is not in the lessor's scope of work [...] & Management of Depot The lessor shall be responsible for management of portion of the depot provided to them.	We request you to please clarify the scope of the maintenance activities in the depot. •Will the scope for the lessor be only the maintenance of the plants and machinery required for the maintenance activities of only the lessor provided Rolling Stock. •Will the lessor be responsible for the upkeep and maintenance of the civil works in the "portion" of the depot under it also including the Inspection and Stabling bay lines?	The maintenance of plant & machinery shall be responsibility of the lessee. Elaborated in Clause 1.2.7. Tender Condition Prevails.	N
12	EOI Instructions to tenders	1.2.6	Madhavaram depot is the primary depot allocated for all T&C and maintenance related activities. However, part of the maintenance activity resources of Madhavaram depot shall be shifted to Poonamallee depot for minor maintenance activities in case of exigencies only.	Will Madhavaram Depot be available exclusive for the RS fleet provided by the Lessor or will it be on sharing basis with the Existing Stock?	The Madhavarm Depot shall be shared with other rolling stock contractor for maintenance purpose. Tender Condition Prevails.	N
13	EOI Instructions to tenders	1.2.3	The lessee shall be responsible for operation of both Existing and New Stock on Phase II.	In terms of a handover point for the Lessor's Rolling Stock, up to which point will the lessor be responsible before handing over the trains to CMRL?	will be addressed in RFP.	N
14	EOI Instructions to tenders	3.1.7	In order to have a sustainable and technically & financially sound proposal, the financial structure of the Applicant (JV/Consortium/SPV) shall be as follows: Equity: Minimum 30% Debt: Maximum 70%	Will the successful bidder be required to form a Special Purpose Vehicle (SPV), incorporated under the Indian Companies Act to execute this project?	Tender Condition Prevails.	N
15	EOI Instructions to tenders	-	General	We request you to please elaborate on the terms and conditions on the change in structure/shareholding of the successful bidder during the execution of the project. For example what are the minimum time periods for which any member of the consortium/JV/SPV would need to remain with the same participation percentage as when awarded the contract or have the option to exist?	Shall be addressed in RFP.	N
16	EOI Instructions to tenders	1.3.1	Initial Eligibility Criteria: Eligibility of Applicants – Checklist: SI No. 6,7 and 8	It is requested to delete requirement of submission of RS supplier credentials at EOI stage. RS supplier can be brought on board by successful financial institution during RFP stage or later. It is opined inclusion of RS supplier at EOI stage may limit the number of applicants. Please amend.	Please refer to Addendum (01).	Y
17	EOI Instructions to tenders	1.3.1	Initial Eligibility Criteria: Eligibility of Applicants – Checklist: SI No. 9	It is requested to delete requirement of submission of propulsion supplier credentials at EOI stage. Propulsion supplier can be brought on board by the preferred RS supplier at later stages. It is opined inclusion of propulsion supplier at EOI stage may limit the number of applicants. Please amend.	Please refer to Addendum (01).	Y

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18	EOI Instructions to tenders	Sl. No. 6 of Note 1.3.2	Change in the composition of EOI qualified Applicant before RFP may be permitted by CMRL at its sole discretion on receipt of specific written request from the qualified Applicant subject to the following conditions: a. The new Applicant must qualify the initial eligibility criteria of the EOI, and b. <u>There shall be no change in "Lead Member"</u> .	Can an EOI qualified lead member himself, act as sub-contractor or consortium member to other EOI qualified lead member during RFP stage. Kindly clarify.	No Tender Condition Prevails	N
19	EOI Instructions to tenders	1.3.1	Initial Eligibility Criteria: Eligibility of Applicants – Checklist: SI No. 6 Experience of completed supply and maintenance of Rolling Stock works during last 10 years ending last day of month previous to the one in which applications are invited, should meet the following.....	Can you please explain the term maintenence in relation to qulaification criteria? In our opinion warranty maintenance shall also be considered. Kindly clarify.	Please refer to Addendum (01).	Y
20	EOI Instructions to tenders	1.1 (vi)	"Lessee" means CHENNAI METRO RAIL LIMITED (CMRL), its legal successors and assignees.	In our view, there is discrepency in definition of Chennai Metro as Lessee and contractor as Lessor; May kindly review / Modify.	The sentence is clear	N
21	EOI Instructions to tenders	1.2.3	The scope of work would also include maintenance of the New Stock for 35 years in the depot assigned by CMRL.....	We opine 35 years contract period is too long to make any meaningful estimations, risks estimation / distribution. Also, so far we find only limited success for these kind of long term models. We suggest the period to be reduced to 15 years from the existing 35 years. Post 15 years, CMRL may purchase the tainsets at a value. Kindly consider / amend.	Please refer to Addendum (01).	Y
22	EOI Instructions to tenders	3.1.5	The Applicants to qualify for award of Contract shall submit a written power of attorney bearing specimen signatures of the authorized signatories of the EOI to commit each member of the partnership, consortium or joint venture.	We could not find any format of Power of Attorney similar to what we have seen in earlier Chennai Metro tenders. Please provide the format. Else, is it acceptable if bidder uses his own format? Kindly clarify / provide.	Please refer to Addendum (01).	Y
23	EOI Instructions to tenders	1.3.1		In the link – there is an header "eligibility criteria" which the bank has to go through and if there is any doubt / query or if the bank wants to give any suggestions, such communication should be sent to CMRL on or before 06-Sep-2021. The same will be discussed by the Senior management of CMRL and they will revert. Further there is no bar/restriction on Chinese Companies / Bank participating in the EOI/RFP Our observation: While going through the EOI, we have not come across any clause which prescribe a Bank to be part of EOI/RFP. Request you to clarify or correct me if have misunderstood your statement and if the gist of the meeting is in line with our conversation	Bank is financial institution. Refer Addendum (01) for conditions on border sharing nations.	Y
24	EOI Instructions to tenders	1.2.3 Functional and Performance based specifications	The scope of work would also include maintenance of the New Stock for 35 years in the depot assigned by CMRL with the facilities available therein during the Contract Period including the supply of requisite spares, tools & tackles, test benches and Machinery & Plant (Excluding Depot Equipments) as required to undertake maintenance during the Contract Period.	We request CMRL to split the maintenance scope of the contract for 35 years to 15 years and 20 years. As it would be extremely difficult to offer a fixed price for a period of 35 years starting from the date of commissioning of the last trainset.	Please refer to Addendum (01).	Y
25	EOI Instructions to tenders	1.2.5 Contract Period	The contract period shall be 39 years (including 4 years for initial supply & commissioning of trainsets and considering the maintenance period of each trainset as 35 years). This means that contract shall be operative at least till completion of life cycle, i.e. 35 years from the date of commissioning of the last trainset.	We understand that Supply, Testing & Commissioning of 42 trainset will be staggered, so we request to modify the clause accordingly.	CMRL intends to induct trains on LOT basis, but minimum guarantee will start from the induction of the last Train.	Y
26	EOI Instructions to tenders	1.2.5	The contract period shall be 39 years (including 4 years for initial supply & commissioning of trainsets and considering the maintenance period of each trainset as 35 years). This means that contract shall be operative at least till completion of life cycle, i.e. 35 years from the date of commissioning of the last trainset.	Is there any Cap in Exit clause for SPV Consortium Partners before 35yrs between RS-OEM / Maintainer / Financial Partner? Since these are critical points, we request you to clarify at EoI stage only.	Will be detailed in RFP stage.	N
27	EOI Instructions to tenders	1.2.6	Details of the planned facilities in the above mentioned depots in addition to sharing of depot area and equipments will be provided in RFP.	Please share the framework of Shared basis Depot.	Will be detailed in RFP stage.	N
28	EOI Instructions to tenders	1.3	The eligible applicants shall be allowed to submit the bids through its associates as eligibile bidders. This shall be allowed with minimum participation of the associates.	We request you to replace Paragraph 2 with the following paragraphs: "Subsidiaries shall be eligible to bid on the basis of credentials of their parent company or their Associate. Here it will be mandatory that the bidders must enter into a consortium/JV agreement with a token participation of such parent/ subsidiary/Associate whose credentials are being sought to be used. For purposes of this RFP/Tender/Contract, Associate means, in relation to the Bidder/ Member of Consortium/JV, a person who controls, is controlled by, or is under the common control with such Bidder/member (the 'Associate'). As used in this definition, the expression "control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law. "	Please refer Addendum (01)	Y

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29	EOI Instructions to tenders	1.3.1 (Note 7)	RSM, shall have option to participate either as a member of the Applicant consortium/JV/SPV or as a subcontractor to any Applicant.	Financial Institute may be more comfortable, dealing with the operator & developer CMRL, instead of making an SPV with RS OEM. Is this option allowed?	Please refer Addendum (01)	N
30	EOI Instructions to tenders	1.5	CMRL shall pay minimum guaranteed demand. Details of Minimum guaranteed demand shall also be included in the RFP document.	Kindly clarify minimum guaranteed demand at EoI stage only, as it is critical.	With regards to payment security by CMRL, Sovereign guarantee from GOTN will be available. Details shall be defined in RFP.	Y
31	EOI Instructions to tenders	1.5	The payment terms shall be detailed in the RFP Document and shall be based on train revenue service hours(hourly running of trains).	We request you to include the following clause: "Payment will be made based on actual availability of train"	Tender Condition Prevails.	N
32	EOI Instructions to tenders	General	-	We request you to kindly include Compensation Clauses in Force Majeure conditions.	Will be detailed in RFP stage.	N
33	EOI Instructions to tenders	General	-	Kindly clarify the Cap on Penalties.	Will be detailed in RFP stage.	N
34	EOI Instructions to tenders	General	-	We request you to limit the overall liability of the contractor to 10% of overall contract value.	Will be detailed in RFP stage.	N
35	EOI Instructions to tenders	General	-	Kindly extend timeline to submit pre-EoI queries by 2 weeks.	Please refer to Corrigendum 02.	N
36	EOI Instructions to tenders	General	-	Kindly extend the EoI submission date to 2 months after receiving replies to pre - EoI queries.	Please refer to Corrigendum 02.	N
37	ITAAAnnexure_I_II_III_IV_V : ERTS	Appendix E 1.11.5	Certificate by CMRL confirming availability of the spares in contractor stores in Depots as per agreed list will be a pre-requisite for release of interim payments of the Contractor.	Availability of spares should be handled separately. We request you to not to link it with interim rolling stock payments.	Please refer to Addendum (01).	Y
38	ITAAAnnexure_I_II_III_IV_V : ERTS	Appendix C 10.4.1 (2)	RS Contractor Shall furnish the maintenance schedules and equipment requirement for complete cars, assemblies and subassemblies systems and sub systems	In order to assess the additional requirement of M&P equipment required for maintenance, we request CMRL to share the details of existing M&P equipment available at Depot.	Will be detailed in RFP stage.	N
39	ITAAAnnexure_I_II_III_IV_V : ERTS	Appendix C 15	Asset Management System (Depot Management Tools)	Does the RS supplier need to maintain separate Asset Management System, which will then be interfaced with asset management system of CMRL?	Tender Condition Prevails.	N
40	ITAAAnnexure_I_II_III_IV_V : ERTS	16.4.3	If, at any time during the Contract, CMRL considers that insufficient, or inappropriate, resources are being committed, progress payments will be delayed until such time as the situation has been rectified to CMRL's satisfaction.	Kindly explain meaning of insufficient, or inappropriate, resources in detail.	It is self explanatory.	N
41	ITAAAnnexure_I_II_III_IV_V : ERTS	16.17.8	The Contractor is required to assess the entire cost associated with all above requirements and include the same in his Lump Sum price.	Please include PVC Formula for complete contract including spares, maintenance, rolling stock, etc.	Tender Condition Prevails.	N
42	ITAAAnnexure_I_II_III_IV_V : ERTS	16.17.8	The Contractor is required to assess the entire cost associated with all above requirements and include the same in his Lump Sum price.	Please include Forex risk coverage for complete contract duration	Shall be addressed in RFP	N
43	ITAAAnnexure_I_II_III_IV_V : ERTS	18.5.2.1	The category includes equipment failures, human errors, and/or external circumstances that result in multiple fatalities, destruction of cars, or damage to stations or track segments such that affected segments of the transit system cannot operate for an extended period.	What will be the risk of coverage caused due to error done by Operator?	Risk assessment in all aspects shall be addressed in RFP.	N
44	ITAAAnnexure_I_II_III_IV_V : ERTS	18.7.7.2	The trains supplied shall achieve a minimum average availability of 95.0% for fleet of trains for the assessment durations mentioned in ERTS 18.7.7.3.	Kindly include a bonus clause if OEM offering more than 95% availability. Since clause on penalty is a part of EoI document, we request you to also include bonus clause also in EoI document.	KPIs and payment related details shall be addressed in RFP.	N
45	ITAAAnnexure_I_II_III_IV_V : ERTS	18.7.7.2	The trains supplied shall achieve a minimum average availability of 95.0% for fleet of trains for the assessment durations mentioned in ERTS 18.7.7.3.	We request you to include the following clause: "If CMRL's demand at any point of time is equal to or less than availability by OEM then no penalty should be charged (even if availability is less than 95%)"	Minimum guranteed payment shall be there. Details shall be addressed in RFP.	N
46	ITAAAnnexure_I_II_III_IV_V : ERTS	18.9.17.1	If the work exposed or examined is not in conformance with the requirements of these provisions, then the cost of uncovering, removing and restoring the work and of recovery of any delay to any critical path occasioned thereby shall be at the Contractor's expense.	Please include extension of time and compensation clause because of delays not attributed to lessee.	Shall be addressed in RFP	N

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47	ITAAAnnexure_I_II_III_IV_V : ERTS	General		During the contract period, if new depot equipment are required or any modification in Depot is needed then what will be the arrangements specified?	If new equipments are required for Maintenance activities, it shall be sourced by the lessor. It shall be installed upon receipt of approval from CMRL.	N
48	EOI Instructions to tenders	1.2.1 General Information	.....Lessee (CMRL) has initiated the contract procurement for total of 96 trainsets (3 car trainset) through two tenders (Design, Manufacture, Supply, testing and commissioning basis) one for 26 trainsets and other for 70 trainsets. Contract procurement for Signalling system for the entire Phase II also initiated by the Lessee .....	As for the signalling system, it mentioned that the contract procurement for signalling system has initiated by Lessee (CMRL).So does that mean the signalling system supplier is decided yet? If it's decided, please provide the details of signalling contractor.	Details will be provided during RFP stage.	N
49	EOI Instructions to tenders	1.2.4 Indigenization requirements & 3.1.4MoU for JV/Consortium (if applicable)	....parent company shall be eligible to apply on the basis of credentials of their owned subsidiaries. Subsidiaries shall be eligible to apply on the basis of credentials of their parent company..	1. Does that mean the the credentials of parent company or the subsidiary can be used by the other if one is the Indian company? and if the credentials of the company is used, that company shall enter into an agreement with the company using its credentials. 2. If one of the two companies(subsidiary and parent company) is Indian company, there's no requirement of the minimum threshold of 15% participation by each member of the consortium/JV as specified in Clause 3.1.4.	Please refer Addendum No. 01	Y
50	EOI Instructions to tenders	3.1 EOI Submission Documents		In EOI stage, there's no need to submit technical proposal, Please confirm.	Yes. Technical Proposal is not required.	N
51	EOI Instructions to tenders	Corrigendum 02 & 03		The time for document preparation is not enough, please extend the tender submission time for 2 months.	Addressed in Corrigendum (02)	N
52	ITAAAnnexure_I_II_III_IV_V : Section 2 – System Requirements	2.25.1&2.25.2	Tenderers shall note that ‘SPECIFIC ENERGY CONSUMPTION (SEC)’ shall be verified in any one corridor of Phase 2 as agreed with CMRL under conditions detailed hereafter in this clause shall not exceed 48 Wh/GTKM, referred to as SECs. Also the Tenderer shall submit the simulation results for all corridors of Phase 2 in Pre-Final Design stage.	We suggest to change the SEC from 48Wh/GTKM to 65 Wh/GTKM.	Tender condition prevails.	N
53	ITAAAnnexure_I_II_III_IV_V : Section 6 –Passenger Doors	6.8.2	The bypass controls shall be provided to by-pass operation of any defective doors by the train operator through TCMS DDU. Provision shall also be provided in from RSC consoles of OCC, BCC & DCCs for by-passing a faulty door, remotely.	we suggest to modify as follows:: The bypass controls shall be provided to by-pass operation of any defective doors by the train operator." Because there're safety hazards and risk for misoperation.	Tender condition prevails.	N
54	ITAAAnnexure_I_II_III_IV_V : Section 7 –Ventilation and Air-conditioning	7.4.5.8	The air conditioning system shall automatically restore normal cooling mode operation when power supply returns to normal for the individual VAC unit basis.	We suggest to moify as follows: The air conditioning system shall automatically restore normal working mode operation when power supply returns to normal for the individual VAC unit basis. Because the operation is based on the inside temperature and the cooling might not be the right working mode.	Tender condition prevails.	N
55	ITAAAnnexure_I_II_III_IV_V : Section 7 –Ventilation and Air-conditioning	7.6.3	An average temperature of 25° C and relative humidity of 60% shall be automatically maintained within the saloon and emergency operator's desk with AW3 loading until an outside ambient design condition of 38°C and RH of 36.2% for summer, and 35°C and 70% RH in winter.	An average temperature of 25° C and relative humidity of 60% shall be automatically maintained within the saloon and emergency operator's desk with AW3 loading until an outside ambient design condition of 38°C and RH of 36.2% for summer, and 31°C and 70% RH in winter. Besed on table 7-1, the maximum average temperature in winter is about 28-32°C . Therefore we suggest to change the 35°C to 31°C .	Tender condition prevails.	N
56	ITAAAnnexure_I_II_III_IV_V : Section - 13 Communications	13.5.4	The RS Contractor shall provide and install cable from the radios to the corresponding antenna, using removable connectors at each end of the cable. The cable impedance shall match the output impedance of the radio.	The cable shall be provided by TETRA supplier.	Yes it will be provided by TETRA supplier.	N
57	ITAAAnnexure_I_II_III_IV_V : Section 14-TRAIN CONTROL MANAGEMENT SYSTEM	14.10.6	Event Recorder	Please clarify the number of Event Recorder requirements for each train	One	N
58	ITAAAnnexure_I_II_III_IV_V : Section 14-TRAIN CONTROL MANAGEMENT SYSTEM	14.11.1	r) The RTR-DMS system shall be connected to the battery system and shall be considered as an essential load of train.	We suggest to delete r)clause. We suppose the RTR-DMS should be deployed in OCC, BCC, DCC, it should provide a remote ground serive. Kindly explain why it should be considerd as an essential load of train? Otherwise,please delete this section.	Tender condition prevails.	N

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59	ITAAAnnexure_I_II_III_IV_V : Section 17 –TEST PROGRAM	17.5.2.6	Floor and Roof Structure Conformance Fire Testing	Floor Structure Conformance Fire Testing The standard does not require fire testing on roof structure .	Tender condition prevails.	N
60	ITAAAnnexure_I_II_III_IV_V : Section 2 – System Requirements	19.7.2&19.29&19.30 &19.35		For the welding specifications, we suggest to add ISO and EN standards as an option.	ERTS allows for other equivalent standards subject to approval from CMRL. So tender condition prevails.	N
61	ITAAAnnexure_I_II_III_IV_V : Section 2 – System Requirement	2.3.2	All other equipment shall be designed for a minimum service life of 18 years subject to routine maintenance, overhaul, or replacement. Major subassemblies requiring overhaul or replacement to meet the requirements of this section shall be identified at Preliminary Design Review (PDR), Pre-Final Design Review (PFDR) and Final Design Review (FDR)	We suggest to modify as follows:Major subassemblies requiring overhaul or replacement to meet the requirements of this section shall be identified at Preliminary Design Review (PDR), Pre-Final Design Review (PFDR) and Final Design Review (FDR).	Tender condition prevails.	N
62	ITAAAnnexure_I_II_III_IV_V : Section 2 – System Requirements	2.26.1 General(iv)	(iii) Flammable materials shall be well contained with IP 65 protection.	We suggest to delete this clause.Flammable materials cannot fully contained with IP65 protection. The flammable materials will be tested according EN 45545-2 requirements.	Tender condition prevails.	N
63	ITAAAnnexure_I_II_III_IV_V : Section 2 – System Requirements	2.27.1.2 LCC	The LCC shall include, the capital cost, cost of operation (including energy consumption), maintenance (both material and labor), depreciation, refurbishment, inflation etc. Per unit energy consumption cost may be considered as INR 8.50.0.	When and how to refurbish the train is decided by the customer, train Manufacturer cannot give the cost of refurbishment.	Tender condition prevails.	N
64	ITAAAnnexure_I_II_III_IV_V : Section - 3 Car Body	3.6.3.4	Vertical stanchions shall be capable of sustaining a horizontal load of 2,224 N applied midway between supports, and in any direction, without permanent deformation. Horizontal handrails shall be capable of sustaining a vertical load of 2,224 N applied at any angle from vertical to 45 degrees, located midway between support, and at any position around the perimeter of the handrail without permanent deformation. Alternatively, vertical stanchions may comply with UIC 566 and EIC 12663, or approved equal. An analysis demonstrating compliance with these requirements shall be provided [CDRL 3-9]	The current stanchions can not meet this requirement. As for our products, When the handrail is applied with a load of 1300N/m, and a concentrated load of 900N is applied in the middle of the handrail, the deformation of the handrail does not exceed 1mm/m and no permanent deformation shall produce.Our handrail is applied in many projects and able to meet the practical requirements.	Tender condition prevails.	N
65	ITAAAnnexure_I_II_III_IV_V : Section - 13 Communications	3.6.4.4	3.6.4.4 Functioning Controlling, Monitoring, Reset of smoke and heat detection system shall be integrated with the TCMS and the same shall be available from OCC / BCC / DCC.	Somke and heat detection system and TCMS system are two independent systems. The functioning controlling, monitoring and reset can be realized in TCMS.	Tender condition prevails.	N
66	ITAAAnnexure_I_II_III_IV_V : Section 5 – Emergency Operator's desk	5.4.1	This display shall provide Status (Working Status and Fault status) and Controls (Isolation, System controls, reset controls) as mentioned below: xiv. Train general parameters like vehicle Speed, traction voltage, battery voltage, distance travelled, energy readings, wheel slip, wheel slide, excessive jerk. xvi. Details of Digital Manometer Pressure Gauge indications of Main Pipe, Brake Pipe, Reservoir, Brake Cylinder, etc.	The calculation of Jerk is from the recalculation of deceleration and acceleration data from the network, Thus it has a certain delay and error is calculated in a wrong way. For safety we don't recommend to use jerk as the control and examination parameter. we suggest to cancel the display of excessive jerk in Clause xiv.i We also suggest to cancel the display of brake pipe and reservoir details.because brake pipe connects the main reservoir and brake cylinder, the pipe pressure is deemed as the reservoir pressure. Therefore we suggest to cancel the display of excessive jerk in clause xiv and display of gauge indications of main pipe and brake pipe."	Tender condition prevails.	N
67	ITAAAnnexure_I_II_III_IV_V : Section 5-EMERGENCY OPERATOR'S DESK	5.4.1	The emergency operator's driving desk shall include, but not necessarily be limited to the below mentioned categories of equipment and controls: This display shall provide Status (Working Status and Fault status) and Controls (Isolation, System controls, reset controls) as mentioned below: v. Status, Isolation, reset controls and system controls of Pneumatic Braking system; vi. Status, Isolation, reset controls and system controls of Couplers system; vii. Status, Isolation, reset controls and system controls of Train Networks system; viii. Status, Isolation, reset controls and system controls of Saloon Doors system;	In consideration of safety, we don't recommend to carry out remote control(Isolation, System controls, reset controls) . for above systems	Tender condition prevails.	N
68	ITAAAnnexure_I_II_III_IV_V : Section 5 – Emergency Operator's desk	5.4.1	e) Selector switches / Isolation switches / By-pass switches A series of Selector / isolating / By-pass switches shall be provided in each emergency operator's desk to ensure that the following systems, as a minimum, can be manually isolated by the operator: i. Individual Bogies Isolation	we suggest to delete clause i: Individual bogies isolation for the limited installation space for switch.	Tender condition prevails.	N

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69	ITAAAnnexure_I_II_III_IV_V : Section 6 – Passenger Doors	6.3.14	6.3.14 It shall be possible for CMRL to modify or change the door system parameters, modify or change open-close logic of the door circuits and implement the same as required by CMRL based on their operational and maintenance requirements. Full access to the software for the purpose above shall be provided. Any hardware software tool required for this purpose shall also be provided. The documentation including but not restricted to flow charts (for complete software), signal flows, and interpretation of signal etc. shall be provided (CDRL 6-2). CMRL personnel shall be fully trained and made fully conversant by the contractor for this purpose.	we suggest to modify as follows: It shall be possible for CMRL to modify or change the door system parameters, modify or change open-close logic of the door circuits and implement the same as required by CMRL based on their operational and maintenance requirements. Their modify or change shall be sent to vehicle and door suppliers for evaluation and corresponding actions shall be taken by CMRL after safe evaluation and approval. Full access to the software for the purpose above shall be provided. Any hardware software tool required for this purpose shall also be provided. The system parameters is confidential to door system supplier and will not be provided to Employer.	Tender condition prevails.	N
70	ITAAAnnexure_I_II_III_IV_V : Section 6 – Passenger Doors	6.3.23	6.3.23 The door position measurement and detection shall be accurate and real time measurement of the distance moved by each leaf. Details shall be discussed and finalized during design stage. All door close and all door latching shall be independently monitored through two separate independent circuits. All door closing function and all door latching functions shall be separately monitored at the train level.	We suggest to modify as follows:The door position measurement and detection shall be accurate and real time confirmation of door closing and latching.	Tender condition prevails.	N
71	ITAAAnnexure_I_II_III_IV_V : Section 6 – Passenger Doors	8.4.3.3 8.4.4.2	8.4.3.3 The functions of this exterior car indicator LED light shall be as per the below requirements: 2. The light shall flash in red colour in any of the below conditions: e. When the corresponding exterior Platform Screen Door (PSD) of the same car side is having communication fault or opening/closing fault. 8.4.4.2 The functions of both interior and exterior door indicator light shall be same and as per the below requirements: e) The lamp shall be illuminated in static red color when (v) When the corresponding exterior Platform Screen Door (PSD) is having communication fault or opening/closing fault.	There's a conflict with Clause 8.4.3.3 2(e) and clause 8.4.4.2. (e)and (v). Therefore we suggest to delete clause 8.4.3.3.2.(e).	Tender condition prevails.	N
72	ITAAAnnexure_I_II_III_IV_V : Section 10-HV AND PROPULSION SYSTEM	10.2.7	All under frame mounted electrical equipment shall be sealed to IP65 at the exception of the ventilated areas unless otherwise agreed. The enclosures shall not be affected by corrosion in the service life in view of Chennai environment.	IP55 is capable for application because some equipment ,such as motor, are equipped with heat emission hole, Therefore we suggest to modify as follows: All under frame mounted electrical equipment shall be sealed to IP55 at the exception of the ventilated areas unless otherwise agreed. The enclosures shall not be affected by corrosion in the service life in view of Chennai environment.”	Tender condition prevails.	N
73	ITAAAnnexure_I_II_III_IV_V : Section 10-HV AND PROPULSION SYSTEM	10.3.6 10.3.7 10.3.12	..... The pantographs shall be provided with insulated horns .....Pantograph horns as well as pantograph strips shall be secured with Nord lock or equivalent suitable arrangement. .....Hence insulated horns shall be proposed for both pantographs.	we suggest to delete insulated horns.The interlock and performance conditions have already taken into considerations for pantograph raising and lowering. Raising to a designated position will send a feedback to TCMS and will be shown in internet screen in driver's cab.	Tender condition prevails.	N
74	ITAAAnnexure_I_II_III_IV_V : Section 10-HV AND PROPULSION SYSTEM	10.4.2	An Earth Switch shall be provided, with a sturdy key, operable from inside the car, enabling each high voltage (HV) circuit to be earthed during maintenance. .....	We suggest to install the earth switch to the high voltage box under the car.	Tender condition prevails.	N
75	ITAAAnnexure_I_II_III_IV_V : Section 10-HV AND PROPULSION SYSTEM	10.8.10 10.11.17	The protection level for enclosures of the blower motor, pump motor and complete transformer, including the terminal box, shall be IP-65. The IP protection level of Converter box and that of aux. converter shall not be less than IP 65.	We suggest to change the IP-65 to IP-55.	Tender condition prevails.	N
76	ITAAAnnexure_I_II_III_IV_V : Section 10 – HV and Propulsion System	10.18.3.6	10.18.3.6 A malfunction of a car's brake equipment shall activate the train's emergency brake and a mechanism shall be provided to remotely isolate, from the driver's cab, only the failed brake equipment on that car and enable release of the train's emergency brake.1	we suggest to modify as follow: A malfunction of a car's brake equipment shall be displayed and alarmed in DDU.The driver will handle the failure accordingly and a mechanism shall be provided to remotely isolate the failed brake equipment We also suggest to limit the maximum isolation amount on the basis of signaling system demand.	Tender condition prevails.	N
77	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.1	AAR M114-90 Specification for Helical Springs, heat treated steel	we suggest to add :EN 10089:2002 Hot rolled steels for quenched and tempered springs -Technical delivery conditions EN 13298:2003 Railway applications- Suspension components-Helical suspension springs	Tender condition prevails.	N
78	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.1	AWS D1.1 Structural Welding Code, Steel	we suggest to add :EN 15085 Railway applications - Welding of railway vehicles and components	Tender condition prevails.	N

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79	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.2.4	Bogie assemblies shall have a service life of 35 years without structural repairs under standard maintenance practices and service	The primary parts of bogies shall have a service life of 35 years without structural repairs under standard maintenance practices and service	Tender condition prevails.	N
80	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.2.9	All bogies shall have components that are interchangeable to the largest extent possible. Bogie frames shall be identical for all bogies. All similar bogies must be interchangeable without modification to the bogie assembly	All bogies shall have components that are interchangeable to the largest extent possible. Motor bogie frames shall be identical, trailer bogie frames shall be identical. All similar bogies must be interchangeable without modification to the bogie assembly	Tender condition prevails.	N
81	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.2.20	Fire properties of the materials used shall comply with EN 45545 part 1 to part 7 latest editions (Category 4-A, Hazard level HL3) as a minimum or better international standard applicable for similar Metro applications. Requirements of ERTS section 2.26 shall be met	Fire properties of the materials used shall comply with EN 45545 part 1 to part 7 latest editions (Category 3-A, Hazard level HL2) as a minimum or better international standard applicable for similar Metro applications.	Tender condition prevails.	N
82	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.3.2.2	Welded and bolted connections shall be analyzed in detail to demonstrate compliance with static and fatigue strength requirements of this specification.	Welded connections shall be analyzed in detail to demonstrate compliance with static and fatigue strength requirements of this specification	Tender condition prevails.	N
83	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.3.5.2	The number of seated passengers shall be taken as one per seat, and standing passengers as 10/m <sup>2</sup> (AW5) for all the above mentioned strength analyses.	11.3.5.2 The number of seated passengers shall be taken as one per seat, and standing passengers as 10/m <sup>2</sup> (AW5) for all the above-mentioned strength analyses except for fatigue test. The fatigue load shall be decided based on actual loading which shall correspond to AW2 loading conditions. The passenger weight for this calculation shall be taken as 65kg/person.	Tender condition prevails.	N
84	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.4.5.1	11.4.5.1 The primary suspension shall consist of elastomeric elements, such as chevrons or conical rubber springs.	The primary suspension shall consist of elastomeric elements, such as chevrons ,conical rubber springs or helical steel springs.	Tender condition prevails.	N
85	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.4.13.3	11.4.13.3 The bogies rotational resistance (X factor) test under inflated and deflated air spring conditions would be carried out at the manufacturer's works under tare conditions, the value of which should not exceed 0.08 at rotational speed of 0.8 degrees/second. The rotational resistance shall neither cause excessive flange wear nor cause any possibility of flange climbing but shall be adequate to avoid bogie hunting on straight track. The Contractor shall show by analysis that no flange climbing occurs on any curve and moving at all possible speeds. Test shall be conducted in accordance with ERTS clause 17.5.2.11.	The bogies rotational resistance (X factor) test under inflated and deflated air spring conditions would be carried out at the manufacturer's works under tare conditions, the value of which should not exceed 0.1 at rotational speed of 1 degrees/second. The rotational resistance shall neither cause excessive flange wear nor cause any possibility of flange climbing but shall be adequate to avoid bogie hunting on straight track. The Contractor shall show by analysis that no flange climbing occurs on any curve and moving at all possible speeds. Test shall be conducted in accordance with ERTS clause 17.5.2.11.	Tender condition prevails.	N
86	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.4.13.5	The maximum values of acceleration measured at central pivot level are: a. Vertical acceleration 0.27g b. Lateral acceleration 0.27g The contractor shall submit calculations to confirm that ride index lateral and vertical shall not exceed 2.75 under all normal operating conditions for worn-out cars operated on rundown track conditions.	The maximum values of acceleration measured at central pivot level are: a. Vertical acceleration 0.30g b. Lateral acceleration 0.30g The contractor shall submit calculations to confirm that ride index lateral and vertical shall not exceed 2.75 under all normal operating conditions for new cars and new track, and shall not exceed 3 under all normal operating conditions for worn-out cars operated on rundown track conditions. (CDRL 11-7)	Tender condition prevails.	N
87	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.4.14	Dynamic Modeling The Contractor shall submit a detailed dynamic model to demonstrate the running behavior and performance characteristics of the proposed service proven bogie design. (CDRL11-8)	We suggest to delete this clause because the dynamic modeling is confidential. .	Tender condition prevails.	N
88	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.4.18.1	The bogie suspension, in conjunction with the car body, shall be designed to enable cars to operate satisfactorily on track with the maximum specified track twist. The maximum off-loading of wheels 'ΔQ/Q' shall not exceed 50% of nominal wheel load in inflated up to maximum permissible speeds and shall not exceed 60% of nominal wheel in deflated conditions up to maximum permissible speeds. Test shall be shall conducted in accordance with ERTS clause 17.5.2.10.9	The bogie suspension, in conjunction with the car body, shall be designed to enable cars to operate satisfactorily on track with the maximum specified track twist. The maximum off-loading of wheels 'ΔQ/Q' shall not exceed 60% of nominal wheel in inflated & deflated conditions up to maximum permissible speeds. Test shall be shall conducted in accordance with ERTS clause 17.5.2.10.9	Tender condition prevails.	N
89	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.5.1.3.3	The gears shall be splash oil lubricated and a sight glass shall be provided in the gear case for inspection. It shall not be necessary to change the oil earlier than 200,000km, except for the first change.	The gears shall be splash oil lubricated and a sight glass shall be provided in the gear case for inspection. It shall not be necessary to change the oil earlier than 150,000km, except for the first change.	Tender condition prevails.	N



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90	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.6.3.4	Loads will be applied in accordance to UIC 515-4 and 615-4. Design life shall be taken as 10,000,000 cycles, minimum. Alternatively, loads may be applied using the relevant JIS standards, utilizing various loads and forces such as longitudinal load, traction motor load, gear load, brake load and other accessory loads that shall be considered in addition to the vertical and horizontal loads. In this case, a suitable number of cycles of fatigue load test which ensures a 35 year life as per the JIS standards, may be used for fatigue load testing. Test shall be conducted in accordance with ERTS clause 17.5.2.10.6.	Loads will be applied in accordance to UIC 515-4 and 615-4. Design life shall be taken as 10,000,000 cycles, minimum. Alternatively, loads may be applied using the relevant JIS standards, utilizing various loads and forces such as longitudinal load, traction motor load, gear load, brake load and other accessory loads that shall be considered in addition to the vertical and horizontal loads. In this case, a suitable number of cycles of fatigue load test which ensures a 35 year life as per the JIS or UIC standards, may be used for fatigue load testing. Test shall be conducted in accordance with ERTS clause 17.5.2.10.6.	Tender condition prevails.	N
91	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.6.4.2	The car body connection to the bogie shall be designed, manufactured and installed in conformance with international standards. The Contractor shall ensure that the bogie assembly does not permanently deform or separate from the car under all worst-case operating conditions and collision scenarios.	The car body connection to the bogie shall be designed, manufactured and installed in conformance with international standards. The Contractor shall ensure that the bogie assembly does not separate from the car under all <b>normal</b> operating conditions and collision scenarios.	Tender condition prevails.	N
92	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.9.11	Wheel sets comply with requirements as per UIC Codes 811, 813-1 or the AAR Wheel and Axle Manual.	Wheel sets comply with requirements of EN 13260\UIC 811\UIC813-1\AAR Wheel and Axle Manual	Tender condition prevails.	N
93	ITAAAnnexure_I_II_III_IV_V : Section 11 – Bogie Assembly	11.9.17	Grease lubricated sealed cartridge bearings shall be used. The bearing shall be such that no attention is required between bogie overhauls.	Grease lubricated sealed cartridge bearings shall be used. The bearing shall be such that no attention is required earlier than 0.8 million km.	Tender condition prevails.	N
94	ITAAAnnexure_I_II_III_IV_V : Section - 12 Pneumatic and Brake Equipment	12.3 COMPRESSED AIR SYSTEM	12.3.2 All piping shall be of stainless steel conforming to the requirements of ISO 9329-4 and ISO 9330-6 or equivalent with flared compression fittings. Alternatively, The pipe fittings shall conform to the requirements of DIN 2353 or approved equal.	The standard ISO 9329-4 and ISO 9330-6 usually not use for production, it is suggested to use ASTM 269 or other pipe standard which is widely used in India market.	Tender condition prevails.	N
95	ITAAAnnexure_I_II_III_IV_V : Section - 12 Pneumatic and Brake Equipment	12.4 AIR COMPRESSOR	12.4.1 The compressor(s) shall have sufficient capacity to meet all of the following requirements.a) The time required to charge up to full main reservoir line pressure of any rake consist with all reservoirs and equipment at zero pressure, shall be less than ten (10) minutes and full air suspension inflation shall be achieved in a further five (5) minutes.b) The pneumatic system shall be maintained within its service working pressure range when operating in normal operation, with all air operated equipment in use and at the most severe condition of loading and station stoppagesc) During normal operation the duty cycle shall not be more than 50% of running time at a declared rate of leakage, based upon the brake and auxiliary air requirements of the rake, where duty cycle is determined as: Duty Cycle = Total compressor running time on load x 100%Total rake service time The Contractor shall submit the duty cycle calculations for CMRL's review and approval. (CDRL 12-3)	The requirements of charging time and duty cycle are just applied for 3-car train only. For 6-car train, the changing time will be longer and the duty cycle may be more than 50%.	Tender condition prevails.	N
96	ITAAAnnexure_I_II_III_IV_V : Section 12 – Pneumatic and Brake Equipment	12.4.2	12.4.2 The compressors on a rake shall be synchronously controlled, ensuring that the duty cycle for each compressor is the same.	We suggest to modify as follows: the compressors(braking system) on a rake shall adopt same control strategy, ensuring that the duty cycle for each compressor is the same in a certain period of time. Please clarify that the synchronously control refers to the control strategy or the starting.	Tender condition prevails.	N
97	ITAAAnnexure_I_II_III_IV_V : Section 12 – Pneumatic and Brake Equipment	12.4.8.4	12.4.8.4 <b>All failures</b> of the air dryer unit shall be displayed in the TCMS/OCC.	We suggest to modify as follows: <b>Major failures</b> of the air dryer unit shall be displayed in the TCMS/OCC.	Tender condition prevails.	N
98	ITAAAnnexure_I_II_III_IV_V : Section - 12 Pneumatic and Brake Equipment	12.5 RESERVOIRS	12.5.2 Main reservoir with a capacity adequate for the 3-car rake consist shall be provided on each car, which shall be supplied from the main reservoir pipeline.	It is suggested to amend to the following:“Main reservoir with a capacity adequate for the 3-car rake consist shall be provided on each motor car, which shall be supplied from the main reservoir pipeline.” Generally, two main air reservoirs can already meet the air supply requirements.	Tender condition prevails.	N

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99	ITAAAnnexure_I_II_III_IV_V : Section - 12 Pneumatic and Brake Equipment	12.5 RESERVOIRS	12.5.6 All reservoirs shall have an associated automatic drain device and, where applicable, an additional manual device for venting/draining the contents of the reservoir.	It is suggested to amend to the following:"All main reservoirs shall have an associated automatic drain device and, where applicable, an additional manual device for venting/draining the contents of the reservoir."Because it will increase the risk for brake system if other reservoirs such as brake reservoir has an associated automatic drain device.	Tender condition prevails.	N
100	ITAAAnnexure_I_II_III_IV_V : Section - 12 Pneumatic and Brake Equipment	12.5 RESERVOIRS	12.5.7 All drain cocks that are fitted shall be easily accessible and the drain cock handles shall point downwards when in the closed position.	It is suggested to amend to the following:All drain cocks that are fitted shall be easily accessible and the drain cock handles shall point downwards when in the open position."Because the cock usually follow the direction of the pipeline, and the cock should be closed when normal operation.If it is downwards, it may cause out of car limit. And it is also contrary to the direction of other cocks and easy to cause misoperation.	Tender condition prevails.	N
101	ITAAAnnexure_I_II_III_IV_V : Section 12 –Pneumatic and Brake Equipment	12.6.7.11	The air supply and distribution systems shall be arranged such that any single type failure can be readily isolated from OCC such that full performance capabilities are maintained.	air braking system is vital to safe operation. therefore it's not recommended that all the failure are isolated from OCC.Therefore we suggest to change the any single type failure to Major failure.	Tender condition prevails.	N
102	ITAAAnnexure_I_II_III_IV_V : Section 12 –Pneumatic and Brake Equipment	12.6.8.5	1 Wheel slide protection shall be available during emergency braking (except when the command is initiated by the Operator's Emergency Pushbutton available on the <b>Operator Emergency Driver desk or by RSC consoles of OCC, BCC &amp; DCCs in case of UTO mode of operation</b> ).	we suggest that wheel slide protection shall be provided to all the emergency braking situations for the protection of wheel.	Tender condition prevails.	N
103	ITAAAnnexure_I_II_III_IV_V : Section 12 – Pneumatic and Brake Equipment	12.9	The following information shall be displayed by analog pressure gauges in Emergency Operator's desk. c) The pressure in brake piped d)The pressure in the Main pipe.	We suggest to delete clause c) and d)	Tender condition prevails.	N
104	ITAAAnnexure_I_II_III_IV_V : Section - 12 Pneumatic and Brake Equipment	12.9 PRESSURE GAUGES	The following pressure information shall be shared to TCMS and the same shall be displayed in RSC consoles of OCC, DCC & BCC. a) The pressure in all suspension reservoirs b) The pressure in all reservoirs of train c) The pressure in all brake cylindersd) The pressure in all parking brake units e) The pressure in pantograph regulator f) The pressure in all Vacuum Circuit breakers g) The pressure of Air Generation unit at different stages	"Vacuum Circuit breaker" is not a pneumatic connection equipment, there is no pressure to be displayed. It is suggested to delete it.	Tender condition prevails.	N
105	ITAAAnnexure_I_II_III_IV_V : Section 12 – Pneumatic and Brake Equipment	12.13.4	12.13.4 Provision shall be available to activate all the above isolating valves and switches to isolate the defective equipment from TCMS and remotely isolate from OCC (CDRL 12-7)	we suggest to modify as follows: Provision shall be available to activate all the above isolating valves and switches and the status of the above isolating valves and switches can be monitored from TCMS and OCC.	Tender condition prevails.	N
106	ITAAAnnexure_I_II_III_IV_V : Section - 13 Communications	13.7.1 Passenger Information Displays 13.7	13.7.1.7 The character font and size of the messages shall be designed for proper readability for all passengers inside the train.	The Pssengers inside could not see outside message . we suggest to modify as follows: the character font and size of inside messages shall be designed for proprt readability for all passengers inside the train.	Tender condition prevails.	N
107	ITAAAnnexure_I_II_III_IV_V : Section - 13 Communications	13.7.1.16 Displays for advertisement Purpose	13.7.1.16.1 6 no's of LCD with LED backlit displays or any latest better technology displays of size not less than 13 inch x 19 inch shall be provided inside each coach at an appropriate location. The display location and specification shall be submitted for CMRL approval.	As for 13 inch x 19 inch, does it refer to the equipment size or the display area? does the screen ratio is 4:3? or can it be changed to 16:9?	Tender condition prevails.	N
108	ITAAAnnexure_I_II_III_IV_V : Section 14-TRAIN CONTROL MANAGEMENT SYSTEM	14.11.1	14.11.1 s) Battery power supply interruption shall not cause loss of information of RTR-DMS system.	We suggest to delete this clause.	Tender condition prevails.	N
109	ITAAAnnexure_I_II_III_IV_V : Section 17. TEST PROGRAM	17.5.2.10.5	All bogie frames, and other primary structural members, shall be qualified by radiographic inspection of all critical welds.	All bogie frames, and other primary structural members, shall be qualified by nondestructive test inspection of all critical welds	Tender condition prevails.	N

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
110	ITAAAnnexure_I_II_III_IV_V : Section 17. TEST PROGRAM	17.5.2.10.6	A fatigue test shall be performed to verify the design will meet the requirements defined in ERTS clause 11.6.3. The proposed test arrangement and table of loads and cycle frequency shall be submitted to CMRL for review and approval. The test shall be run for a suitable number of cycles of fatigue load test which ensures a 35 year service life as per the JIS standards and the results shall be submitted to CMRL. Damage equivalence of 10,000,000 cycles must be demonstrated by the results of this test .	A fatigue test shall be performed to verify the design will meet the requirements defined in ERTS clause 11.6.3. The proposed test arrangement and table of loads and cycle frequency shall be submitted to CMRL for review and approval. The test shall be run for a suitable number of cycles of fatigue load test which ensures a 35 year service life as per the JIS or UIC standards and the results shall be submitted to CMRL. Damage equivalence of 10,000,000 cycles must be demonstrated by the results of this test	Tender condition prevails.	N
111	ITAAAnnexure_I_II_III_IV_V : Section 17. TEST PROGRAM	17.5.2.10.9	Additionally, with one wheel raised and lowered 51mm with respect to the plane formed by the other three wheels, the neutral wheel load of the other three wheels shall not change by more than 50 percent.	Additionally, with one wheel raised and lowered 51mm with respect to the plane formed by the other three wheels, the neutral wheel load of the other three wheels shall not change by more than 60 percent.	Tender condition prevails.	N
112	ITAAAnnexure_I_II_III_IV_V : Section 17. TEST PROGRAM	17.5.2.11	The bogies rotational resistance (X factor) test under inflated and deflated air spring conditions would be carried out at the manufacturer's works under tare conditions, the value of which should not exceed 0.08 at rotational speed of 0.8 degrees/second. The rotational resistance shall neither cause excessive flange wear nor cause any possibility of flange climbing but shall be adequate to avoid bogie hunting on straight track. The Contractor shall show by analysis that no flange climbing occurs on any curve and moving at all possible speeds. Bogie rotational resistance test procedure along with test results in report format shall be submitted to CMRL	The bogies rotational resistance (X factor) test under inflated and deflated air spring conditions would be carried out at the manufacturer's works under tare conditions, the value of which should not exceed 0.1 at rotational speed of 1 degrees/second. The rotational resistance shall neither cause excessive flange wear nor cause any possibility of flange climbing but shall be adequate to avoid bogie hunting on straight track. The Contractor shall show by analysis that no flange climbing occurs on any curve and moving at all possible speeds. Bogie rotational resistance test procedure along with test results in report format shall be submitted to CMRL	Tender condition prevails.	N
113	ITAAAnnexure_I_II_III_IV_V	17.5.4.2	17.5.4.2 Air Leakage Test All cars of the first rake shall be tested for the ability to maintain positive internal pressurization. For this test, the car shall be pressurized to at least 0.001 bar Ventilation openings shall be sealed during this test. Air leaks detected with the help of escaping smoke from a smoke bomb shall be closed by the car builder on this and all other cars.	Please confirm that air leakage test for all the cars?	Tender condition prevails.	N
114	ITAAAnnexure_I_II_III_IV_V	17.6.13	The Contractor shall subject each car to a complete test for water tightness. Water tightness shall be conducted on Car Body including all exterior appointments or car body seams that may affect water tightness of the car body—such as destination signs, indication lights, crew switches, Doors, VAC, windows, front & rear end cabins and all equipment —shall be installed at the time of this test. Water droplets shall not enter into the coach during conduction of test as per the following specifications:a. Prior to the car body water test, the door shall be adjusted and tested to verify that they meet the requirements of ERTS section 6. b. All spray applications shall run for ten minutes before the inspection for leaks begins and shall run continuously during the inspection. c. The flow of the water during the test shall be not less than 2.46 liters per minute delivered to each 3.05 x 3.05 m of surface being tested, and the nozzle velocity of the water shall not be less than 45.72 m per second.	Please confirm the time length of water sprary continuously during the inspection.	Tender condition prevails.	N
115	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.5.4.2	The Contractor shall coordinate the format for all safety analyses with CMRL to enable a seamless integration of the passenger car safety analyses into CMRL's system-wide safety effort.	CRRC propose CMRL give the format for all safety analysis in ERTS, because any formate change during project implement will increase the design cost.	Tender condition prevails.	N
116	ITAAAnnexure_I_II_III_IV_V :	17.7.2	17.7.2 Weighing The Contractor shall weigh each car at the time of shipment. The weight at each bogie of the car shall be provided separately. A permanent record of the weight which shall be submitted to CMRL. Copies shall be included in the Car History Book. The weighing device shall be maintained within an accuracy of ±0.2 percent. The Contractor shall submit written verification that the weighing device was calibrated within two weeks prior to the first weighing, and has been calibrated at least once each year over the life of this Contract.	1. we suggest to change the accuracy of ±0.2 percent to ±0.5 percent 2. the calibration for weighing device will be done at least once each year, but the two weeks time requirement is hard to meet because it ususally done at a rugular time.	Tender condition prevails.	N
117	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.5.4.3 Preliminary Hazard Analyses	f) (vii) Dynamic regenerative brakes are completely non-functional (ix) Propulsion is not removed when requested	those two case are not meet the standard of Category I or II described in 18.5.2.1 & 18.5.2.2, suggest delete	Tender condition prevails.	N

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
118	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.5.4.7 Fault-Tree Analyses	The Contractor shall perform a Fault-Tree Analyses (FTAs) that quantify the probability of each Category I and II hazard identified in the PHAs. The FTAs shall consider all interfacing items that, in conjunction with the analyzed system, could lead to the occurrence of the identified hazard. FTA shall comply with IEC 61025.	The Contractor shall perform a Fault-Tree Analyses (FTAs) that quantify the probability of undesired events whose severity are Category I and II hazard identified in the PHAs. The Contractor shall develop a FTA Top Events List for approve by CMRL.	Tender condition prevails.	N
119	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.6.3.1	The reliability estimate shall be for the entire train level and for each major system (excluding CMRL-furnished equipment) down to at least the LLRU. Estimates shall be given by failure type and shall be expressed in terms of mean distance between failures (MDBF).	The reliability estimate shall be for the entire train level and for each major system (excluding CMRL-furnished equipment) down to at least the LRU. Estimates shall be given by failure type and shall be expressed in terms of mean distance between failures (MDBF).	Tender condition prevails.	N
120	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.6.5.3	The reliability figure reported for failure type 1 as defined in ERTS 18.6.4 shall be the total sum distance traveled by all revenue operational trains in Km (Considering the sum of each operational train mileage) during a given time period, divided by the total number of type 1 failures that occurred during the same time period for the same set of revenue operational trains.	please clarify start time of the given time period for Level 1 and Level 2 period.	Tender condition prevails.	N
121	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.7.5.3 Component Change-Out Requirements	Gear Transmission (each) Maximum Person Hours 6.00	Gear Transmission change- out need separate the axle from the bogie and special tool, the downtime will far more than 6 hours. Change-out whole bogie is suggested instead of change-out gear transmission.	Tender condition prevails.	N
122	ITAAAnnexure_I_II_III_IV_V : Section 18 – SYSTEMS ASSURANCE	18.7.6.2	The restoration shall not require more than two service personnel.	Some restorations require more than two service personnel, for example, person for door mechanism restoration is more than two.	Tender condition prevails.	N
123	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.7.3	High strength castings shall be tested, inspected, and accepted in accordance with AAR requirements. High strength castings, and Low alloy nickel castings, shall comply with, and be tested, inspected, and accepted in accordance with AAR M-201.	High strength castings shall be tested, inspected, and accepted in accordance with EN or ISO standards requirements. High strength castings, and Low alloy nickel castings, shall comply with, and be tested, inspected, and accepted in accordance with EN or ISO standards.	Tender condition prevails.	N
124	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.7.4	General-purpose steel castings shall comply with ASTM A27, either Grade 65-35 or Grade 70-36.	General-purpose steel castings shall comply with EN or ISO standards requirements.	Tender condition prevails.	N
125	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.7.5	Low alloy nickel castings shall comply with AAR requirements.	Low alloy nickel castings shall comply with EN or ISO standards requirements.	Tender condition prevails.	N
126	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.9.1	Structural heat-treated alloy steel suitable for welding may be used for sub-structures not exposed to atmospheric corrosion. Heat treated alloy steel used for structural purposes shall comply with ASTM A514, Grade F. The use of all alloys is subject to CMRL approval.	Structural heat-treated alloy steel suitable for welding may be used for sub-structures not exposed to atmospheric corrosion. Heat treated alloy steel used for structural purposes shall comply with EN or ISO standards requirements. The use of all alloys is subject to CMRL approval.	Tender condition prevails.	N
127	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.9.3	Structures of heat treated alloy steel shall be so designed that the principle stresses to which any part is subjected shall not exceed the following percentages of yield strength of the material used, under full dynamic conditions with a maximum load.	we suggest to delete this clause.	Tender condition prevails.	N
128	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.19.5	Dimensions of elastomers shall comply with ASTM D1055.	Dimensions of elastomers shall comply with EN standards ,ISO standards or ASTM D1055 .	Tender condition prevails.	N
129	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.25.1.2	All fasteners shall be stainless steel, dichromate, or zinc-plated steel, depending on the specific application. Zinc plating on steel fasteners shall conform to ASTM B 633 Type II – yellow, or equivalent standard, for non-exposed fasteners.	All fasteners shall be carbon steel ,alloy steel, stainless steel, dichromate, or zinc-plated steel, depending on the specific application. Zinc plating on steel fasteners shall conform to ASTM B 633 Type II – yellow, or equivalent standard, for non-exposed fasteners.	Tender condition prevails.	N
130	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.25.1.5	All threaded fasteners shall comply with ANSI B1.1 class 2 requirements, unless otherwise specified or approved.	All threaded fasteners shall comply with EN standards ,ISO standards or ANSI B1.1 class 2 requirements, unless otherwise specified or approved.	Tender condition prevails.	N

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131	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.25.1.8	All exposed bolts and nuts shall be stainless steel, unless otherwise specified.	All exposed bolts and nuts shall be stainless steel ,carbon steel or alloy steel , unless otherwise specified.	Tender condition prevails.	N
132	ITAAAnnexure_I_II_III_IV_V : Section 19- Materials and Workmanship	19.25.4.2	Carbon steel bolts shall comply with ASTM A325. Alloy steel bolts shall comply with ASTM A354 or ASTM A490, as applicable.	Carbon steel bolts shall comply with EN standards ,ISO standards or ASTM A325 requirements. Alloy steel bolts shall comply with EN standards ,ISO standards, ASTM A354 or ASTM A490 , as applicable.	Tender condition prevails.	N
133	ITAAAnnexure_I_II_III_IV_V :	19.29.1.2	19.29.1.2 All welding practice not specifically covered in this section shall be in accordance with the applicable requirements and recommendations of EN-3834-2 or the American Welding Society (AWS), as contained in the latest revisions of the "Structural Welding Code" (AWS D1.1), "Aluminum Welding Code" (AWS D1.2), "Structural Welding Code -Sheet Steel" (AWS D1.3), "Recommended Practices for Resistance Welding" (AWSC1.1), "Railroad Welding Specification" (AWS D15.1) and the AWS "Welding Handbook" (AWS WHB). Where non-AWS welding is proposed, the supplier shall demonstrate equivalence. [CDRL 19-20]	we suggest to add ISO 3834-2 and EN15085 as an option.	Tender condition prevails.	N
134	ITAAAnnexure_I_II_III_IV_V :	19.29.1.3	19.29.1.3 Prior to welding, all surfaces shall be thoroughly cleaned to remove corrosion, rust, scale, slag, grease, oil, water, paint, and other foreign materials in accordance with applicable parts of MIL-HDBK-132, "Protective Finishes", Section 2.	Please provide MIL-HDBK-132, protective finishes, section 2.	Tender condition prevails.	N
135	ITAAAnnexure_I_II_III_IV_V :	19.29.1.10	19.29.1.10 Contractor shall comply with the requirements of "Design of Welded Connections", and "Fabrication" sections of the applicable AWS Structural Welding Codes D1.1, D1.2, D1.3, and D1.6. If the Contractor cannot comply or takes exceptions, the Contractor is to provide a list of exceptions to these Codes to CMRL for review and approval.	Please add ISO3834-2 and EN15085 as an option.	Tender condition prevails.	N
136	ITAAAnnexure_I_II_III_IV_V :	19.29.1.11	19.29.1.11 Welding symbols shall be those shown in the latest edition of AWS A2.4, Symbols for Welding, Brazing, and Nondestructive Examination. Special conditions shall be fully explained by added notes or details. Other European or International Standards may be used upon approval by CMRL.	Please add ISO2553 as an option.	Tender condition prevails.	N
137	ITAAAnnexure_I_II_III_IV_V :	19.29.2.2	19.29.2.2 Welder qualification tests and welder range of qualifications shall be in accordance with the applicable AWS Structural Welding Code (D1.1, D1.2, D1.3, and D1.6) or EN 287-1. Other European or International Standards may be used if the Contractor demonstrates equivalency of these standards to the AWS Structural Welding Codes. Welder qualification tests shall be performed in accordance with the applicable requirements of AWS standards, or other approved equivalent standards.	Please add ISO9606-1 as an option.	Tender condition prevails.	N
138	ITAAAnnexure_I_II_III_IV_V : Section 19 - Materials and Workmanship	19. MATERIALS AND WORKMANSHIP	19.32.5.12 All piping shall be securely fastened with zinc-chromate-impregnated core tape, or an approved equivalent, between the pipe and clamp to prevent chafing and vibration. Clamps shall not be welded, brazed or otherwise permanently fastened to any pipe or tubing.	It is suggested to cancel this clause.After the pipe clamp is installed, there is enough friction to prevent pipe wear and vibration. There is no need to add fasteners such as adhesive tape. And it is convenient for disassembly and maintenance without core tape.	Tender condition prevails.	N
139	ITAAAnnexure_I_II_III_IV_V :	19.29.3.1	19.29.3.1 All welding practices, Procedure Qualification Record (PQR) and Welding Procedures Specifications (WPS) not specifically covered in other sections shall comply with AWS-D1.1, AWS-D1.2, or AWS-D1.3 or AWS D1.6 and the AWS Handbook as appropriate. Other European or International Standards such as ISO 3834-2 may be used if the Contractor demonstrates equivalency of these standards to the AWS Structural Welding Codes.	Please add ISO3834-2、 EN15085 、 ISO3834-2 and EN15085 as an option.	Tender condition prevails.	N
140	ITAAAnnexure_I_II_III_IV_V :	19.29.3.2	19.29.3.2 Weld joint configuration and fit-up tolerances shall comply with the requirements AWS D1.1, D1.2, D1.3, and D1.6, as applicable. Weld joint configurations not comply with these requirements must be tested in accordance with the applicable AWS welding code. Other European or International Standards may be used if the Contractor demonstrates equivalency of these standards to AWS.	Please add ISO13920 as an option	Tender condition prevails.	N
141	ITAAAnnexure_I_II_III_IV_V :	19.29.4.1	19.29.4.1 The choice of welding rod or wire filler metal shall be made with consideration of the make, type, size, composition, and suitability to the application and shall be in accordance with Chapter 94 of the AWS Welding Handbook.	Please add ISO15614 as an option.	Tender condition prevails.	N

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142	ITAAAnnexure_I_II_III_IV_V :	19.29.5	19.29.5 Weld Repairs shall be performed in accordance with approved procedures that comply with AWS D1.1.	Weld repairs Please add EN15085 and ISO 3834 as an option.	Tender condition prevails.	N
143	ITAAAnnexure_I_II_III_IV_V :	19.29.6.3	19.29.6.3 Welding inspection procedures and welding inspector qualifications tests shall be in accordance with AWS D1.1 and the applicable requirements of the AWS Welding and Brazing Handbook. The Contractor shall use and demonstrate the use of personnel qualified to perform weld inspection. An AWS Certified Welding Inspector (CWI) shall be utilized for inspection or oversight of welding inspection .Non- destructive examination procedures and qualifications of nondestructive testing personnel shall be in accordance with the applicable requirements of the AWS Structural Welding Codes, and American Society for Nondestructive testing Recommended Practice No. SNT-TC-1A. Other European or International Standards may be used if the Contractor demonstrates equivalency of these standards.	please add ISO9712 Qualifications as an option	Tender condition prevails.	N
144	ITAAAnnexure_I_II_III_IV_V : Section - 19 Materials and Workmanship	19. MATERIALS AND WORKMANSHIP	19.32.7.4 Automatic Drain cocks along with manual operation shall be provided at the low points of all reservoirs.	It is recommended to change the automatic drain valve to manual drain valve to keep consistent with the description of manual operation.	Tender condition prevails.	N
145	ITAAAnnexure_I_II_III_IV_V :	19.30.2	19.30.2 All brazing, qualification of brazers, and repair of brazing defects shall be in accordance with the requirements and recommendations specified in the AWS Welding and Brazing Handbook.	Please add ISO 9712 or EN standards as an option.	Tender condition prevails.	N
146	ITAAAnnexure_I_II_III_IV_V :	19.31.1	19.31.1 Soldering of electronic equipment shall comply with the requirements of MIL-STD- 454 or equivalent 19.31.2 Soldering of mechanical equipment shall comply with the requirements of DOD-STD- 1866 or equivalent	Please provide MIL-STD-454 and DOD-STD-1866 and add ISOI or EN standards as an option.	Tender condition prevails.	N
147	ITAAAnnexure_I_II_III_IV_V :	19.32.5.3	19.32.5.3 Piping and tubing shall be adequately supported at least every 610 mm throughout its length and at connections, and must not interfere with the removal of or access to other components.19.32.5.4 A minimum clearance of 3.175 mm shall be maintained between all piping and tubing used in the car.	In actual production, there should be no intervention for the clearance after installation.	Tender condition prevails.	N
148	ITAAAnnexure_I_II_III_IV_V :	19.35.1	19.35.1 Wire sizes, insulation requirements, materials, shielding methods, and identification of wire and cable used for primary, auxiliary, control, and communications applications shall be based on the current carrying capacity, voltage drop, mechanical strength, temperature, and flexibility requirements of AAR, ASTM, ICEA, NFPA, MIL, or NFPA 70 specifications.	Please add ISO or EN specifications as an option.	Tender condition prevails.	N
149	ITAAAnnexure_I_II_III_IV_V :	19.36.6&19.36.7	19.36.6 Minimum 4 mm <sup>2</sup> Cross sectional area of conductor shall be used for wire pulled through conduits. Any changes in minimum wire size will be considered during design review.19.36.7 Wire for control and auxiliary circuits shall not be smaller than 4 mm <sup>2</sup> Cross sectional area of conductor 4 mm <sup>2</sup> Cross sectional area of conductor except for high temperature, public address, and intercom applications. . Any changes in minimum wire size will be considered during design review.	The Minimum cross sectional area of conductor of us for control circuit and auxiliary circuit wire is 1mm <sup>2</sup> and are able to satisfy the functional requirement.the protection is carried out by conduit and wire duct in wiring.	Tender condition prevails.	N
150	ITAAAnnexure_I_II_III_IV_V :	19.45.1	19.45.1 Wiring of 10mm <sup>2</sup> or smaller shall be run in insulated metal raceways and wire ducts with securely fastened but easily removable metal covers.	Please add nylon flexible raceways and wire ducts as an option.	Tender condition prevails.	N
151	ITAAAnnexure_I_II_III_IV_V :	19.46.5	19.46.5 Conduits that contain three or more conductors shall be sized such that the sum of the cross-sectional area of the wires and cables does not exceed 40 percent of the cross sectional area of the conduit. For two conductors, a limit of 30 percent shall be used. For a single conductor, a limit of 53 percent shall be permitted.	The proportion of cross-sectional area of the wires and cables for the cross sectional area of the conduit is a bit lower. For the proportion specified in EN50353-2014 ,the proportion of wires and cables area will not exceed 60% percent of conduit area, while the cables or bracket area will not exceed 80% of conduit area.	Tender condition prevails.	N
152	ITAAAnnexure_I_II_III_IV_V :	19.7.2	19.7.2 Weld repairs of castings shall be allowed, provided that repairs are performed in accordance with an approved written procedure, and by welders qualified to ASTM A488.	We suggest to add ISO9606 qualification as an option.	Tender condition prevails.	N

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153	ITAAAnnexure_I_II_III_IV_V : Appendices Appendix 'I' – TRAIN WITHDRAWAL SCENARIOS FOR 3 CAR TRAINS	APPENDIX – I Train withdrawal Scenarios	17 Emergency operator's desk -Any defect in master controller or any operator's desk controls even if no delays are reported.	Suggest to modify as follows:Emergency operator's desk -Any defect in master controller or any operator's desk controls leading delays are reported.The design of the control equipment of the emergency operator's desk takes into account the necessary redundancy, and some equipment failures do not affect the operation of the train, and should not be included in the reliability assessment of the train.	Tender condition prevails.	N
154	ITAAAnnexure_I_II_III_IV_V : Appendices Appendix 'I' – TRAIN WITHDRAWAL SCENARIOS FOR 3 CAR TRAINS	APPENDIX – I Train withdrawal Scenarios	19 PA, PIS & CCTV -If 50% announcements in saloon are not audible	19 PA, PIS & CCTV If more than 50% announcements in saloon are not audible.	Tender condition prevails.	N
155	Instructions To Applicants	Clause 1.2.2, Page ITA-5	Rolling Stock Supply ....The Lessee at his discretion may advise the Lessor in writing about increased requirement of Rolling Stock for operation on Phase II. For any increase in quantity, Lessee may exercise the option on any date within five years of the scheduled induction of last trainset on revenue service....	We understand the provision for requirement of increase in quantity of rolling stock cars. With reference to this , we request you to kindly indicate the quantity increase option cars.	Additional trains is not required in PPP model. This sentence shall be deleted. Please refer to Addendum (01)	Y
156	Instructions To Applicants	Clause 1.2.1, Page ITA-4	General Information The proposed model envisages to seek offers from applicants for availability of committed number of trains for operating the same on Phase II network of CMRL for the contract period. The criteria for availability of trains shall be detailed in the RFP document...	We understand that no. of trains required for maintenance reserves is included in total requirement of 42 trains. In this regard, we request you to kindly define daily trains requirement for the whole lease period.	5% is considered for Traffic spare & 10% is considered for Maintenance spare.	N
157	Instructions To Applicants	1.3.1 Initial Eligibility Criteria: Eligibility of Applicants – Checklist, Page ITA-10	Eligibility of Applicants – Checklist	We undertand that Applicant has to qualify for all checklists including S.No. 5 for FI's; Sl. No. 6, 7 & 8 for RSM; and Sl. No. 9 for manufacturer of Propulsion Equipment. Therefore, decision for joint participation of FI, RSM and MPE has to be taken at this satge only.  Since, this stage is only a qualification stage, therefore, we request you to please qualify FI's and RSM's independantly at this stage. During RFP stage only qualified FI and RSM will discuss with each other and final consortium will be formed to bid at RFP Stage.	Please refer to Addendum (01)	Y
158	Instructions To Applicants	Introduction Clause 1.5, Page ITA-13	Payments to the Lessor The payment terms shall be detailed in the RFP Document and shall be based on train revenue service hours(hourly running of trains). Payment of lease charges shall be fixed and on quarterly basis subject to the terms in RFP. CMRL shall pay minimum guaranteed demand. Details of Minimum guaranteed demand shall also be included in the RFP document.	We understand that funding and payment will be detailed in RFP. However, we request you to kindly include followings at EOI stage:- 1.Project Funding Source 2.Confirmation on availability of Sovereign guarantee. 3.Escrow Account Mechanism shall be defined for payment. 4.Provision for interest free Mobilization advance. Indexing: Payments should be linked to suitable indices to compensate for inflation	CMRL : 1.Shall be defined in RFP document. 2.Sovereign : from TN Govt.Refer Addendum (01) 3.Not reqre. 4. Not applicable. Indexing shall be included in the Applicant's proposal.	Y
159	Instructions To Applicants	Preparation of EOI Clause 3.1.7, Page ITA-17	Financing structure In order to have a sustainable and technically & financially sound proposal, the financial structure of the Applicant (JV/Consortium/SPV) shall be as follows: ·Equity: Minimum 30% Debt: Maximum 70%	We request you to please clarify the period for which the proposed financing structure has to be mentained.  Exit option along with applicable terms and conditions shall be defined after certain lock-in period.	Shall be Defined in RFP.	N
160	Instructions To Applicants	Preparation of EOI Clause 3.1.9, Page ITA-13	Currencies of EOI and Payment: The Applicant shall quote their price in INR only. Payment also will be made in INR as per the RFP conditions and Schedule of Payments.	We request you to kindly consider lease payment in foreign currency also as many supplies and services will be dependent on Foreign OEM's.	Tender Condition Prevails.	N
161	General			1.We request you to kindly define bid evaluation mechanism based on NPV to be adopted during RFP Stage. 2. We request you to kindly define the estimated NPV, to set the expectations and avoid discharge of tender due to gap in offered price vs estimated NPV.	1.Will be defined RFP document. 2.Will be defined in RFP.	N

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162	Key Details	Corrigendum 02 & 03	Last date and time of submission/uploading of EOIs: 21st September 2021 till 13:00 hrs.	Due to COVID-19 situation, timely compilation of all the required documentations and details for EOI is getting affected. Apart from this, submission of several other big RS tenders are already scheduled in this quarter.  In view of above situation, please extend the bid submission date by at least by 8 weeks time from current deadline for submission of Bids.	Refer corrigendum (02) and 03	N
163	Instructions To Applicants	1.1	N.A.	Please define the term "Associate" or "Affiliate" as below:  "Associate" or "Affiliate" means, a person who controls, is controlled by, or is under the common control with such party. As used in this definition, the expression "control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law or contract.	Tender Condition Prevails	N
164	Instructions To Applicants	1.1 (vii)	"Lessor" means the applicant whose proposal has been finally accepted by the Lessee and the legal successors in title to such person, but not (except with the consent of the Lessee) any assignee of such person.	"Lessor" means the applicant, or an entity incorporated by the applicant, whose proposal has been finally accepted by the Lessee and the legal successors in title to such person, but not (except with the consent of the Lessee) any assignee of such person.	Tender Condition Prevails	N
165	Instructions To Applicants	1.1	N.A.	Please define the term "Net Worth" as below:  "Net Worth" shall mean the aggregate value of the paid-up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write back of depreciation and amalgamation.	Please refer Addendum (01)	Y
166	Instructions To Applicants	1.3 Para 2	The eligible applicants shall be allowed to submit the bids through its associates as eligible bidders. This shall be allowed with minimum participation of the associates.	The eligible applicants shall be allowed to submit the bids through its associates as eligible bidders.	Please refer Addendum (01)	Y
167	Instructions To Applicants	1.3.1 Initial Eligibility Criteria: S. No. 5	Net worth, as on 30 (thirty) days before the EOI submission date or at the close of preceding financial year (as applicable in the country of origin), should be at least INR 4,170 million.  OR  Value of Assets Under Management ("AUM"), as on 30 (thirty) days before the EOI submission date or at the close of preceding financial year (as applicable in the country of origin), should be at least INR 1,47,500 million.  OR  Value of capital commitments towards equity available to the fund registered under the designated regulatory body for the finance and investment markets or Stock Exchange, should be at least INR 59,340 million as on 30 (thirty) days before the EOI submission date or at the close of preceding financial year (as applicable in the country of origin), for execution of this project."  Has the applicant provided the documents in compliant with the above conditions duly certified by a CA/CPA/Statutory Auditor?	Net worth, as on 30 (thirty) days before the EOI submission date or at the close of preceding financial year (as applicable in the country of origin), should be at least INR 4,170 million.  OR  Value of Assets Under Management ("AUM"), as on 30 (thirty) days before the EOI submission date or at the close of preceding financial year (as applicable in the country of origin), should be at least INR 1,47,500 million.  OR  Value of capital commitments towards equity available to the fund registered under the designated regulatory body for the finance and investment markets or Stock Exchange, should be at least INR 59,340 million as on 30 (thirty) days before the EOI submission date or at the close of preceding financial year (as applicable in the country of origin), for execution of this project. In computing the Net Worth or AUM of the applicant, the Net Worth or AUM of their respective Associates would also be considered."  Has the applicant provided the documents in compliant with the above conditions duly certified by a CA/CPA/Statutory Auditor?	Please refer Addendum (01)	Y
168	Instructions To Applicants	1.3.1 Initial Eligibility Criteria: Note to S. No. 6	For (B1) and (B2) the applicants should either have design experience or procure/subcontract design from experienced designer or form a JV with a company having design experience. The credential to this effect should be submitted with the EOI.	For (B1) and (B2) the applicants should either have design experience or procure/subcontract design from experienced designer or form a JV with a company having design experience. The applicants will be required to demonstrate this experience at the RFP stage.	Refer Addendum (01)	Y



Pre-EOI Meeting -Response to Bidders Queries						
Sl no	Part/Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
169	Instructions To Applicants	1.3.1 Initial Eligibility Criteria: S. No. 7	<p>Delivery Record for Rolling Stock</p> <p>Has the Applicant/Consortium/JV or its member(s), individually or jointly as a member of other Consortia/JV have experience of and carried out Vehicle Design, Interface, Assembly &amp; Supply, Testing and Commissioning of minimum of total 63 metro cars in the last ten (10) years: EITHER in at least one (1) country other than the country of origin. OR in INDIA</p>	<p>Delivery Record for Rolling Stock</p> <p>Has the Applicant/Consortium/JV or its member(s), or its sub-contractors, individually or jointly as a member of other Consortia/JV have experience of and carried out Vehicle Design, Interface, Assembly &amp; Supply, Testing and Commissioning of minimum of total 63 metro cars in the last ten (10) years: EITHER in at least one (1) country other than the country of origin. OR in INDIA. The applicants will be required to demonstrate this experience at the RFP stage.</p>	Refer Addendum (01)	Y
170	Instructions To Applicants	1.3.1 Initial Eligibility Criteria: S. No. 8	<p>Operation performance for Rolling Stock:</p> <p>Out of S. No. '7' above, have minimum of total 32 metro cars completed satisfactory revenue operation for more than three (3) years: EITHER in at least one (1) country other than the country of origin. OR in INDIA</p>	<p>Operation performance for Rolling Stock:</p> <p>Out of S. No. '7' above, have minimum of total 32 metro cars completed satisfactory revenue operation for more than three (3) years: EITHER in at least one (1) country other than the country of origin. OR in INDIA The applicants will be required to demonstrate this experience at the RFP stage.</p>	Refer Addendum (01)	Y
171	Instructions To Applicants	1.3.1 Initial Eligibility Criteria: S. No. 9	<p>Propulsion system</p> <p>The designer of Traction converter-inverter shall be considered as the integrator of the Propulsion system and shall individually have experience of minimum ten (10) years in the Design and Manufacturing of Traction converter-inverter for Metro rolling stock AND the system supplied have been in satisfactory revenue operation for at least four (4) years in minimum aggregate 300 cars comprising of both powered and nonpowered cars, supplied against minimum three (3) different contracts in the Metros (i.e. MRT, Metro-lite, LRT, LRV, Tramway, Suburban Railways, EMU or high speed railways). Integrator of the propulsion system shall have the entire responsibility for any warranty obligations and design modifications of propulsion system during the contract period for which it should have adequate past experience. Besides, other suppliers must qualify for respective scope of work against the eligibility criteria as per the eligibility conditions mentioned in the respective tenders of the metros</p> <p>Or</p> <p>Manufacturer of the Propulsion Equipment (Traction Converter-Inverter, Auxiliary Converter-Inverter and Traction Motor) proposed by the Applicant as a sub-contractor for supply of the Propulsion Equipment against this EOI, shall have minimum ten (10) years experience in the field of Design and Manufacturing of the Propulsion Equipment AND do the Propulsion Equipment Designed, Manufactured and Supplied by the said manufacturer have been in satisfactory revenue operation for at least four (4) years in minimum aggregate 300 cars comprising of both powered and non-powered cars, supplied against minimum three (3) different contracts in the Metros (i.e. MRT, Metrolite, LRT, LRV, Tramway, Sub-urban Railways, EMU or high speed railways).</p>	<p>Propulsion system</p> <p>The designer of Traction converter-inverter shall be considered as the integrator of the Propulsion system and shall individually have experience of minimum ten (10) years in the Design and Manufacturing of Traction converter-inverter for Metro rolling stock AND the system supplied have been in satisfactory revenue operation for at least four (4) years in minimum aggregate 300 cars comprising of both powered and nonpowered cars, supplied against minimum three (3) different contracts in the Metros (i.e. MRT, Metro-lite, LRT, LRV, Tramway, Suburban Railways, EMU or high speed railways). Integrator of the propulsion system shall have the entire responsibility for any warranty obligations and design modifications of propulsion system during the contract period for which it should have adequate past experience. Besides, other suppliers must qualify for respective scope of work against the eligibility criteria as per the eligibility conditions mentioned in the respective tenders of the metros</p> <p>Or</p> <p>Manufacturer of the Propulsion Equipment (Traction Converter-Inverter, Auxiliary Converter-Inverter and Traction Motor) proposed by the Applicant as a sub-contractor for supply of the Propulsion Equipment against this EOI, shall have minimum ten (10) years experience in the field of Design and Manufacturing of the Propulsion Equipment AND do the Propulsion Equipment Designed, Manufactured and Supplied by the said manufacturer have been in satisfactory revenue operation for at least four (4) years in minimum aggregate 300 cars comprising of both powered and non-powered cars, supplied against minimum three (3) different contracts in the Metros (i.e. MRT, Metrolite, LRT, LRV, Tramway, Sub-urban Railways, EMU or high speed railways).</p> <p>The applicants will be required to demonstrate this experience at the RFP stage.</p>	Refer Addendum (01)	Y
172	Instructions To Applicants	Note to Clause 1.3.1 Initial Eligibility Criteria: S. No. 4	<p>In the case of a Joint Venture/Consortium/SPV, each member must qualify individually in the 'Eligibility of Applicants – Check List', except for Criteria at serial number 5 to 9.</p> <p>4.1 The criteria at S. No. 5 is applicable for the member(s) providing finance (hereinafter referred as "Financial Institution" (FI) who shall be a part of the JV/Consortium/SPV).</p> <p>4.2 The criteria at Serial Number 6, 7 &amp; 8 are applicable for Rolling Stock manufacturer (RSM), who shall be a member of the JV/Consortium/SPV or as a Sub-contractor.</p> <p>4.3 S. No. 9 applies only to the manufacturer of the Propulsion Equipment, who can participate either as a member of the Consortium/JV/SPV or a sub-contractor to the Applicant/RSM.</p>	<p>In the case of a Joint Venture/Consortium, each member must qualify individually in the 'Eligibility of Applicants – Check List', except for Criteria at serial number 6 to 9.</p> <p>4.1 To be deleted</p> <p>4.2 The criteria at Serial Number 6, 7 &amp; 8 are applicable for Rolling Stock manufacturer (RSM), who shall be a member of the JV/Consortium/SPV or as a Sub-contractor.</p> <p>4.3 S. No. 9 applies only to the manufacturer of the Propulsion Equipment, who can participate either as a member of the Consortium/JV/SPV or a sub-contractor to the Applicant/RSM.</p>	Refer Addendum (01)	Y

**Pre-EOI Meeting -Response to Bidders Queries**

Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
173	Instructions To Applicants	3.1.4 (vi)	<p>For the participation by Subsidiary company / Parent company with credentials of other company:</p> <p>a) Applicant in the capacity of a Subsidiary as a single entity is not permitted to use the credential of its Parent Company and/or its sister Subsidiary Company/ Companies unless the Applicant participates in EOI as JV/Consortium with its Parent Company and/or its sister Subsidiary Company/Companies as a member(s) in JV with minimum 15% participation each for such member(s).</p> <p>b) Also, Applicant in the capacity of a Parent Company as a single entity is not permitted to use the credential of its Subsidiary Company/ Companies unless the Applicant participates in EOI as JV/Consortium with minimum 15% participation each for such member(s).</p>	To be deleted	Tender Condition Prevails	N
174	Instructions To Applicants	3.1.7 Financing Structure	<p>In order to have a sustainable and technically &amp; financially sound proposal, the financial structure of the Applicant (JV/Consortium/SPV) shall be as follows:</p> <p><input type="checkbox"/>Equity: Minimum 30%</p> <p><input type="checkbox"/>Debt: Maximum 70%</p>	<p>In order to have a sustainable and technically &amp; financially sound proposal, the financial structure of the Applicant (JV/Consortium/SPV) shall be as follows:</p> <p><input type="checkbox"/>Equity: Minimum 30%</p> <p><input type="checkbox"/>Debt: Maximum 70%</p> <p>Equity shall include, with respect to any entity, any monies infused by a promoter of such entity for subscription to ordinary shares or preference shares / debentures which are convertible into ordinary shares.</p>	Tender Condition Prevails	N