

Chennai Metro Rail Limited
Tender Description: Design, Manufacture, Supply, Testing, Commissioning of Standard Gauge Metro Rolling Stock (210 cars) and Training of Personnel
Tender No. CMRL/PHASE II/SYS/CP26/ARE02/2021
Tender ID. 2021_CMMDB_640237_1

Clarifications on Reply to Bidder's queries

Sl. No.	Part/Section No.	Clause No.	Original Bid Condition	Clarification (Aug 2021)	CMRL Response (Nov 2021)	Clarification sought further(ref ITB 7)	CMRL Response
1	Part 1 Section V Eligible Source Countries of Japanese ODA Loans	Eligible Source Countries of Japanese ODA Loans Eligible Nationality	8. With regard to Section A. (4) above, if the major component(s) of goods is(are) substantially manufactured by an Eligible Local Manufacturing Company, such components can be regarded and counted as Japanese origin even if the goods are not procured from Japan. Eligible Local Manufacturing Company(ies). Nor Eligible Developed countries' Manufacturing Company(ies).	We understand that the Bidder can define and propose the "major component(s) of goods" at his discretion. Please confirm.	YES, the bidder can propose the list and submit the FORM SUB, which shall be inline with ERTS requirements & EQC 2.5.	Further to response from CMRL, we understand: (1) the Bidder should define and propose equipment and/or system as the major component(s) from the major items listed in EQC 2.5. (2) The major component(s) can be a core component of the equipment and/or system selected by the Bidder. Please confirm.	1) Bidder can define and propose major components of goods at his discretion. However, bidder shall submit FORM SUB as listed for items in EQC 2.5. 2) No. It should be the system selected by the Bidder.
2	Part 1 Section IV	Bidding Forms Form Goods/Services: Country of Origin of Goods and Services	"Name of the Goods/Services" in the table	Please clarify Bidder to list Price Center A to H in column of the Name of the Goods/Services.	The bidder shall list the Goods & Services in this table. Tender condition prevails.	It is difficult for the Bidder to make the Goods/Services in line with CMRL's response. As clarified Sl. No.5, the Bidder understands applicable Price Centres A to H should be listed in Form Goods/Services. Price Centre F shall be divided to F1 (Services conducted by Japanese Company) & F2 (Others). Please confirm.	Bidder's understanding is acceptable.
3	Part 2 Section VI	ERTS – System Requirements 2.1 2.4.1 2.4.2	2.1 For the purpose of these Specifications, "Proven Design" means the Car, System, Subsystem, Equipment or Components etc. Which shall comply with requirements specified in Section III of Part 1: Evaluation and Qualification Criteria of the contract document. 2.4.1 Car, system and subsystem designs shall be service proven. CMRL will evaluate the applicability of "service proven" according to the risk associated with each particular design. In general, "service proven" shall mean the system, subsystem equipment or components, etc. which shall comply with requirement's specified in Section III of Part 1: Evaluation and Qualification Criteria of the contract document. 2.4.2 To establish a design's service-proven history, the Contractor shall submit as part of the proposal specific details of the application history. The Contractor may offer, for approval, a design which is basically unchanged from a service-proven design, but which must be upgrade in design or manufacture to suit CMRL's requirements or for reliability purposes. The Contractor shall show, in detail, what has been changed in the equipment and why such changes will not adversely affect operation and performance. For proven design, the Contractor shall produce for CMRL's review and approval test documents from the other systems/projects for which the Contractor is providing the proven design application.	(1) We understand requirements of Section III of Part1 :Evaluation and Qualification Criteria are defined for the Employer to evaluate design and manufacturing capability of the Bidder and/or subcontractors. Service Proven requirements in these clauses are limiting the Bidder's Design & Build capability and performance. The Bidder will propose service proven product as much as possible, but please delink the EQC requirements and service proven requirements. (2) Please clarify whether Bidder can propose service-proven design of subcontractor for car body. In this case, Bidder to be system integrator of train set, procure car body from the subcontractor which is service proven in the subcontractor's past project.	(1) Tender Condition Prevails (2) No.	(1) Please delink the EQC requirements and service proven requirements.	1) Tender condition prevails.
4	Part 2 Section VI	ERTS – System Requirements 2.2.26	This Rolling Stock contract is only for JICA Funded project of shall operate in all three corridors of CMRL Phase 2 and there might be a possibility of having multiple Rolling Stock Contractors for all the three corridors of Phase 2 along with its extensions. The Contractor as above shall ensure that all requirements of the Technical Specification and Compatibility between the Rolling Stock is ensured, for the system such as (but not limited to) Traction system, Coupler System, Pneumatic supply extension, Door pitch, etc., are properly satisfied.	The Bidder is not able to guarantee the exact compatibility on each equipment basis. Please clarify and explain details and minimum compatibility requirements for this project.	Clause 2.2.26 is self explanatory, further please refer Part 2 : Section VI Appendix C Sl. No. 14.	We understand compatibility requirement is necessary only for rescue operation purpose. However, the requirement (2.2.26) is too broad to comply with. Please delete this requirement (2.2.26) and add the necessary and specific compatibility requirement in Appendix C Interfaces.	This Rolling Stock contract is only for JICA Funded project. The Rolling Stock shall operate in all three corridors of CMRL Phase 2 and there might be a possibility of having multiple Rolling Stock Contractors for all the three corridors of Phase 2 along with its extensions. The Contractor as above shall ensure that all requirements of this Technical Specification and compatibility between the Rolling Stocks such as for (but not limited to) rescue operation, as per the Appendix C, section 14 is ensured, for the system such as (but not limited to) Traction system, Coupler System, Pneumatic supply extension, Door pitch, etc., are properly satisfied.

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5	Part 1 Section V Eligible Source Countries of Japanese ODA Loans	Eligible Source Countries of Japanese ODA Loans Eligible Nationality	Part 1 Section V art 4. Minimum 90% of the Contract Price (Ref. Part 1 – Section IV – Bidding Forms – Cl. 4.2 – Sl. No. 15) shall be sourced from Japanese manufacturer/Companies for Goods and Services as it is mandatory requirement under this package	Please clarify whether the following Bidder's interpretation is correct. Assuming that a "Japanese Partner" (i.e. Japanese Rolling Stock manufacturing company) is the Design Authority of the full vehicle, the same is allowed to include in "Japanese ratio" calculation and consider as "Japanese goods" not only the "make" components that are directly manufactured but also all "buy" subsystems (e.g. HVAC, Brakes, doors ...) that are outsourced or procured from third parties which can be located either in India or in Japan or in any third country.	Japanese RSM as Design Authority for full vehicle can be treated as Japanese cost. But, Procurement of Sub-systems shall comply clause 5 or 6 or 7 of Section V : ESC.	(1) As far as the Indian company defined in 12(c) of Section V ESC satisfies the requirement of EQC 2.4, we understand the Indian company can be design authority of Rolling Stock for this project. Please confirm. (2) In case of the above Indian company receives (i) major component(s) and (ii) technical cooperation and/or provision of design from the Japanese Rolling Stock manufacturing company as per Addendum No.1, total amount with taxes of Price Centre A, CST, FAI, CPT, C, D, E, G, H, plus part of the total amount with taxes of Price Centre F conducted by the Japanese company can be regarded and counted as Japanese origin("sourced from Japanese manufacturer/companies"). Please confirm. (3) The Bidder can use definition of the above (i) major component(s) based on CMRL's reply for Sl. No.1 in this sheet. Please confirm. (4) The Bidder understands that the above (ii) technical cooperation can be system integration support of part of Rolling Stock system and (ii) provision of design can be provision of part of the concept design of the Rolling Stock at Bidder's discretion. Please confirm. (5) We understand the Japanese Rolling Stock manufacturing company can be either a partner of the prime contractor or the sub-contractor.	1) Yes. 2) Japanese ratio for the captioned package shall be 90% if Japanese Company(ies) substantially manufactures major component(s) and Japanese Rolling Stock Manufacturing Company(ies) substantially engage with final assembly or the final refinement/processing by the Indian Company(ies) the manners including, but not limited to technical cooperation, commissioning of manufacturing or provision of design 3) Yes. 4) No. Technical cooperation shall be for complete Rolling Stock. 5) The Japanese Rolling Stock Manufacturing company must be the prime contractor or member of JV froming the Prime Contractor since they have to deliver technical cooperation of complete Rolling Stock.													
6	Part 2 Section VI	ERTS – System Requirements 2.14.1.4 2.14.1.5	2.14.1.4 The proportion of motored axles per rake shall be in accordance with the requirements of ERTS Section 2.2.11 & 2.2.12. The car-builder is required to meet the minimum requirements of acceleration and deceleration. 2.14.1.5 The Rake shall be capable of sustaining a maximum service speed of 80 kmph with ATP / ATO / UTO on track curves as per the Schedule of Dimension. Maximum equivalent response time taken into account for the calculations is for service and emergency braking shall be compliant with EN 13452-1 The following performance requirements shall be achievable with any degree of wheel wear including rail adhesion level no greater than 20%, any track conditions within the design criteria, any passenger Loading Condition (up to AW4) on level tangent track: (CDRL 2-8)	In clause 2.14.1.4 and 2.14.1.5, both acceleration/declaration and adhesion level are defined. However, based on our study, we believe it is physically impossible to achieve both requirements at the same time. In case tractive effort is designed to achieve required acceleration, adhesion coefficient criteria can not be achieved in cases of AW0,1,2,3 (both requirements can be achieved only in case of AW4). In case tractive effort is designed to achieve adhesion coefficient, acceleration requirement criteria can not be achieved.	Tender Conditions Prevail.	We again would like to request CMRL to delete "including rail adhesion level no greater than 20%, any track conditions within the design criteria" as we believe this is not a common requirement for Indian Metro Projects.	The tender condition is available in Phase 1 tender of CMRL and complied by the Contractor. Tender condition prevails.													
			<table border="1"> <caption>Table 2-7: Rolling Stock Design Performance Requirements</caption> <thead> <tr> <th>Item</th> <th>Values</th> </tr> </thead> <tbody> <tr> <td>Minimum Design Average Acceleration rate for fully loaded (seating plus standing) @ 0 passengers (req.m) train on level tangent track shall be as under: 0 kmph to 40 kmph 0 to 50kmph 0 to 80kmph</td> <td>1.0 m/s² 0.6 m/s² 0.3 m/s²</td> </tr> <tr> <td>Minimum Operational Average Acceleration rate for (seating plus standing) @ 0 passengers (req.m) loaded train on level tangent track shall be as under: 0 kmph to 35 kmph 0 to 50kmph 0 to 80kmph</td> <td>1.20 m/s² 0.65 m/s² 0.35 m/s²</td> </tr> <tr> <td>Service braking rate from 80 kmph to standstill for fully loaded (seating plus standing) @ 0 passengers (req.m) train on level tangent track</td> <td>1.0 m/s²</td> </tr> <tr> <td>Service braking rate from 80 kmph to standstill for (seating plus standing) @ 0 passengers (req.m) train on level tangent track</td> <td>1.1 m/s²</td> </tr> <tr> <td>Emergency braking rate from 80 kmph to 0 kmph for fully loaded train on level tangent track</td> <td>1.3 m/s²</td> </tr> <tr> <td>Jerk rate (Maximum)</td> <td>0.75 m/s³</td> </tr> </tbody> </table>	Item	Values	Minimum Design Average Acceleration rate for fully loaded (seating plus standing) @ 0 passengers (req.m) train on level tangent track shall be as under: 0 kmph to 40 kmph 0 to 50kmph 0 to 80kmph	1.0 m/s ² 0.6 m/s ² 0.3 m/s ²	Minimum Operational Average Acceleration rate for (seating plus standing) @ 0 passengers (req.m) loaded train on level tangent track shall be as under: 0 kmph to 35 kmph 0 to 50kmph 0 to 80kmph	1.20 m/s ² 0.65 m/s ² 0.35 m/s ²	Service braking rate from 80 kmph to standstill for fully loaded (seating plus standing) @ 0 passengers (req.m) train on level tangent track	1.0 m/s ²	Service braking rate from 80 kmph to standstill for (seating plus standing) @ 0 passengers (req.m) train on level tangent track	1.1 m/s ²	Emergency braking rate from 80 kmph to 0 kmph for fully loaded train on level tangent track	1.3 m/s ²	Jerk rate (Maximum)	0.75 m/s ³	Please confirm that the Contractor shall design tractive effort only considering to achieve adhesion coefficient criteria without considering to achieve the acceleration requirement.		
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7	Part 2 Section VI	ERTS – System Requirements 2.14.3.1 3.14.3.2	2.4.3.1 The contractor shall submit design calculations for the safe braking distances and Emergency braking distances for both dry and wet conditions as per EN: 13452-1 and EN 13452 - 2 and design basis for wet condition. (CDRL 2-12) 2.4.3.2 For a normal operation of service brake (nominal 1 m/s ²) on level track from maximum speed, the rake shall brake to a standstill from 80km/h in 247m (+0, -10%) under any Loading Conditions up to AW4 The Contractor shall demonstrate by calculations the minimum adhesion level, required to achieve the stopping distance. Reaction times (dead times of control electronics) are excluded in the measurement of the stopping distance. Reaction time should be less than 300 ms.	According to ERTS Clause 2.14.3.1 and 2.14.3.2, it describes that Braking distance shall be calculated as per EN13452-1 and EN13452-2. According to EN13452-1, "Stopping distance" defines that it includes reaction time and "Braking distance" defines stopping distance without reaction time. ERTS says the contractor shall demonstrate the adhesion level to achieve the stopping distance, and reaction times are excluded. Please clarify adhesion level shall be demonstrated with "Brake distance", not "stopping distance"	Tender Conditions Prevail.	Please replace the first sentence as follows: The contractor shall submit design calculations for the safe braking distances and Emergency braking distances. Both dry and wet conditions shall be as per EN: 13452-1 and EN 13452 - 2 and design basis for wet condition. (CDRL 2-12)	The tender condition is available in Phase 1 tender of CMRL and complied by the Contractor. Tender condition prevails.													
8	Part 1 Section III	Evaluation and Qualification Criteria (EQC) Clause 2.5	1 Bogie Minimum of 105 cars of similar standard gauge with wheel mounted or Axle mounted Disc brakes or tread brake bogies as proposed for this bid should have been designed, manufactured and commissioned in the last ten years starting 01-01-2011 and at least 53 cars with the similar bogies should have been supplied and proven in service for a period of five years or more in a country other than the country of origin of manufacturer.			Please delete "in a country other than the country of origin of manufacturer" from this requirement.	Agreed and included as part of Addendum No. 3													