Chennai Metro Rail Limited
Tender Description: Design, Manufacture, Supply, Testing, Commissioning of Standard Gauge Metro Rolling Stock (78 cars) and Training of Personnel
Tender No. CMRL/PHASE II/SYS/ARE03A/2020
Tender ID: 2021_CMRL_662041_1

Reply to Bidder Queries

Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
1	Part-1, Section - III - (EQC)	2.5	Sub-contractors / Manufacturers of Sub-assemblies	Forms Sys - 1 ~ Sys - 9 are a new requirement and has not been sought by other metros. Existing Clients have their own formats and do not accept customized formats. Hence, it is requested to accept the certificate / document proof from the existing clients capturing the requirements as per Evaluation and Qualification Criteria (EQC) and not insist on the formats. Kindly accept.	The form shall be submitted in any format. It is bidder's responsibility to ensure that all the necessary information sought by CMRL are captured. Tender condition prevails.	N
2	Part-1, Section - III - (EQC)	1.1.1	Personnel The Bidder must demonstrate that…… …… The Bidder shall provide details of the proposed personnel and their experience records in Forms PER-1 and PER-2 in Section IV, Bidding Forms.	Since the deputation of project personnel is a dynamic process, we request the following alternative to be added at the end of clause 1.1.1: "Alternatively, The bidder in his bid shall have to submit an undertaking declaring that post contract award, the personnel will be positioned with requisite experience in compliance with the tender requirement".	Tender condition prevails.	N
3	Part-1, Section - IV - (BF)	4.2	Price centre A – 8% Price centre CST – 3% Price centre FAI – 7% Price centre CPT- 3%	Proposed approtionment as per adjacent clause is unrealistic and leads to abnornmally lower prices for optional cars; We request to rationalize the ammortization percentages. The following price centre apportionment is proposed: Price centre A – 4% Price centre CST – 1% Price centre FAI – 3% Price centre CPT- 1% For kind consideration.	Tender condition prevails.	N
4	Part-1, Section - IV - (BF)	3.2.2	Price Variation / Price adjustment: ……. Price Adjustment for Coaches with Stainless Steel Car-body: Pn = R x { a + b (Sn/So) + c (Cn/Co) + d (Fn/Fo) + f (Ln/Lo) } – R Price Adjustment for Coaches with Aluminium Car-body: Pn = R x { a + e (An/Ao) + c (Cn/Co) + d (Fn/Fo) + f (Ln/Lo) } – R Where: "Pn" is the Price adjustment amount payable to or deductible from the contractor against respective certified milestone payment during the period 'n' under consideration. "R" is the certified payment against the respective milestone during the period under consideration. "a" is a fixed coefficient as specified in Schedule of Adjustment Data in Bidding forms, Section IV, representing the nonadjustable portion in contractual payments; "b", "c", "d", "e" and "f" are coefficients representing the estimated proportion of each cost element (Stainless steel / Aluminum, Copper, Carbon steel and Labor) in the Works or sections thereof, as specified as quoted by the Bidder in Schedule of Adjustment Data in Section IV - Bidding forms.	For the pupose of commonality among the bidders, we suggest the co-efficients "b", "c", "d", "e" and "f" are to be specified by the Chennai Metro itself as part of tender stipulation, than leaving it to the bidders. Please consider.	Tender condition prevails.	N

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5	Part-2, Section - VI - (ERTS)	11.2.7	The bogie systems shall safely function at all speeds up to and including the safe design speed as defined in ERTS clause 2.14.1 without any loss of stability, under all conditions of track and wheel and car wear on the system as defined in ERTS Section 2.	There is no clarity on what is meant by "Car wear". The same may please be clarified or The clause may please be updated as below: "The bogie systems shall safely function at all speeds up to and including the safe design speed as defined in ERTS clause 2.14.1 without any loss of stability, under all conditions of track and wheel wear on the system as defined in ERTS Section 2."	Refer Addendum No. 1, Sl. No. 18	Y
6	Part-2, Section - VI - (ERTS)	11.2.13	There shall be sufficient clearance (but not less than 25 mm between the bogie and car body to allow the car to operate with a deflated secondary suspension system such that damage does not occur at maximum operating speeds under conditions of maximum loading and maximum wheel and suspension system component wear, including creeping or settling.	The criteria for maintaining clearance of not less than 25mm between bogie and carbody is not established. In view of the above The clause may please be modified as by providing reference international standard Or The clause may please be modified as " There shall be sufficient clearance between the bogie and car body ...".	Tender condition prevails.	N
7	Part-2, Section - VI - (ERTS)	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.	The clause may please be modified "Except for the bogie mounted rubber bonded metal components", since the natural rubbers cannot comply to EN 45545 in order to achieve desired suspension characteristics.	Tender condition prevails.	N
8	Part-2, Section - VI - (ERTS)	11.2.18.3.9	"Under conditions of a dragging parking brake for a minimum distance of 3 kilometers at a speed of 10Km/h, no damage shall be caused to the braking system or any bogie component, with the exception of abnormal shoe wear. Detailed figures to be provided during preliminary design stage."	Repercussions of the ERTS clause requirement is not practical. Bogie mounted braking system, wheels and tracks may be subjected to severe damage. The clause may please be updated suitably with relevant standard or the clause may please be deleted.	Tender condition prevails.	N
9	Part-2, Section - VI - (ERTS)	11.3.3	b. The Contractor shall demonstrate that the bogie assembly design is compatible with the collision requirements of these Technical Specifications.	The clause may please be deleted since collision requirements talks only about carbody which is tested and proved with crashworthiness. (Or) The clause may please be updated with the relevant standard.	Tender condition prevails.	N
10	Part-2, Section - VI - (ERTS)	11.3.3	c. CMRL reserves the right to request a new stress analysis and static and dynamic tests should previous tests be deemed inappropriate.	It is understood that the New stress analysis and static and dynamic tests infers that the simulations and tests are to be repeated and no waiver shall be provided should previous simulation / tests be deemed inappropriate. The clause may please be elaborated with respect to "new stress analysis and static and dynamic tests".	Tender condition prevails.	N
11	Part-2, Section - VI - (ERTS)	11.4.2	Elastomeric springs are preferred by CMRL and shall have a minimum amount of "creep". Elastomeric springs shall be subject to an approved program of preloading or exercising at assembly of the bogie to compensate for the deflection caused by initial "creep" of the elastomer.	The clause may please be modified by including a reference standard.	Refer Addendum No. 1, Sl. No. 19	Y
12	Part-2, Section - VI - (ERTS)	11.4.13.2 11.4.13.5	11.4.13.2: The Sperling ride index of the rake at 80 km/h shall not exceed 2.50 in both vertical and horizontal directions in inflated condition of secondary suspension and 3.0 in deflated condition. 11.4.13.5: 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	The ride index mentioned in both the clauses is contradicting. The clauses may please be modified accordingly.	Refer Addendum No. 1, Sl. No. 20	Y

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13	Part-2, Section - VI - (ERTS)	11.4.13.6	"Bogie swing tests shall be conducted in accordance with ERTS clause 17.5.2.12 between interface of motor car and trailer car to verify the required degree of rotation (horizontally and vertically) and that cables and hoses are clear from any pinching, chafing and stretching,"	The clause may please be updated suitably covering relevant standard and methodology.	Refer Addendum No. 1, Sl. No. 21	Y
14	Part-2, Section - VI - (ERTS)	11.4.14	The Contractor shall submit a detailed dynamic model to demonstrate the running behaviour and performance characteristics of the proposed service proven bogie design. (CDRL11-8)	Usually a vehicle dynamic analysis report will be submitted. The clause may please be elaborated with regard to the dynamic model and a reference standard may please be provided.	Tender condition prevails.	N
15	Part-2, Section - VI - (ERTS)	11.6.4.1	In addition to the bogie loading identified in this section, the contractor shall ensure that the bogies are capable of surviving the collision scenarios specified in ERTS clause 3.14.9 without detaching from the car or deforming in a manner that will penetrate the passenger compartment. Equipment supports shall also be designed to prevent equipment from becoming projectiles.	Highlighted portion of the ERTS clause is open without any reference to standards, methodology and criteria, in general for bogie system and especially for equipment supports. In view of the above, ERTS may please be updated providing the reference to standard or by deleting the highlighted portion of the clause. ~~The ERTS clause 3.5.8 referred is not available. Hence the clause may please be corrected suitably.~~	Tender condition prevails.	N
16	Part-2, Section - VI - (ERTS)	11.9.4	"The wheel and suspension shall be optimized to minimize squealing in curves, track curves are 120m on mainline and 100m on depot. This must be confirmed by test."	Highlighted portion of the ERTS clause is open without any reference to standards, methodology and criteria. In view of the above, ERTS may please be updated providing the reference to standard or by deleting the highlighted portion of the clause.	Tender condition prevails.	N
17	Part-2, Section - VI - (ERTS)	11.11.1	The bogies shall be fitted with an oil type wheel flange lubrication system of proven design in metro application. The system shall lubricate the wheel flanges while negotiating curves. The purpose of the wheel flange lubrication system shall be to reduce wear of wheel & track / rail and reduce squealing noise in curves.	Highlighted portion of the clause is open with no clarity on which car bogies oil type wheel flange lubrication system is intended to be installed. Clarity may please be provided defining if the WFL shall be installed on all bogies or is it only for DM car leading bogies?	Refer Addendum No. 1, Sl. No. 23	Y
18	Part-2, Section - VI - (ERTS)	11.12.1	"At both the outer ends of the Driving Motor Car, an obstruction deflection & detection device and derailment detection device (ODDD) shall be installed to detect the obstacles and push away obstacles on track to avoid derailment. All other bogies shall have derailment detection device."	ERTS clause may suitably be updated clarifying the requirement of the derailment detection device in all bogies i.e., rear bogies of Driving Motor Car and bogies of intermediate cars. Usual practice is providing a Obstacle deflection and derailment detection device on the front bogie of DM car. Also, the location of derailment detection device i.e., front, rear or either ends of all bogies may please be explicitly defined. Details regarding the type of derailment detection and monitoring system such as condition monitoring/real time monitoring etc and the technology (Mechanical impact/ Radio frequency/Laser technology etc) may also please be clearly defined. The mentioned requirement will also add up to the cost of the project and hence the clause may please be suitably modified.	Tender condition prevails.	N
19	Part-2, Section - VI - (ERTS)	17.5.2.10.1	One complete bogie frame, including the journal bearing housing, bearing / sliding pads and connecting elements such as traction rods shall be subjected to static and fatigue testing to demonstrate compliance with the loads in ERTS Section 11.6.	Common practice of carrying the static and fatigue tests of bogie frame is as per UIC 515-4 and UIC 615-4 where only bogie frame is subjected to static and fatigue testing. The requirement in the subject clause calls for testing of "bogie frame, including the journal bearing housing, bearing/sliding pads and connecting elements such as traction rods". The requirement may please be revised providing clarity if these additional items are to be mounted during the static and fatigue test of bogie frame?"	Tender condition prevails.	N

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20	Part-2, Section - VI - (ERTS)	17.5.2.10.9	A load equalization test shall be performed on one motor bogie and one trailer bogie installed on the first completed married pair at AW0 load conditions. For this test, one wheel of the bogie shall be raised and then lowered 63.5 mm with respect to the plane formed by the other three wheels of the same bogie as they rest on level track. An alternative design and service proven load equalization test may be presented to CMRL for approval during design review. During the test, the other three wheel treads shall maintain contact with the rails. 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.	The procedure detailed in the ERTS requirement and the criteria is not proven/established. The clause may please be updated for procedure and criteria by providing reference to a relevant international standard.	Tender condition prevails.	N
21	Part-2, Section - VI - (ERTS)	2.14.1.5 Table 2-7	Rolling Stock Design Performance Requirements	As per Table 2-7 "Rolling Stock Design Performance Requirements" Pg. No. 2-21, the deceleration rates are defined only for AW4 and AW3 load condition for service brake. You are requested to also provide the deceleration rate for AW2 and AW0 load condition.	Tender condition prevails.	N
22	Part-2, Section - VI - (ERTS)	2.14.1.5	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 actual, rail wheel adhesion cannot be controlled but typically will be 16%. Hence, 20% limit is high as it is not practical. In actual if the adhesion is lower, required stopping distance may not be able to achieve. It is recommend to keep 18% maximum value.	Tender condition prevails.	N
23	Part-2, Section - VI - (ERTS)	2.14.3.2	For a normal operation of service brake (nominal 1 m/s2) 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.	Regarding Reaction time, please clarify is it the time at which brake demand is received by Brake control Unit (from TCMS at car level) and start to trigger actuation of EP valves for application of brake. Since, deceleration or stopping distance is safety critical parameter, this requirement of Reaction time can be deleted or given as guidelines.	Refer Addendum No. 1, Sl. No. 5	Y
24	Part-2, Section - VI - (ERTS)	2.14.3.3	For an emergency brake application in good adhesion conditions (i.e. dry uncontaminated wheel rail interface) on level track from maximum speed, the rake shall brake to a standstill from 80km/h within a distance of 223m under any Loading Conditions up to AW4. The minimum average emergency brake rate following any single point failure shall not be less than 1.3 m/s2	As per Cl. 12.18.2, "In case of single point failure in brake control system, which can be automatically isolated and fully compensated without affecting the train performance". The Emergency brake rate will continue to keep the stopping distance as primary requirement and not deceleration rate. Hence EB deceleration rate requirement should be removed or keep 1.1 to avoid conflict with other clauses.	Tender condition prevails.	N
25	Part-2, Section - VI - (ERTS)	2.15.9.3	The system shall be designed to be Fail Safe to ensure that any failure of the system shall not render it ineffective for friction brake control. If a failure of the slide protection system occurs while braking, the system shall not reduce the level of braking below the commanded level for more than three (3) seconds. Alternatively, the contractor must demonstrate fail safe proven design to CMRL.	Requirement is not clear "below the commanded level" means in deed that WSP is not active anymore after 3 s, but in 3 s the system is not always able to compensate sliding fully. Hence, this will lead to flat wheels. As per UIC 541-05, the time given is 10 s. Typically, 8 s is applied in various projects. Please clarify.	The clause description mentioned in the query is wrong. Tender condition prevails.	N
26	Part-2, Section - VI - (ERTS)	2.15.10.5	During braking, if the dynamic braking is operating and is providing all the required effort, the BCU shall maintain sufficient EP brake pressure to keep the brake pads / brake block close to the disks / wheel treads, but shall not contribute to any braking effort or cause wear to the brake pads / brake blocks.	It is not recommended pre-pressure provision as this can lead to negative implications on brake pad wear or glazing effect which will reduce the friction coefficient. Since all the braking parameters are already defined, this requirement may lead to poor performance. Hence, we strongly recommend to remove this clause to avoid any negative impact of brake system.	Tender condition prevails.	N
27	Part-2, Section - VI - (ERTS)	5.8.1	Each emergency operator's desk shall be provided with an electrical warning horn with both high decibel and low decibel features.	Electrically operated pneumatic horn are widely used and proven in almost all the metro projects in the country, you are requested to review and update the clause suitably.	Refer Addendum No. 1, Sl. No. 12	Y

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28	Part-2, Section - VI - (ERTS)	11.2.18.3.9	Under conditions of a dragging parking brake for a minimum distance of 3 kilometers at a speed of 10Km/h, no damage shall be caused to the braking system or any bogie component, with the exception of abnormal shoe wear. Detailed figures to be provided during preliminary design stage.	Parking brake is released when pulling the train unless not possible due to train stopped inside tunnel / bridge. Dragging requirement will limit the safety against rolling under worst case. It is advisable to remove dragging brake requirement or allow wheel flat.	Tender condition prevails.	N
29	Part-2, Section - VI - (ERTS)	11.2.18.3.10	The parking brake shall be an integral part of the friction brake actuation system. Brake actuators shall be sufficient to permit push-through without any wheel damage.	Parking brake is released when pulling the train unless not possible due to train stopped inside tunnel / bridge. Dragging requirement will limit the safety against rolling under worst case. It is advisable to remove dragging brake requirement or allow wheel flat.	Tender condition prevails.	N
30	Part-2, Section - VI - (ERTS)	12.4.1	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.	It is with both compressors on or with single compressor. Usually, during charging all the compressors will be running. Please clarify to avoid any ambiguity	Refer Addendum No. 1, Sl. No. 24	Y
31	Part-2, Section - VI - (ERTS)	12.6.7.10	All the pneumatic control equipment, safety valves, governors, switches, sensors etc. in the underframe shall be provided in IP53 or higher compliant lockable boxes for dust control. The enclosed lockable boxes shall be made of stainless steel.	Pipe mounted equipment shall also be allowed without lockable box. Applicability of IP53 shall be clarified to items kept under lockable box.	Tender condition prevails.	N
32	Part-2, Section - VI - (ERTS)	16.12.1.5	The Contractor shall submit all documentation as required elsewhere in this contract. Without limitation, the Contractor shall also provide additional information or documentation related to the design and production of the cars if requested to do so by CMRL. In the event that the Contractor deems specific documents to be proprietary, the Contractor must demonstrate to CMRL's satisfaction that the documents are proprietary, and shall enter into a suitable confidentiality agreement that is acceptable to CMRL. For the purpose of this paragraph, confidentiality agreements related to proprietary documentation shall provide CMRL with sufficient access to readily verify compliance with contract requirements and shall provide the Contractor with appropriate commercial protection for sensitive information.	Sensitive / proprietary documents shall be auditable at contractor's premises and allowed to put under ESCROW account. Agreement at every sub-system will only increase the documentation with no added value. CMRL may please consider this point and clarify the allowing to put under ESCROW as done by other Metro corporations.	Tender condition prevails.	N
33	Part-2, Section - VI - (ERTS)	17.5.3.4.1	A braking tread brake block and/or disc pad, if used, and caliper assembly shall be tested on a dynamometer to verify the brake-system capacity with both cold and hot tread brake block and/or disc initial conditions. The block and/or disc and shoe surface temperature shall be measured and recorded throughout the test. At the completion of this test, the tread brake unit and/or brake disc and caliper assembly shall remain in an undamaged, fully operable condition. If brake components other than the block and/or disk brake components are used, such components shall be subject to equivalent thermal capacity testing.	"If brake components other than the block and/or disk brake components are used, such components shall be subject to equivalent thermal capacity testing." This sentence is misleading as the thermal capacity of other components in the brake system will be far lower than thermal capacity of Brake block. Hence, CMRL may please clarify or delete the sentence "If brake components other than the block and/or disk brake components are used, such components shall be subject to equivalent thermal capacity testing."	Tender condition prevails.	N

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34	Part-2, Section - VI - (ERTS)	10.11.21	Contractor shall hire a reputed Power system analysis Design Consultant with the approval of CMRL and provision shall be made for arranging minimum three presentations by design Consultant to CMRL.	We understand that either CMRL or Traction contractors carry out 'Power System Analysis Design'. What is the role of Rolling Stock contractor to carry out the similar work through a consultant. We request CMRL to kindly delete this clause. In case, CMRL wants ARE03A contractor has to fulfill the requirement, please clarify the following:- As per the tender, the RS contractor has to supply 26 trainsets of 3 car each. a)Whether 'Power System Analysis Design study' should be carried out for all the three corridors? b)Whether the study should be carried out considering only 26 trainsets of 3-car each? c)What is the load distribution i.e., 26 trainsets for each line? d)What is the role of Rolling stock contractor? e)What should be done in case the report of consultant (hired by RS contractor) varies with Traction Contractor? f)What should be the credentials of the consultant?	Refer Addendum No. 1, Sl. No. 16	Y
35	Part-2, Section - VI - (ERTS)	Appendix C – Interfaces 5.4.3 Sl. No. 15	Testing & commissioning RS Contractor Shall conduct test to measure, record and analyse power quality and OCS Contractor Shall jointly check electrical loads, harmonic levels, proper contact between pantograph and OCS.	Since rolling stock contractor has been asked to conduct test on power quality along with OCS contractor during testing and commissioning, we request CMRL to delete ERTS 10.11.15 and 10.11.16 calling for instrumenting 6 trains with Power Quality Measurement as there is no availability of Rolling stock specific equipments meeting ERTS 10.11.15.	Tender condition prevails.	N
36	Part-2, Section - VI - (ERTS)	10.11.15	Two trains on each line shall be instrumented with separate Power Quality measuring instruments, data acquisition systems and power analyzer (with provision for permanent installation and shall have necessary in-built software/analysis tool) to measure, record and analyze the power quality parameters. This instrument shall also have memory storage for minimum 15 days of testing data. The measurement with these instruments shall include but not limited to Time, kW, kVAR, kVA, THD, TDD, Total PF and Displacement PF. The instruments supplied shall have the adequate capability of measuring and data acquisition to analyze higher order harmonics (up to 50th) and measure power quality parameters mentioned above with minimum accuracy of 0.1% and sampling rate of 100 kHz. Details of instruments shall be finalized during design stage. Other trains shall also have necessary provisions (suitable space, wiring etc.) for installation and recording power quality parameters as per above.	Since rolling stock contractor has been asked to conduct test on power quality along with OCS contractor during testing and commissioning, we request CMRL to delete ERTS 10.11.15 and 10.11.16 calling for instrumenting 6 trains with Power Quality Measurement as there is no availability of Rolling stock specific equipments meeting ERTS 10.11.15.	Refer Addendum No. 1, Sl. No. 42	Y
37	Part-2, Section - VI - (ERTS)	10.11.16	If Contractor proposes to measure the power quality parameters as mentioned in above Para, through TCMS (it is preferred). In such case, TCMS shall have the adequate capability of measuring and data acquisition to analyze higher order harmonics (up to 50th) and measure power quality parameters mentioned above with minimum accuracy of 0.1% and sampling rate of 100 kHz. Also, a suitable power analyzer, software/analysis tool shall be built in. However, final approval will be provided by CMRL by comparing both proposals.	Since rolling stock contractor has been asked to conduct test on power quality along with OCS contractor during testing and commissioning, we request CMRL to delete ERTS 10.11.15 and 10.11.16 calling for instrumenting 6 trains with Power Quality Measurement as there is no availability of Rolling stock specific equipments meeting ERTS 10.11.15.	Tender condition prevails.	N
38	Part-2, Section - VI - (ERTS)	11.9.15	The Contractor shall provide and install a way side automatic wheel profile measuring system at a suitable location in CMRL maintenance depot, where the rakes are expected to be maintained. The cost of the system shall be deemed to be included in the quoted price. The equipment details shall be submitted to CMRL during Pre-final design stage, for approval.	As per Clause No. 11.4.1 – Sl.No. 26 of ERTS- Appendix C, CMRL would be contracting the Automatic Wheel Profile Monitoring System to a DEQ contractor and RS contractor has to share the design of train required. Considering the above, we request CMRL to delete the requirement from ARE03A.	Refer Addendum No. 1, Sl. No. 22	Y

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39	Part-2, Section - VI - (ERTS)	11.9.15	The Contractor shall provide and install a way side Hot Axle measuring system in each corridor at a suitable location in consultation with CMRL. The cost of the system shall be deemed to be included in the quoted price. The equipment details shall be submitted to CMRL during Pre-final design stage for approval.	We under that the requirement is to measure the temperature of axle bearing. Please clarify. Whether RS contractor under ARE03A has to supply and install the equipment in all three corridors and in both UP and DOWN lines? Please clarify.	Refer Addendum No. 1, Sl. No. 22	Y
40	Part-2, Section - VI - (ERTS)	14.11.2 d)	Depot management tools, issue of work orders, issue & closure of job cards etc. shall be linked with this system. It shall be possible to issue & closure of job cards for the failures occurred in the train from the RTR-DMS operated in RSC consoles of OCC, BCC & DCCs. It shall be possible to replicate this function in PPIO room in depot maintenance workshop. RS contractor shall interface with Asset Management contractor for combined working of RTR-DMS with Depot Management Tools.	ERTS 14.11.2 (d) and Interface Section 15 clearly says that CMRL would be contracting the supply and commissioning of 'Depot Management tools' separately. However, GA5 Sl.NO. 25 is asking RS contractor to supply 2 sets of 'Depot Maintenance tools'. We understand that the requirement of GA5 Sl.No. 25 and Interface section 15 are same. Considering the above, request CMRL to delete the Sl.No. 25 in GA5 list.	Maintenance Tools is different, these tools shall be proposed by RSM based on their previous project experience.	N
41	Part-1, Section - IV - (BF)	GA 5 Sl.NO. 25	Depot maintenance tools Software tools for train equipment maintenance & monitoring equipment.	ERTS 14.11.2 (d) and Interface Section 15 clearly says that CMRL would be contracting the supply and commissioning of 'Depot Management tools' separately. However, GA5 Sl.NO. 25 is asking RS contractor to supply 2 sets of 'Depot Maintenance tools'. We understand that the requirement of GA5 Sl.No. 25 and Interface section 15 are same. Considering the above, request CMRL to delete the Sl.No. 25 in GA5 list.	Maintenance Tools is different, these tools shall be proposed by RSM based on their previous project experience.	N
42	Part-2, Section - VI - (ERTS)	Appendix C – Interfaces 15	Asset Management System (Depot Management Tools)	ERTS 14.11.2 (d) and Interface Section 15 clearly says that CMRL would be contracting the supply and commissioning of 'Depot Management tools' separately. However, GA5 Sl.NO. 25 is asking RS contractor to supply 2 sets of 'Depot Maintenance tools'. We understand that the requirement of GA5 Sl.No. 25 and Interface section 15 are same. Considering the above, request CMRL to delete the Sl.No. 25 in GA5 list.	Maintenance Tools is different, these tools shall be proposed by RSM based on their previous project experience.	N
43	Part-2, Section - VI - (ERTS)	2.25.4	In the event of measured SEC exceeding the specified SEC, the Contractor shall carry out rectification / modification work on the train, within a reasonable time as agreed with CMRL (not beyond DNP completion of pilot train) to achieve the specified SEC. In case the Contractor fails to achieve the specified SEC, the Bank Guarantee related to Performance will be held.	In order to avoid arbitrariness, disagreements during the contract execution stage related to quantum of deduction in case of non-achievement of the specified SEC value, we request to include formula for calculation of penalty. This is already followed by other metro corporation. Please include penalty calculation formula in the clause.	Tender condition prevails.	N
44	Part-2, Section - VI - (ERTS)	Appendix C - Interfaces	Interface between Rolling stock and OCS contractors shall be for all the three corridors of CMRL Phase 2 i.e., Corridor 3, Corridor 4, Corridor 5, their future extensions and for their inter-corridor operations.	To comply with the clause, more details are needed regarding "future extensions and for their inter-corridor operations". Otherwise, the description is vague and cannot be factored. Please provide.	The design parameters of Phase 2 will be followed for corridor extensions.	N
45	Part-2, Section - VI - (ERTS)	20.6.6	The Contractor shall define procedures to ensure the security of the software configuration status and system during both the development and operation stages	Can CMRL confirm if the proponent has to provide OT cybersecurity for rolling stock systems inline with ISA/IEC 62443 and CLC/TS 50701? Please provide additional guidance on this rated requirement. Also confirm, if The contractor shall ensure security system design and implement industry standard IEC 62443? Refer attached letter from Ministry of Railways	Tender condition prevails.	N
46	Part-2, Section - VI - (ERTS)	20.6.6	Other than just procedural control, built-in security facility / function (e.g. access control, anti-virus, firewall, any computer security standards to comply with – ("this is for AFC only", etc.) is essential for safety-related and bona fide systems (e.g. ATS and AFC). These should be added if they are not included in the Particular Spec. for the individual system.	Can CMRL confirm the possibility of having visibility of OT assets or inventory analytics and virtual segmentation and policy definitions based on IEC 62443 ZCR (Zone Conduit Requirement), according to the rolling stock application layer as mandatory?	Tender condition prevails.	N

Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response	Addendum
47	Part-2, Section - VI - (ERTS)	20.6.6	Other than just procedural control, built-in security facility / function (e.g. access control, anti-virus, firewall, any computer security standards to comply with – ("this is for AFC only", etc.) is essential for safety-related and bona fide systems (e.g. ATS and AFC). These should be added if they are not included in the Particular Spec. for the individual system.	Can CMRL confirm the security system should have next-generation threat detection and incident response services through OCC or SOC to safeguard the operational network from emerging cyber threats?	Tender condition prevails.	N
48	Part-2, Section - VI - (ERTS)	20.6.6	The Contractor shall define procedures to ensure the security of the software configuration status and system during both the development and operation stages	Can CMRL confirm if Risk Assessment will be part of the scope of the work inline with ISO 27005? Please provide some background on the intent of this requirement? We wanted to understand if there is any separate line item for the due diligence and assessment phase or will it be merged under implementation planning & design phase?	Tender condition prevails.	N
49	Part-2, Section - VI - (ERTS)	20.6.6	Other than just procedural control, built-in security facility / function (e.g. access control, anti-virus, firewall, any computer security standards to comply with – ("this is for AFC only", etc.) is essential for safety-related and bona fide systems (e.g. ATS and AFC). These should be added if they are not included in the Particular Spec. for the individual system.	Can CMRL confirm if the RS contractor has to ensure non-interference from security functionalities to safety? Also if the contractor has to ensure a non-intrusive, passive, real time continuous monitoring of the Rolling Stock network (TCMS, PACIS and passenger networks) has no negative impact on the operation of the system?	Tender condition prevails.	N
50	Part-2, Section - VI - (ERTS)	20.6.6	Other than just procedural control, built-in security facility / function (e.g. access control, anti-virus, firewall, any computer security standards to comply with – ("this is for AFC only", etc.) is essential for safety-related and bona fide systems (e.g. ATS and AFC). These should be added if they are not included in the Particular Spec. for the individual system.	Can CMRL confirm if the RS contractor shall propose and execute a secured design lifecycle and implement methodologies covering security policies, standards and processes which governs the system. Information flows within the system and with other interfacing contractor systems indicating ports and services to be used and it's control. The RS contractor has to ensure user identifications, roles and group used and access control matrix.	Tender condition prevails.	N
51	Part-2, Section - VI - (ERTS)	20.6.6	Other than just procedural control, built-in security facility / function (e.g. access control, anti-virus, firewall, any computer security standards to comply with – ("this is for AFC only", etc.) is essential for safety-related and bona fide systems (e.g. ATS and AFC). These should be added if they are not included in the Particular Spec. for the individual system.		Tender condition prevails.	N
52	Part-2, Section - VI - (ERTS)	20.6.6	Other than just procedural control, built-in security facility / function (e.g. access control, anti-virus, firewall, any computer security standards to comply with – ("this is for AFC only", etc.) is essential for safety-related and bona fide systems (e.g. ATS and AFC). These should be added if they are not included in the Particular Spec. for the individual system.		Tender condition prevails.	N