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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
1	Part 2 Section VIA (ERTS – RS)	12.2.7	The brake system shall comply to UIC 544-1 regarding Braking Performances.	Justification: Bidder request to keep the requirement in line with clause 2.15.8.15 which asks for brake performance to be in line with EN 13452-1. Amendment Requested: The brake system shall comply to ~~UIC 544-1~~ EN 13452-1 regarding Braking Performances.	**Refer Addendum Sl. No. 7**
2	Part 2 Section VIA (ERTS – RS)	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	Justification: Bidder would like to inform that the WSP system satisfy the requirements of UIC 541-05 according to the clause 12.12.3.(c). As per this standard the reduction of brake effort to control slide should not be more than 10sec. In case we will restrict the time to 3 sec then it may lead to wheel flat issue. Amendment Requested: 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)~~ TEN (10) seconds as per UIC 541-05. Alternatively, the Contractor must demonstrate fail safe proven design to CMRL.	**Refer Addendum Sl. No. 10**
3	Part 2 Section VIA (ERTS – RS)	12.3.15	The Contractor shall ensure that the pressure leakage from the train under static condition shall not exceed 1 bar / hour. This function shall be tested at contactor's manufacturing facility. The contractor shall ensure this requirement is met throughout the entire design life. Any trends of deterioration of pneumatic integrity shall be remedied by the Contractor through an appropriate modification.	Justification: Leakage rate of 1bar/hour is quite stringent, therefore, bidder would like to request CMRL to consider Leakage rate of 0.2 bar/5min (2.4bar/hour) as per the standard EN 61133 section 8.9.2.2. Amendment Requested: The Contractor shall ensure that the pressure leakage from the train under static condition shall not exceed 1 2.4bar / hour. This function shall be tested at contactor's manufacturing facility. The contractor shall ensure this requirement is met throughout the entire design life. Any trends of deterioration of pneumatic integrity shall be remedied by the Contractor through an appropriate modification	**Refer Addendum Sl. No. 39**
4	Part 2 Section VIA (ERTS – RS)	12.16.3	To facilitate the rescue of a defective train which has a burst MR pipe (or total loss of pneumatic integrity); the rescuing train shall be able to push-out a failed train in a condition where the MR pipe is isolated at the auto coupler, service brakes are isolated on the defective train and its parking brakes are applied (as defined in clause 2.14.2.3).	Justification: Bidder would like to inform that as per clause 2.14.2.2 rescue without parking brake applied in dead train is asked whereas in clause 12.16.3 rescue with parking brake applied in dead train is asked. Accordingly we request the customer to amend the clause 12.16.3 in line with 2.14.2.2. Amendment Requested: To facilitate the rescue of a defective train which has a burst MR pipe (or total loss of pneumatic integrity); the rescuing train shall be able to push-out a failed train in a condition where the MR pipe is isolated at the auto coupler, service brakes are isolated on the defective train ~~and its parking brakes are applied~~ (as defined in clause 2.14.2.3).	**Refer Addendum Sl. No. 46**
5	Part 2 Section VIA (ERTS – RS)	10.3.4	A pantograph auto-drop function shall be provided to drop the pantograph automatically when excessive height is detected (to be finalized during design stage, but shall be a minimum of 5,900mm from top of rail height). An indication shall be provided to the train operator and RSC consoles of OCC, BCC & DCC when this function has been triggered. During pantograph entanglement with OHE catenary, there shall be an indication to the train operator and RSC consoles of OCC, BCC & DCC	Justification: Bidder would like to inform that as per section 4.2.3 of SoD height of contact wire is mentioned as 5500mm which is in line with other metro projects in India. Standard pantograph products are designed for the same extensions. Accordingly in line with other Indian projects including ARE03A we request to modify this requirement. Amendment Requested: A pantograph auto-drop function shall be provided to drop the pantograph automatically when excessive height is detected (to be finalized during design stage, but shall be a minimum of ~~5,900 mm~~ 5500 mm from top of rail height). An indication shall be provided to the train operator and RSC consoles of OCC, BCC & DCC when this function has been triggered. During pantograph entanglement with OHE catenary, there shall be an indication to the train operator and RSC consoles of OCC, BCC & DCC	**Refer Addendum Sl. No. 28**
6	Part 2 Section VIA (ERTS – RS)	9.6.6	Minimum life expectancy of at least 15 years at local ambient temperature, recharge time, safety margin, etc. shall be considered for the sizing and matching of the battery charger and the batteries.	Justification: Bidder would like to inform that minimum life expectancy of 15 years is on bit higher side and is not confirmed by most of the suppliers accordingly we request to amend this requirement in line with other projects including ARE03A. Amendment Requested: Minimum life expectancy of at least ~~15 years~~ 12 years at local ambient temperature, recharge time, safety margin, etc. shall be considered for the sizing and matching of the battery charger and the batteries.	Tender Condition Prevails
7	Part 2 Section VIA (ERTS – RS)	9.6.9.(ii)	The train is being restarted from OFF condition after a shutdown was ordered due to low battery voltage detection. # Note: 24hrs is the minimum duration of Sleep Mode condition which must be achieved (and demonstrated by the Contractor) before the battery charge depletes to the level where the voltage supervision orders a full shutdown of the train. Battery voltage supervision shall always be available when the train is in Sleep Mode. Detailed Sleep Mode power requirements will be finalized based on the electrical load interface of the Onboard Signalling Requirement during the Design Stage.	Justification: Bidder would like to inform that sleep mode of 24 hrs is on higher side. Normally 18hrs per day is considered for mainline operation and hence 16hrs for sleep mode shall be sufficient otherwise it will lead to unnecessary increase in size of the battery. Accordingly we request to amend this requirement. Amendment Requested: The train is being restarted from OFF condition after a shutdown was ordered due to low battery voltage detection. # Note: 16 hrs ~~24 hrs~~ is the minimum duration of Sleep Mode condition which must be achieved (and demonstrated by the Contractor) before the battery charge depletes to the level where the voltage supervision orders a full shutdown of the train. Battery voltage supervision shall always be available when the train is in Sleep Mode. Detailed Sleep Mode power requirements will be finalized based on the electrical load interface of the Onboard Signalling Requirement during the Design Stage.	Tender Condition Prevails
8	Part 2 Section VIA (ERTS – RS)	10.8.3	The main transformer shall be designed to conform to IEC 60310 and the temperature rise limits of windings and oil shall correspond to IEC 60310 limits (minus 20o C if forced cooling is adopted). The insulation class of main transformer shall be minimum Class F.	Justification: Bidder would like to inform that insulation in the transformer is decided based on the thermal characteristics required for load cycle. Hence minimum insulation of class F type may not be necessarily required. Accordingly, bidder request to CMRL to provide flexibility for selection of insulation class as class F type of insulation will lead to substantial increase in the cost of the product. Amendment Requested: The main transformer shall be designed to conform to IEC 60310 and the temperature rise limits of windings and oil shall correspond to IEC 60310 limits (minus 20o C if forced cooling is adopted). ~~The insulation class of main transformer shall be minimum Class F.~~	Tender Condition Prevails.

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9	Part 2 Section VIA (ERTS – RS)	2.14.1	The acceleration and braking requirements given below are minimums for actual performance with new wheels on level track in still air. Performance shall be verified by empty car acceptance tests done on all cars, as well as loaded car engineering tests done on the first rake. Design calculations shall be based on the Davis Formulae for rolling resistance given below.	Justification: Bidder submits that as OEM of Rolling Stock, bidder may please be allowed to calculate and use RTM specific to OEM's proposed RS, as is permitted in line with other projects like ARE03A. The generic RTM formula may not represent the actual resistance of the OEM's train. Bidder shall submit detailed justification for use of such RTM formula in Project. Amendment Requested: Accordingly, Bidder requests to amend the clause as follows: "The acceleration and braking requirements given below are minimums for actual performance with new wheels on level track in still air. Performance shall be verified by empty car acceptance tests done on all cars, as well as loaded car engineering tests done on the first rake. Design calculations shall be based on the Davis Formulae for rolling resistance for rolling resistance given below **(in both elevated and under-ground) or approved equivalent for a configuration with new wheels.**"	Please refer Clause 1.2.4. Tender condition prevails.
10	Part 2 Section VIA (ERTS – RS)	2.15.9.2	A system shall be provided to detect and control wheel slip / slide on all axles, to ensure that any reduction in requested tractive effort or brake retardation during wheel spin/slide is kept to a minimum.	Justification: Bidder would like to inform that as per clause 2.15.9.8 "Wheel slip detection is done on a per axle basis and wheel slip correction is done on a bogie basis". Accordingly bidder request to amend clause 2.15.9.2 in line with 2.15.9.8 to bring the uniformity in the requirement. Amendment Requested: A system shall be provided to detect ~~and control~~ wheel slip / slide on all axles **whereas controlled on bogie basis**, to ensure that any reduction in requested tractive effort or brake retardation during wheel spin/slide is kept to a minimum.	It is clarified that where the cited clause refers to WSP control, it is not differentiating the levels at which control shall be available. More detailed requirements on WSP correction are already specified in clause 2.15.9.8. Tender Condition Prevails.
11	Part 2 Section VIA (ERTS – RS)	12.6.8.3	The electric regenerative brake shall be independent for each Motor Car and faults on one car shall not adversely affect the braking performance on the other car. Each Bogie of the rake shall have independent Brake Electronics with independent Electro Pneumatic brake control. Detection of Wheel slip & Wheel slide and its protection control shall be per individual axle based.	Justification: Bidder would like to inform that wheel slip detection is done on a per axle basis and wheel slip correction is done on a bogie basis, This is in line with ERTS clause 2.15.9.8. Amendment Requested: The electric regenerative brake shall be independent for each Motor Car and faults on one car shall not adversely affect the braking performance on the other car. Each Bogie of the rake shall have independent Brake Electronics with independent Electro Pneumatic brake control. Detection of ~~Wheel slip &~~ Wheel slide and its protection control shall be per individual axle based.	**Refer Addendum Sl. No. 41**
12	Part 2 Section VIA (ERTS – RS)	2.18.9.1	Rolling stock shall comply with following or equivalent Standards: EN 50121–2.	Justification: Bidder would like to inform that EN 50121–2 is not in the scope of Rolling Stock. It is in the scope of Traction Power Supply System (Substation). Rolling stock shall comply with EN 50121–3 or equivalent Standards. Amendment Requested: Rolling stock shall comply with following or equivalent Standards: EN 50121–~~2~~ 3.	**Refer Addendum Sl. No. 12**
13	Part 2 Section VIA (ERTS – RS)	10.19.1.2	Electro- Magnetic Compatibility and Electro Magnetic Immunity of the equipment of HV and propulsion system and related compatibility and immunity interface with the train external and train internal environment shall follow according to EN 50121-2, EN 50121-3-1, EN 50121-3-2 and EN 50121-4.	Justification: Bidder would like to inform that EN 50121-2 and EN 50121-4 are not in scope of Rolling Stock. Rolling Stock shall comply with EN 50121-3. The complete vehicle will comply with EN 50121-3-1 and all the onboard systems will comply with EN 50121-3-2. Amendment Requested: Electro- Magnetic Compatibility and Electro Magnetic Immunity of the equipment of HV and propulsion system and related compatibility and immunity interface with the train external and train internal environment shall follow according to ~~EN 50121-2~~, EN 50121-3-1 & EN 50121-3-2 and ~~EN 50121-4~~.	Tender Condition Prevails.
14	Part 2 Section VIA (ERTS – RS)	7.4.6.2	The outside fresh air intake in this mode shall not be less than 2.5 litres / sec / passenger @ AW4 load.	Justification: Bidder would like to request CMRL to consider fresh air flow in line with Clause 7.4.4, which specifies 2.2 l/s/Passenger (8m3/h/passenger). Amendment Requested: The outside fresh air intake in this mode shall not be less than ~~2.5~~ 2.2 litres / sec / passenger @ AW4 load.	**Refer Addendum Sl. No. 25**
15	Part 2 Section VIA (ERTS – RS)	3.4.1.4.1	All underfloor piping and conduit shall be stainless steel.	Justification: Bidder would like to inform that it is not possible to provide metallic conduit in Underframe. There will be challenge on weight, cost, bending requirements. Option to be provided on the material usage of conduit in line with other projects like ARE03A. Amendment Requested: All underfloor piping and conduit shall be stainless steel **or alternative material.**	**Refer Addendum Sl. No. 20**
16	Part 2 Section VIA (ERTS – RS)	10.9.1	High voltage Copper cable of adequate voltage rating and diameter shall connect the vacuum circuit breaker to the main transformer. The cable shall be laid in stainless steel pipe from end-to-end terminations from roof to under-frame. The cable insulation and sheathing shall be halogen free, flame retardant and having smoke emission in compliance with IEC 60502, BS 6853 and EN 45545 Part 1 to 7(Category 4-A, Hazard level HL3). The Bushing & Connector shall comply with EN 50180 and EN 50181. The details for roof-end and transformer-end terminations of 25 KV cable shall be provided for the CMRL's review. The cable shall not have any straight through joint / connector between HT bushing on the roof and transformer bushing in the transformer.	Justification: Bidder would like to inform that we follow EN50467 for the connectors globally as per our standard product. Accordingly we request to amend this clause. Amendment Requested: High voltage Copper cable of adequate voltage rating and diameter shall connect the vacuum circuit breaker to the main transformer. The cable shall be laid in stainless steel pipe from end-to-end terminations from roof to under-frame. The cable insulation and sheathing shall be halogen free, flame retardant and having smoke emission in compliance with IEC 60502, BS 6853 ~~and~~ **or** EN 45545 Part 1 to 7(Category 4-A, Hazard level HL3). The Bushing & Connector shall comply with EN 50180 and **EN 50467** ~~EN 50181~~. The details for roof-end and transformer-end terminations of 25 KV cable shall be provided for the CMRL's review. The cable shall not have any straight through joint / connector between HT bushing on the roof and transformer bushing in the transformer.	Please refer Clause 1.2.4. Tender condition prevails.
17	Part 2 Section VIA (ERTS – RS)	14.1.11	The cables which are intended to be used in emergency circuit for alarms and communication shall have intrinsic fire resistant property in compliance with EN 50200-for PH90 and EN 50289.	Justification: Bidder would like to inform that the travel time between two stations is approx. 10 mins only and will lead to higher cost accordingly we request to amend this clause as below. Amendment Requested: The cables which are intended to be used in emergency circuit for alarms and communication shall have intrinsic fire resistant property in compliance with EN 50200-for **PH60** ~~PH90~~ and EN 50289.	Tender Condition Prevails.

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18	Part 2 Section VIA (ERTS – RS)	19.36.3	Current capacities of conductors between traction motors and traction power control equipment shall be per IEEE 835 or NFPA 130, Chapter 4.3.3. Current capacities of all other primary power conductors shall be per EN 50343.	Justification: Bidder would like to inform that we follow EN50343 for the connectors globally as per our standard product. Accordingly we request to amend this clause. Amendment Requested: Current capacities of conductors between traction motors and traction power control equipment shall be per **EN 50343 or** IEEE 835 or NFPA 130, Chapter 4.3.3. Current capacities of all other primary power conductors shall be per EN 50343.	Please refer Clause 1.2.4. Tender condition prevails.
19	Part 2 Section VIA (ERTS – RS)	19.36.13	Fire resistant cables shall be proposed for circuits, which should survive for long periods during fire, as per applicable international standards. As a minimum, the cables and wires for Public Address System, emergency lighting, door opening and warning systems shall be fire resistant in compliant to EN 50200 PH15 & EN 50200 PH90	Justification: Bidder would like to inform that the travel time between two stations is approx. 10 mins only and will lead to higher cost accordingly we request to amend this clause as below. Amendment Requested: Fire resistant cables shall be proposed for circuits, which should survive for long periods during fire, as per applicable international standards. As a minimum, the cables and wires for Public Address System, emergency lighting, door opening and warning systems shall be fire resistant in compliant to EN 50200 PH15 & EN 50200 ~~PH90~~ **PH 60**.	Tender Condition Prevails.
20	Part 2 Section VIA (ERTS – RS)	19.37.6	Car wiring shall comply with EN 50343, and with the AAR Manual of Standards, Section F, S-538, "Wiring Practice and Rolling Stock Standard," except where otherwise specified.	Justification: Bidder would like to inform that we follow EN50343 for the wiring globally as per our standard product. Accordingly we request to amend this clause. Amendment Requested: Car wiring shall comply with EN 50343, ~~and~~ **or** with the AAR Manual of Standards, Section F, S-538, "Wiring Practice and Rolling Stock Standard," except where otherwise specified.	Please refer Clause 1.2.4. Tender condition prevails.
21	Part 2 Section VIA (ERTS – RS)	19.38.1	Each conductor shall be separately covered with insulation. Flat cables are prohibited, except for specific data/communications applications where other arrangements are impractical. Shall comply with EN 50306, EN 50305, EN 50264, NFF 16101 & NFPA130.	Justification: Bidder would like to inform that we follow EN50306 and EN50264 for the cables globally as per our standard product. Accordingly we request to amend this clause. Amendment Requested: Each conductor shall be separately covered with insulation. Flat cables are prohibited, except for specific data/communications applications where other arrangements are impractical. Shall comply with EN 50306, ~~EN 50305,~~ EN 50264 or NFF 16101 & NFPA130.	Please refer Clause 1.2.4. Tender condition prevails.
22	Part 2 Section VIA (ERTS – RS)	19.38.11	Di-electric test for all Control & Power cables shall comply with IEC 61133 & IEC 60077.	Justification: Bidder would like to inform that we follow IEC61133 for the Di-electric test globally as per our standard product. Accordingly we request to amend this clause. Amendment Requested: Di-electric test for all Control & Power cables shall comply with IEC 61133 **& or** IEC 60077.	Please refer Clause 1.2.4. Tender condition prevails.
23	Part 2 Section VIA (ERTS – RS)	19.43.a	For wire sizes 1.5 mm2 Cross sectional area of conductor and larger, the insulation shall be silicone rubber in accordance with AAR S-503, 110oC irradiated cross-linked polyolefin, or abrasion-resistant extruded PTFE (polytetrafluoroethylene) Teflon meeting MIL-W-22759/6B. All cables shall be fire retardant and shall comply with EN 50306-1 to -4, EN 50264-1, EN 50267-2-1. Cables used for Emergency circuits and fire survival circuits shall comply with EN50200.	Justification: Bidder would like to inform that we follow relevant EN 50264, EN 50306 & EN50200 standards for the cables globally as per our standard product. Accordingly we request to amend this clause. Amendment Requested: For wire sizes 1.5 1 mm2 Cross sectional area of conductor and larger, the insulation shall be silicone rubber in accordance with ~~AAR S-503, 110oC irradiated cross-linked polyolefin, or abrasion-resistant extruded PTFE (polytetrafluoroethylene) Teflon meeting MIL-W-22759/6B~~ **EN 50264 & EN 50306**. All cables shall be fire retardant and shall comply with EN 50306-1 to -4, EN 50264-1, ~~EN 50267-2-1~~. Cables used for Emergency circuits and fire survival circuits shall comply with EN50200.	**Refer Addendum Sl. No. 57**
24	Part 2 Section VIA (ERTS – RS)	19.46.13	There shall be at-least 10% spare wires with connected terminals for each category of type of purpose inside each electrical conduit and 20% of spare wires for Trainlines. These categories of wires could be audio, Ethernet, trainlines, various train networks, other serial & parallel communications and all types of car lines or trainlines which are passing through the jumper conduits. It shall be possible for CMRL to utilize these free cables which are within the train conduits without impacting other functionalities of the train at a later stage.	Justification: Bidder would like to inform that as per our REX 10% of trainlines are much more than sufficient to handle the future requirements for modifications during the train lifecycle. 20% spare trainlines will create challenges in terms of volume, weight and fill ratio of cables within the conduit as per EN50343. Accordingly bidder request to amend this clause as below. Amendment Requested: There shall be at-least 10% spare wires with connected terminals for each category of type of purpose inside each electrical conduit and ~~20~~ **10** % of spare wires for Trainlines. These categories of wires could be audio, Ethernet, trainlines, various train networks, other serial & parallel communications and all types of car lines or trainlines which are passing through the jumper conduits. It shall be possible for CMRL to utilize these free cables which are within the train conduits without impacting other functionalities of the train at a later stage.	Tender Condition Prevails.
25	Part 2 Section VIA (ERTS – RS)	2.26.4.2	The Contractor shall prepare a Fire Safety Design Report for review and acceptance by CMRL. This shall be submitted within 2 months of the Commencement Date and shall be further revised and updated at each design stage. Both the design as well as materials used in the cars shall conform to fire safety requirements of EN 45545 Parts 1 to 7 (Category 4-A, Hazard level HL3) or later edition if superseded	Justification: Bidder would like to inform that the fire safety design report requires the final designs to be frozen which will be difficult to accomplish within 2 months of NTP. Hence, Alternatively, Bidder can provide Fire management plan, that list out details of fire safety requirements will be integrated. Amendment Requested: The Contractor shall prepare a ~~Fire Safety Design Report~~ **Fire Management Plan** for review and acceptance by CMRL. This shall be submitted within 2 months of the Commencement Date and shall be further revised and updated at each design stage. Both the design as well as materials used in the cars shall conform to fire safety requirements of EN 45545 Parts 1 to 7 (Category 4-A, Hazard level HL3) or later edition if superseded	**Refer Addendum Sl. No. 15**
26	Part 2 Section VIA (ERTS – RS)	3.2.10	Structural requirements for rail vehicle structures shall be design and tested conforming with GM/RT2100, UIC 566, EN 12663-1.	Justification: Bidder would like to inform that as per our standard solution our product complies to EN12663:2000 P-III category for all Carbody structural requirement. EN12663:2000 P-III is an European standard and is equivalent to UIC 566. Also, GM/RT 2100 asks to follow EN 12663 only for the carbody structural requirements. Accordingly, bidder request to amend this clause in line with ARE03A and other Indian metro projects. Amendment Requested: Structural requirements for rail vehicle structures shall be design and tested conforming with GM/RT2100 / UIC 566 or EN 12663-1.	Please refer Clause 1.2.4. Tender condition prevails.

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27	Part 2 Section VIA (ERTS – RS)	3.2.11	Carbody and its sub-assemblies shall be manufactured conforming to NF F31-101 tolerance class B.	Justification: NF F 31 101 is a French regulation never converted into international regulation such as EN, ISO, … References and tolerances in NF F 31 101 were set up to respect gauge requirements and other functional requirements applicable for these Corail coaches and was only applicable for underframe and CBS. Bidder will provide the tolerances for the carbody and its sub-assemblies based on the functional requirement. **Accordingly, bidder request to delete this requirement in line with ARE03A and other recent Indian metro projects.**	**Refer Addendum Sl. No. 16**
28	Part 2 Section VIA (ERTS – RS)	3.3.7	Non-stainless steel surfaces below the floor of the carbody shall be primed with epoxy coating and then finish painted with two coats of an approved polyurethane paint.	Justification: Bidder would like to inform that for non-stainless steel surfaces below the floor of the carbody, the required surface protection against salty environment will be achieved with primer epoxy coating and final finish with single coat of polyurethane only. The surface will be protected from corrosive salty environment. This is also verified with salt spray test for 960hours. Amendment Requested: Non-stainless steel surfaces below the floor of the carbody shall be primed with epoxy coating and then finish painted with ~~two~~ **at least one** coat of an approved polyurethane paint.	**Refer Addendum Sl. No. 17**
29	Part 2 Section VIA (ERTS – RS)	3.4.6.1	An open split type of double skin gangway shall be provided between the ends of inter-connecting cars. Gangway doors are not desired. Gangway shall be design and tested conforming to the requirements of EN 16286-1 & EN 16286-2 or equivalent.	Justification: To ensure maximum space is available for the movement of passengers we request to keep this requirement open in line with ARE03A. Moreover, we can meet the noise requirements specified in the tender with single skin gangway. Amendment Requested: An open split type of double ***/ single*** skin gangway shall be provided between the ends of inter-connecting cars. Gangway doors are not desired. Gangway shall be design and tested conforming to the requirements of EN 16286-1 & EN 16286-2 or equivalent.	Tender Condition Prevails.
30	Part 2 Section VIA (ERTS – RS)	3.4.6.2	Carbody end wall flatness shall be less than 1.5 mm per each 500 mm conform to the requirements of EN 16286-1 for gangway mounting surface and including outside mounting surface.1	Justification: Bidder would like to inform that flatness on end wall depends on the Gangway interface with carbody shell to avoid water ingress. Moreover, this area is not visible to the passengers also. **Hence in line with ARE03A project, Bidder request to delete this requirement.**	Tender Condition Prevails.
31	Part 2 Section VIA (ERTS – RS)	3.4.6.21	Gangway Strength: The gangway floor shall be designed to meet the same strength requirements as the rest of car floor. The gangway shall withstand without permanent deformation the following loads: a) A differential pressure between inside and outside of the gangway of ± 2.5 kN/m2. ….	Justification: Bidder would like to inform that since, Gangway is provided with drain Hole at the bottom, differential pressure test between inside and outside cannot be performed. Accordingly, request you to delete this clause in line with ARE03A project. Amendment Requested in line with ongoing 78 car project: Gangway Strength: The gangway floor shall be designed to meet the same strength requirements as the rest of car floor. The gangway shall withstand without permanent deformation the following loads: ~~a) A differential pressure between inside and outside of the gangway of ± 2.5 kN/m2.~~ ~~….~~	Tender Condition Prevails.
32	Part 2 Section VIA (ERTS – RS)	3.4.6.23	Vertical gaps between the hinged moving tread-plates of the inter-car gangway and the general floor level of the car shall not exceed 5mm. A means shall be provided to minimise wear of the floor by the sliding action of each moving tread plate. The wear pads provided for this purpose shall have a robust design which prevents risk of detachment from the assembly and it shall be possible to replace the wear pad during scheduled maintenance.	Justification: The maximum vertical gap has been considered as 15mm only during the curve negotiation at 100m. The vertical gaps of 15mm is seen in many service proven gangways and does not pose any problem. However, actual gaps and the location will be obtained after performing a detailed simulation during detailed design stage. The bidder also confirms that Vertical gaps between the hinged moving tread-plates of the gangway and the general floor level of the car will be covered by the tapering / slope on the threshold plate to avoid any trip hazard. Amendment Requested: Vertical gaps between the hinged moving tread-plates of the inter-car gangway and the general floor level of the car shall not exceed ~~5mm~~ **15mm**. A means shall be provided to minimise wear of the floor by the sliding action of each moving tread plate. The wear pads provided for this purpose shall have a robust design which prevents risk of detachment from the assembly and it shall be possible to replace the wear pad during scheduled maintenance.	Tender Condition Prevails.
33	Part 2 Section VIA (ERTS – RS)	3.4.9.4.1	The windshield design shall be a two piece design with glazing and shall be clear in colour. The glazing material shall be laminated glass and it shall comply to IS 2553 or any International Standard. Structural requirements for rail vehicle structures shall be design, tested and conform with GM/RT2100, UIC 566, EN 12663-1, UIC 651, EN 15152.	Justification: Bidder would like to inform that all requirements for windshield will be as per IS 2553. Moreover, for carbody structure we will comply with EN 12663-1. Accordingly, we request to delete this requirement. Amendment Requested: The windshield design shall be a two piece design with glazing and shall be clear in colour. The glazing material shall be laminated glass and it shall comply to IS 2553 or any International Standard. ~~Structural requirements for rail vehicle structures shall be design, tested and conform with GM/RT2100, UIC 566, EN 12663-1, UIC 651, EN 15152.~~	Please refer Clause 1.2.4. Tender condition prevails.
34	Part 2 Section VIA (ERTS – RS)	3.11.4	A proven air exhaust system in Metro/EMU application to be proposed by the Contractor. An exit path to exhaust air shall be provided through openings located in vehicle interior such that openings are not visible to the passengers and proposed opening shall be vermin proof. The proposal shall be subject to CMRL approval.	Justification: Bidder would like to inform that vermin proof design is very difficult to achieve in our standard product. Even if we provide additional grills/mesh, small insects can pass through it. Moreover, it may restrict the passage of air. Bidder will provide the proven air exhaust system which is being used in other in Metro/EMU nationally as well as internationally. Amendment Requested: A proven air exhaust system in Metro/EMU application to be proposed by the Contractor. An exit path to exhaust air shall be provided through openings located in vehicle interior such that openings are not visible to the passengers ~~and proposed opening shall be vermin proof~~. The proposal shall be subject to CMRL approval.	Tender Condition Prevails.

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35	Part 2 Section VIA (ERTS – RS)	3.11.5.4	The Contractor shall ensure adequate water drainage from the roof, such that no water shall be discharged into the vicinity of the passenger doorways. The water shall not accumulate in the rain gutters and shall be easily discharged through adequate sized pipes at levels below the floor level and sufficiently away from the track. Hose/Rubber fittings are not preferred in the discharge pipe and Stainless steel pipe fittings shall be preferred. In case, rubber pipe connections are unavoidable due to tolerance clearance issues, they can be used only at one location provided the life of rubber used shall be more than 15 years and suitable window arrangement on the carbody for its replacement shall be available.	Justification: Bidder would like to inform that our design will ensure ease of feasibility to remove the flexible hose from outside the car. There is no need of any specific window arrange on end wall. Also, all supplier is giving commitment for only 10 years for rubber life. Accordingly, bidder request to amend this requirement. Amendment Requested: The Contractor shall ensure adequate water drainage from the roof, such that no water shall be discharged into the vicinity of the passenger doorways. The water shall not accumulate in the rain gutters and shall be easily discharged through adequate sized pipes at levels below the floor level and sufficiently away from the track. Hose/Rubber fittings are not preferred in the discharge pipe and Stainless steel pipe fittings shall be preferred. In case, rubber pipe connections are unavoidable due to tolerance clearance issues, they can be used only at one location provided the life of rubber used shall be more than ~~15~~ **10** years and ~~suitable window arrangement on the carbody~~ **sufficient accessibility** for its replacement shall be available.	**Refer Addendum Sl. No. 21**
36	Part 2 Section VIA (ERTS – RS)	3.12.3	The Contractor shall submit all the signage's and stickers/logo including under frame for CMRL review and approval. All interior /exterior stickers/ signages strips / logo etc used in any location shall conform to BS EN 5499 part 5 & 6 or international norms and must be in use in more than 3 different metros worldwide. The safety related signages shall be fluorescent. The signage used for marking wheelchair shall be placed on floor as per the standard signage. The Adhesion value of the signages after 24 hours of application shall be 560-600 gm / cm. The Contractor shall prepare detail plan for signages, and stickers / labels as followed in the metros worldwide for CMRL's approval. The signage's for emergencies shall be fluorescent types. Signages, and stickers/ labels shall have better fire, smoke, and toxicity characteristics.	Justification: Bidder would like to inform that all signages will adhere to ISO-3864-1. Accordingly, For Safety related signages and Signages for Emergencies, instead of fluorescent, proposed to use Photo-luminescent as it is better in visibility and have glow in dark properties. Adhesion value of signages is 611gm/cm to 1019gm/cm as per Method-3 of ISO 29862-2018. The Adhesion value of signages is more than the requirement, so it is better. Amendment Requested: The Contractor shall submit all the signage's and stickers/logo including under frame for CMRL review and approval. All interior /exterior stickers/ signages strips / logo etc used in any location shall conform to BS EN 5499 part 5 & 6 or international norms and must be in use in more than 3 different metros worldwide. The safety related signages shall be fluorescent **/ photo-luminescent**. The signage used for marking wheelchair shall be placed on floor as per the standard signage. The Adhesion value of the signages after 24 hours of application shall be **minimum 560** ~~600~~ gm / cm. The Contractor shall prepare detail plan for signages, and stickers / labels as followed in the metros worldwide for CMRL's approval. The signage's for emergencies shall be fluorescent / photo-luminescent types. Signages, and stickers/ labels shall have better fire, smoke, and toxicity characteristics.	Tender Condition Prevails.
37	Part 2 Section VIA (ERTS – RS)	5.2.16	The train operator's seat shall be cushioned, non-slippery, ergonomically designed using nonflammable materials and filling, and fully adjustable in the longitudinal and vertical directions. The seat shall be foldable and adequate measures shall be taken to ensure that it is opened only by the train operator.	Justification: No ready reference solution is available for an ergonomically viable under desk foldable seat due to architectural constraints in the required proximity in CMRL Phase 2 Amendment Requested: The train operator's seat shall be **provided**. ~~cushioned, non-slippery, ergonomically designed using nonflammable materials and filling, and fully adjustable in the longitudinal and vertical directions.~~ The seat shall be foldable and adequate measures shall be taken to ensure that it is opened only by the train operator.	The cited bid condition differs from what has been published in the ARE04A Tender Document. Tender Condition Prevails.
38	Part 2 Section VIA (ERTS – RS)	12.3.2	All piping shall be of stainless-steel conforming to the requirements of JIS3459, ISO 9329-4 and ISO 9330-6 or equivalent preferably of grade SUS316LTP conforming to JIS3459 with flared compression fittings. Alternatively, the pipe fittings shall conform to the requirements of DIN 2353 or approved equal.	Justification: Bidder would like to inform that we use Stainless steel AISI 316L conforming to EN10217-7 and pipe fittings as per ISO8434-1. EN10217 gives better tolerance class and better strength in comparison to JIS. Amendment Requested: All piping shall be of stainless-steel conforming to the requirements of **EN10217-7** ~~JIS3459, ISO 9329-4 and ISO 9330-6~~ or equivalent **preferably AISI316L** ~~grade of grade SUS316LTP conforming to JIS3459 with flared compression fittings~~. The pipe fittings shall conform to the requirements of DIN 2353 **or ISO8434-1 or** approved equal.	Please refer Clause 1.2.4. Tender condition prevails.
39	Part 2 Section VIA (ERTS – RS)	19.32.5 (i)	All brake piping shall be seamless stainless-steel pipe conforming to JIS3459 of SUS316LTP Steel or equivalent, as approved by CMRL.	Justification: Bidder would like to inform that we use Stainless steel AISI 316L conforming to EN10217-7 and pipe fittings as per ISO8434-1. EN10217 gives better tolerance class and better strength in comparison to JIS. Amendment Requested: All brake piping shall be seamless stainless-steel pipe conforming to JIS3459 SUS316LTP Steel **/ EN 10217-7 of AISI 316L** or equivalent, as approved by CMRL.	Please refer Clause 1.2.4. Tender condition prevails.
40	Part 2 Section VIA (ERTS – RS)	8.3.1	The interior lighting system shall comprise of "Dimmable" type LEDs with a minimum of six (6) step lighting control, conforming to EN13272.	Justification: Bidder request to the CMRL to relax 6 step lighting control to 4 step solution in order to use proven standard solution. Amendment Requested: The interior lighting system shall comprise of "Dimmable" type LEDs with a minimum of ~~six (6)~~ **four (4)** step lighting control, conforming to EN13272.	**Refer Addendum Sl. No. 26**
41	Part 2 Section VIA (ERTS – RS)	8.3.1.5	The Colour Rendering Index Ra of all interior LED lights shall not be less than 90.	Justification: Bidder would like to inform that in all reference project the CRI is ~80 to 83. Moreover, LEDs with high CRI are less efficient and consumes more energy in comparison. Amendment Requested: The Colour Rendering Index Ra of all interior LED lights shall not be less than ~~90~~ **80**.	Tender Condition Prevails.
42	Part 2 Section VIA (ERTS – RS)	8.3.1.6	The saloon interior lighting intensity shall be uniformly distributed. The level of illumination shall be at least 300 lux at the floor level of the Coach and not less than 500 lux at seating positions. Lighting intensity requirements inside coaches shall also comply with EN13272.	Justification: Bidder would like to inform that lux of more than 500 will lead to increase in power consumption of up to 50%. Accordingly, in line with other projects including ARE03A bidder request to amend this requirement. Amendment: The saloon interior lighting intensity shall be uniformly distributed. The level of illumination shall be at least ~~300~~ **200** lux at the floor level of the Coach and not less than ~~500~~ **300** lux at seating positions. Lighting intensity requirements inside coaches shall also comply with EN13272.	Tender Condition Prevails.

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43	Part 2 Section VIA (ERTS – RS)	19.20.5	The rubber flooring material shall comply with FS-SS-T-312 and the flame and smoke test requirements of clause 19.61.	Justification: Bidder would like to inform that we will follow EN 45545-2 for flame and smoke test in line with global standard. It is equivalent to FS-SS-T-312. Amendment: The rubber flooring material shall comply with **EN 45545-2 or** FS-SS-T-312 and the flame and smoke test requirements of clause 19.61.	Please refer Clause 1.2.4. Tender condition prevails.
44	Part 2 Section VIA (ERTS – RS)	3.10.1.1	The semi-permanently coupled cars connection shall be capable of transmitting the peak carloads, including the loads generated under the collision scenarios noted in clause 3.14.10.2, without permanent deformation.	Justification: Bidder would like to inform that any deformation will be managed within the allowable values for C-II category of vehicles as defined in EN15227. Amendment: The semi-permanently coupled cars connection shall be capable of transmitting the peak carloads, including the loads generated under the collision scenarios noted ~~in clause 3.14.10.2, without permanent deformation~~. **C-II category vehicle from EN 15227, any deformation shall be within the requirements as per EN 15227.**	Tender Condition Prevails.
45	Part 2 Section VIA (ERTS – RS)	11.4.11 (d)	Hydraulic dampers of suitable capacity shall be provided symmetrically to control and limit the vertical and lateral oscillation of the car body. The damping factors are to satisfy this provision. The damping factor in vertical mode, by wedge test, when tested using a wedge of 18 mm thickness should be between 0.20 and 0.25. The damping factor in lateral mode when measured by quick release side pull test should be between 0.30 and 0.40. Suspension will not be considered acceptable if maximum acceleration and spring displacements do not decay within 2-3 cycles. No leakages of any kind shall be permitted. The design life of the dampers shall be minimum 10 years.	Justification: No specific requirement in EN 14363 for the Side Pull Test (To validate the Damping Factor). Moreover, intent of the Side Pull Test is already covered in RDSO defined Tests. Acceleration & Ride Comfort Test will cover the Lateral Damping effect. Accordingly, bidder proposes to remove the Side Pull test requirement. Amendment Requested: Hydraulic dampers of suitable capacity shall be provided symmetrically to control and limit the vertical and lateral oscillation of the car body. The damping factors are to satisfy this provision. The damping factor in vertical mode, by wedge test, when tested using a wedge of 18 mm thickness should be between 0.20 and 0.25. ~~The damping factor in lateral mode when measured by quick release side pull test should be between 0.30 and 0.40~~. Suspension will not be considered acceptable if maximum acceleration and spring displacements do not decay within 2-3 cycles. No leakages of any kind shall be permitted. The design life of the dampers shall be minimum 10 years.	Tender Condition Prevails.
46	Part 2 Section VIA (ERTS – RS)	11.4.18.3 (c)	ΔQ / Q for track twist (Testing method & test condition with track twist values shall be in accordance with EN14363 Method 3)	Justification: Bidder would like to inform that for ΔQ / Q the track twist values as per CMRL track maintenance data values shall be considered in accordance with EN14363 Method 3 in line with ARE03A and other Indian projects. Amendment Requested: ΔQ / Q ~~for track twist (Testing method in accordance with EN14363 Method 3 and Track twist values as per ERTS values.)~~ **(Testing method & test condition with track twist values shall be in accordance with EN14363 Method 3).**	Tender Condition Prevails.
47	Part 2 Section VIA (ERTS – RS)	11.5.1 (f)	Longitudinal forces between car body and bogies shall be considered according to the rules in UIC 615-1, clause 4.2, or JIS E 4207. The bogie frames including vehicle body-bogie connecting gear shall be able to withstand a longitudinal shock load of 5g without failure. This shall be taken as occurring simultaneously with the fully laden vertical load. The Contractor shall validate these requirements by test.	Justification: Bidder would like to inform that our design follows EN13749 for loads on attachments. As per EN13749, Longitudinal Shock load of 3g for Motor Bogie & 5g for Trailer Bogie. UIC 615-1 primarily implies to loads on Bogie Frames for structural strength. Amendment Requested: Longitudinal forces between car body and bogies shall be considered according to the rules in UIC 615-1, clause 4.2, or JIS E 4207 or EN13749. The bogie frames including vehicle body-bogie connecting gear shall be able to withstand a longitudinal shock load of ~~5g~~ **3g for Motor Bogie & 5g for the Trailer Bogie as per EN13749 without failure, implies Ultimate Strength as acceptance criteria.** This shall be taken as occurring simultaneously with the fully laden vertical load. The Contractor shall validate these requirements by test.	**Refer Addendum Sl. No. 32**
48	Part 2 Section VIA (ERTS – RS)	11.5.3 (d)	The gearbox shall be subjected to a test based on the actual duty cycle on a specified corridor with the specified torque and speed conditions. Testing shall start with gearbox at temperature of at least 45ºC ambient + 10ºC proximity effect and temperature shall be continuously monitored. The temperature shall not exceed the manufacturer's recommendations consistent with life between oil changes. Test shall be carried out in both the directions. Noise and vibration test shall also be performed along with this test. The Contractor shall submit a Test Procedure based on international practice for approval by the CMRL.	Justification: Bidder would like to inform that it is an internationally accepted practice to substitute the actual duty cycle with accelerated rig duty cycle. Performance on this rig duty cycle ensures the performance on specified corridor, as rig duty cycle shall be selected with worst conditions of loads on gearbox. Gearbox is also tested, separately, for high temperature operation test at an ambient of 56°C. Test report shall include high temperature operation test results also. With the combination of high temperature operation test at 56°C & fatigue test at an ambient temperature of 20°C can confirm the suitability of gearbox for the application. Noise and vibration test requires separate setup so these testes shall also be performed on a suitable test setup. Amendment Requested: The gearbox shall be subjected to a test equivalent to or more severe than the actual duty cycle on a specified Corridor with the specified torque and speed conditions. **Also additionally a test shall be done on gearbox to ensure performance at an ambeint of 45ºC.** ~~Testing shall start with gearbox at temperature of at least 45ºC ambient +~~ 10ºC proximity effect and temperature shall be continuously monitored. The temperature shall not exceed the manufacturer's recommendations consistent with life between oil changes. Test shall be carried out in both the directions. Noise and vibration test shall also be performed **on a suitable test setup in a separate test** ~~along with this test~~. The Contractor shall submit a Test Procedure based on international practice for approval by the CMRL.	Tender Condition Prevails.
49	Part 2 Section VIA (ERTS – RS)	13.7.1.14.2	Each DRMD unit shall be a single display screen with a stretched aspect ratio. The minimum screen size shall be at least 48 inches corner to corner. The use of multiple screens joined together shall not be accepted.	Justification: Bidder would like to request to keep the requirement in line with other projects like DMRC RS17, ARE03A etc. so that the proven standard product can be used. Amendment Requested: Each DRMD unit shall be a single display screen with a stretched aspect ratio. The minimum screen size shall be at least **48 37** inches corner to corner. The use of multiple screens joined together shall not be accepted.	Tender Condition Prevails.

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
50	Part 2 Section VIA (ERTS – RS)	13.7.1.14.11	Internal Electronic Destination Display (IEDD) There shall be displays on both ends of non-driving cars and at gangway end of driving cars just above the gangway of the Car. The programmable display shall be capable of displaying the next station destination in Tamil & English language along with other graphic. The minimum size of the display screen shall be 36 inches corner to corner. The location and specification shall be submitted for CMRL approval.	Justification: Bidder would like to inform that there is not sufficient space available above gangway to accommodate 36" IEDD. Accordingly we request to keep the requirement in line with other projects like ARE03A so that the proven standard product can be used. Amendment Requested: Internal Electronic Destination Display (IEDD) There shall be displays on both ends of non-driving cars and at gangway end of driving cars just above the gangway of the Car. The programmable display shall be capable of displaying the next station destination in Tamil & English language along with other graphic. The minimum size of the display screen shall be ~~36~~ **16** inches corner to corner. The location and specification shall be submitted for CMRL approval	Tender Condition Prevails.
51	Part 2 Section VIA (ERTS – RS)	13.7.1.16.1	6 no's of LCD with LED backlit displays (or superior technology) shall be provided inside each coach. Screens shall be at least 27 inches corner to corner and 16:9 aspect ratio. Display locations and specification shall be submitted for CMRL approval.	Justification: Bidder would like to request to keep the requirement in line with other projects like DMRC RS17, ARE03A etc. so that the proven standard product can be used. Amendment Requested: 6 no's of LCD with LED backlit displays (or superior technology) shall be provided inside each coach. Screens shall be at least ~~27~~ **21** inches corner to corner and 16:9 aspect ratio. Display locations and specification shall be submitted for CMRL approval.	Tender Condition Prevails.
52	Part 2 Section VIA (ERTS – RS)	13.10.12	PEI devices shall include microphones, loud-speakers and an alarm button. A low level / forward facing CCTV camera (tamper proof type) shall be located near to each PEI device to deter misuse. The car CCTV System shall automatically select cameras within the specific area of an alarm activated PEI device and display images in OCC, BCC, DCC and on TCMS screens.	Justification: Bidder would like to inform that anyhow nearest camera will zoom in and cover the entire area when the PEI is pressed. Hence, we request to amend this requirement. Amendment Requested: PEI devices shall include microphones, loud-speakers and an alarm button. ~~A low level / forward facing CCTV camera (tamper proof type) shall be located near to each PEI device to deter misuse.~~ The car CCTV System shall automatically select cameras within the specific area of an alarm activated PEI device and display images in OCC, BCC, DCC and on TCMS screens.	Tender Condition Prevails.
53	Part 2 Section VIA (ERTS – RS)	1.4.5	During the complete fleet operation conditions of this project, the trains may travel an average of 1,50,000 km per year. ……	Bidder request to add the following at the end of this clause: In case the train mileage exceeds 1,50,000 km per year, additional 2% of the applicable maintenance fee for the year shall be payable for every increase in 5,000 km.	Tender Condition Prevails.
54	Part 2 Section VIA (ERTS – RS)	15.16.12	The training of CMRL personnel off-shore shall include direct exposure to CMRL Technicians, Inspectors and staff in actual repair, maintenance and overhaul of similar cars in the Depots and Workshops of an operational Mass Rapid Transit System.	The Contractor will provide off-shore training. However the expense for travel and boarding/lodging shall be borne by CMRL. Please confirm.	The bidder shall refer to ERTS Clause 15.6.10 Tender Condition Prevails.
55	Part 2 – Section VI C: - CMC of RS & DM&P	1.1.9	Designated Depot(s) collectively refers to (i) Semmancheri Depot (ii) Madhavaram Depot and (iii) an additional Satellite Depot. Whereas, the RS Maintenance Depot specifically refers to the principal depot site that will be allocated for the undertaking major fleet maintenance activities on the ARE04A fleet throughout the CMC Period. The location will be confirmed by CMRL before Contract award. Other Designated Depot sites (E.g. those not nominated as the RS Maintenance Depot) shall be allocated for the undertaking of light maintenance activities; such as inspection, cleaning and corrective maintenance.	It is requested to have only one Principal depot for undertaking all maintenance activities on the ARE04A fleet throughout the CMC Period. This will enable to have optimized staffing and material management for the CMC obligation under this contract. Accordingly it is requested to modify this clause as following: Designated Depot(s) collectively refers to (i) Semmancheri Depot ~~(ii) Madhavaram Depot and (iii) an additional Satellite Depot~~. Whereas, the RS Maintenance Depot specifically refers to the principal depot site that will be allocated for the undertaking applicable maintenance activities on the ARE04A fleet throughout the CMC Period. ~~The location will be confirmed by CMRL before Contract award.~~ ~~Other Designated Depot sites Satellite depot (E.g. those not nominated as the RS Maintenance Depot) shall be allocated for the undertaking of light maintenance activities; such as inspection, light cleaning and issuing fitness certificate corrective maintenance.~~	It is clarified that throughout the CMC Period, CMRL shall only ever allocate one (1) depot at any one time to be the "RS Maintenance Depot" for undertaking major maintenance activities. Tender Condition Prevails.
56	Part 2 – Section VI C: - CMC of RS & DM&P	1.1.10	CMRL may at its sole discretion instruct the Contractor (by giving 60 days' notice) to deploy their maintenance operations to an alternative Designated Depot facility (on an interim or permanent basis) at any time during the CMC Period. The Contractor shall comply with the deployment / redeployment request without any cost implications to CMRL.	As requested above for Clause 1.1.9, it is requested to allot only 1 principle depot. This will enable to have optimized staffing and material management for the CMC obligation under this contract. May please modify this clause accordingly.	It is clarified that the number of occasions that the Contractor is asked to relocate its maintenance operations shall not exceed ONE (1) occasion throughout the CMC Period. Tender Condition Prevails.
57	Part 2 – Section VI C: - CMC of RS & DM&P	1.2.3	The Contractor accepts that granting of consent to remove assets from the depot may be contingent on the Contractor increasing the Performance Security amount (equal to the full replacement value) or otherwise providing an alternative form of security as agreed by CMRL.	We request to remove this clause as Performance Security for CMC is already required to be submitted by the Contractor as per the tender requirements.	Tender Condition Prevails.
58	Part 2 – Section VI C: - CMC of RS & DM&P	1.7.1 & 1.7.2	1.7.1 Unscheduled Maintenance refers to any maintenance or repair activity required to be undertaken on a CMC Asset which would not ordinarily be scheduled in accordance with Scheduled Maintenance Programme. 1.7.2 Reasons which may give rise to a requirement for "Unscheduled Maintenance" includes, but is not limited to a Fault, unsatisfactory performance, defects, deficiencies, accident, vandalism, natural calamity, fire, riots, arson or negligence.	Maintenance contractor can't cover these kind of A&V losses In Insurance. These losses coverage can be provided by Insurer's only to O&M Operators in the Insurance Market. So we request the customer to re-look into these yellow highlighted points which makes huge liability on " Maintenance Contractor" (since no insurance cover readily available for these risks in India, for Maintenance contractors) So it is requested to modify this clause as: "Reasons which may give rise to a requirement for "Unscheduled Maintenance" includes, but is not limited to a Fault, unsatisfactory performance, defects, deficiencies, ~~accident, vandalism, natural calamity, fire, riots, arson or negligence."~~ **Further for "Unscheduled maintenance" arising due to Accident and Vandalism, the same shall be rectified by contractor against reimbursement of additional costs through a Variation Order.**	It is clarified that the Contractor is not expected to cover the Employer's A&V risk under the scope of their insurance. Cost apportionment for unscheduled maintenance depends on the scenario and was already defined in Part 2 – Section VI C: - CMC of RS & DM&P Cause 1.7.12 This Clause has been modified in **Addendum Sl. No. 64** in order to provide more clarity on the demarcation of A&V risk.
59	Part 2 – Section VI C: - CMC of RS & DM&P	1.8.4	PREB Team personnel shall also be trained in the use of the Relief and Rescue Vehicle (RRV) and it's onboard Re-railing & Rescue Equipment (RRE). They shall be appropriately trained and also be equipped with any other maintenance tools, special tools required to facilitate recovery of failed trainsets.	We request that operation of RRV on road/rail shall be excluded from the scope of Maintenance Contractor. Our scope shall be limited to re-railing of de-railed bogie and thereafter the rescue of the train on self-power/another healthy train shall be carried out by CMRL's operation team.	Tender Condition Prevails.
60	Part 2 – Section VI C: - CMC of RS & DM&P	3.4.2	The Contractor's Operational staff shall be available at the premises of the designated Depot(s) round the clock. The price towards the operation of Depot Machinery & Plant is deemed to have been included in quoted price.	It is requested to allow Contractor to maintain the rolling stock as one principal depot only and hence the Contractor's Operational staff shall be available at one principal depot only. Accordingly we request you to modify this clause as: The Contractor's Operational staff shall be available at the premises of the Principal Depot~~(s) round the clock~~. The price towards the operation of Depot Machinery & Plant is deemed to have been included in quoted price.	**Refer Addendum Sl. No. 70**

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<tr><td>61</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>2.7.7 v)</td><td>The Contractor shall ensure a sufficient number of RRV / RRE trained personnel are always available, on all shifts for prompt attendance of any incident.</td><td>It is requested to modify this requirement as the Maintenance Contractor shall be responsible only to operate RRE for re-railing of bogie. The RRV shall be driven by CMRL. Hence we request to modify this clause as under:
The Contractor shall ensure a sufficient number of ~~RRV /~~ RRE trained personnel are always available, on all shifts for prompt attendance of any incident. The RRV shall be operated by CMRL.</td><td>Tender Condition Prevails.</td></tr>
<tr><td>62</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>3.2.1(a)
Failure Classification: (a)Type1/ Service Failure</td><td>Failures that result in a service operational delay of a specific train for more than 2 minutes at any location of the mainline or during induction from depot to the mainline of CMRL Phase 2 Network. This category of failures also includes an unscheduled withdrawal of a trainset from revenue service ……..</td><td>We request to consider the delay time of 3 min for service affecting failure in-line with other Metro project in India.
Bidder requests to modify the clause as follows:
Failures that result in a service operational delay of a specific train for more than ~~2~~ 3 minutes at any location of the mainline ~~or during induction from depot to the mainline~~ of CMRL Phase 2 Network. This category of failures also includes an unscheduled withdrawal of a trainset from revenue service ……</td><td>Tender Condition Prevails.</td></tr>
<tr><td>63</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>18.13.2.2 & 18.13.2.8</td><td>The Contractor shall arrange its own furnishing, security etc. Charges for the electricity consumption shall be payable by the Contractor at the prescribed rates.

The Contractor shall arrange at his own cost all Site services necessary and appropriate for the assembly, testing and commissioning of trains, which shall include, but not necessarily be limited to:
(i)Electricity at site area (other than traction and inside the shed).
(ii)Compressed air.
(iii)Communication facilities and
(iv)Instrumentation.</td><td>It is requested to provide electricity free of cost for the complete duration of the Maintenance Contract.
Please confirm.</td><td>Refer Addendum Sl. No. 53</td></tr>
<tr><td>64</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>18.13.2.9</td><td>The Contractor shall be responsible for making applications or requests to the concerned Authorities for availing of the above facilities. In the event that electricity or water supplies are arranged by another Designated Contractor in the Designated Depot(s) area, the Contractor may avail himself of those supplies from the Designated Contractor, either directly on agreed terms and conditions. The Contractor shall comply with all regulations of the utility companies and Government departments concerned.</td><td>It is requested to provide electricity and water free of cost for the complete duration of the Maintenance Contract.
Please confirm.</td><td>Refer Addendum Sl. No. 55</td></tr>
<tr><td>65</td><td>Part 2
Section VIA
(ERTS – RS)</td><td>2.4.40</td><td>Ground-based hot axle box detection for monitoring of axle box temperature shall be provided in mainline by Rolling Stock Contractor and shall be installed specific to each corridor. The ground equipment shall be provided by RS Contractor. The server for storage of the information shall be placed by RS Contractor at the nearest station's Telecom Equipment Room. This ground based hot axle detection system shall be integrated with RTR-DMS by the RS Contractor. The communication network path from the station server to the OCC shall be provided by the STC Contractor. The power from UPS as well as network cabling from the equipment to the Signalling network switch is the responsibility of the RS Contractor.</td><td>(i)We request you to please clarify if HABD supply is under Contractor's scope.
(ii)If HABD supply is under contractor scope, please clarify the quantity of HABD as this train will be running in two corridoors.</td><td>Refer Addendum Sl. No. 58</td></tr>
<tr><td>66</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>3.3.1 (f)</td><td>Availability shall be asses $\%Availability = 1 - \left(\frac{DT(SC)+DT(OPM)+DT(CM)}{Total\ Time}\right) * 100$
Total Time Where:
i)Total Time is the time in hours during the assessment period multiplied by the total number of trains of the fleet.
ii)DT (SC), or Down Time due to service checks, is the total down time in hours due to service checks summed over all the trains during the assessment period.
iii)DT(OPM), or Down Time due to Other Preventive Maintenance, is the total down time in hours due to Preventive Maintenance other than service checks, summed over all sessions carried out on all trains during the assessment period.
iv)DT (CM), or Down Time due to Corrective Maintenance, is the total down time in hours due to corrective maintenance or retrofit modifications in trains, summed over all sessions carried out on the trains in revenue operation during the assessment period. Any unreasonable delay in handing over the train for repairs for reasons not attributable to the Contractor shall be excluded. Time spent on train integrity inspections after train reformations arising from corrective maintenance work shall be included.
v)Not used.
vi)DT(CM) shall be counted starting from the moment when the defective train is handed over to the Contractor and shall end when the train is restored to service condition.
The down times DT (SC), DT (OPM) and DT (CM) shall also cover the full content of the maintenance work concerned, including safety precautions, inspections, servicing, replacement of equipment, defect detection and rectification, testing and restoration to service condition.</td><td>It is proposed to delete this clause for Availability assessment as alternate Availability target has been defined at Clause 3.3.3 a).
Please confirm.</td><td>Refer Addendum Sl. No. 69</td></tr>
<tr><td>67</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>3.3.3 a)</td><td>The availability of trains shall generally be more than 95% during CMC Period.</td><td>It is proposed to revise the availability target in line with recent Indian Metro tenders as follows:
The availability of trains shall generally be more than 90% during CMC period.</td><td>Tender Condition Prevails.</td></tr>
<tr><td>68</td><td>Part 2 – Section VI C: - CMC of RS & DM&P</td><td>3.3.5 iv)Table 3-5</td><td>Table 3-5: RS Service Affecting Failure
<table><tr><th>SL No.</th><th>Conditions</th><th>Penalty / Damages per incident (Figures in INR)</th></tr><tr><td>1</td><td>Passenger De-boarding & Train withdraw in mid-section due to train immobilization</td><td>20,00,000</td></tr><tr><td>2</td><td>Passenger De-boarding & Train withdrawn at station due to train immobilization</td><td>15,00,000</td></tr><tr><td>3</td><td>Passenger De-boarding at any Station, but train not immobilized</td><td>1,00,000</td></tr><tr><td>4</td><td>Train withdrawn at terminal Station during Peak Hour</td><td>20,000</td></tr><tr><td>5</td><td>Train withdrawn at terminal Station during Non-Peak Hour</td><td>10,000</td></tr><tr><td>6</td><td>>2 minutes ≤5 minutes (Trip Delay)</td><td>10,000 per trip delay</td></tr><tr><td>7</td><td>>5 minutes</td><td>20,000 per trip delay</td></tr><tr><td>8</td><td>Trip Cancellation</td><td>75,000 per trip cancellation</td></tr></table>Note:
1. Penalty / Damage figures shall prevail for the entire CMC Period.
2. Where a failure arising on a single trainset causes scenarios 1 – 5 to occur on multiple Trainsets; only one penalty shall be imposed on the Contractor derived by the scenario attracting the highest penalty amount.
3. Delays shall be calculated according to the time deviation from Timetable recorded at the destination station (one-way trip). CMRL judgement shall be final and binding on the RS Contractor.
4. In case of partial trip cancellation, penalty corresponding to 8 of table 3-5 shall be applicable on pro-rata basis.
5. The damages mentioned above are calculated on a per train incident basis and shall be recovered by deduction from the certified payment amount for Price Center RS-CMC.
6. Escalation of 5% compounded annually shall be applicable for the figures mentioned under Penalty / Damages from the Commencement date of the Contract.</td><td>It is requested to modify the penalty in line with recent Indian Metro tenders as follows:
Table 3-5: RS Service Affecting Failure
<table><tr><th>Sl. No</th><th>Condition</th><th>Penalty / Damage</th></tr><tr><td>1</td><td>Passenger deboarding in mainline</td><td>15 Lakhs</td></tr><tr><td></td><td>Trip Delay/Cancellation</td><td></td></tr><tr><td>2.1</td><td>> 2 minutes <=5 minutes(Trip Delay)</td><td>10000</td></tr><tr><td>2.2</td><td>> 5 minutes (Trip Cancellation)</td><td>75000</td></tr></table>Note:
1.Penalty/Damage figures as indicated above are for first year of train operation. From 2nd Year onwards these figures shall be escalated as per Price Adjustment stipulated under Clause 2: Schedule of Adjustment Data, Table D, Part 1, Section- IV , Bidding Forms.
2.Delay/Cancellation shall be recorded from the Time Table as noted at the destination station for one-way trip. CMRL's decision shall be final and binding on RS contractor in this regard.
3.Where both penalty scenarios 1 and 2.2 occur together, higher of the 1 and 2.2 of Table 3-5 shall be applicable.
4.Where both penalty scenarios 2. 1 and 2.2 occur together, penalty corresponding to higher of 2.1 & 2.2 of Table 3-5 shall be applicable.
5.In case of partial trip cancellation, penalty corresponding to 2.2 of Table 3-5 shall be applicable on pro-rata basis.
The damages mentioned above are damages per train and are in INR.
Stabilization period of 12 months for each train shall be provided for failures mentioned under 2.1 and 2.2 of Table 3-5. damages shall be applicable only on the failed train and any consequential damages on subsequent trains are not applicable.</td><td>Tender Condition Prevails.</td></tr>
</table>

ARE04A Contract - Reply to Bidder Queries

Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
69	Part 3, Section - VIII Part A	Cl. 14.2	Interest bearing Mobilization Advance to a maximum of 10% of the Accepted Contract Amount (Excluding Provisional Sum) excluding taxes & duties is payable in INR only. The Rate of Interest shall be 13.5% per annum. Mobilization advance shall be paid in two equal instalments.	Bidder requests for interest free advance for both instalments in line with the CMRL Phase-II (78 Cars) order under execution. Also request you that advance should be payable in respective currencies as awarded in the contract. Accordingly, request you to modify the clause as follow: "Interest ~~bearing~~ **free** Mobilization Advance to a maximum of ~~10%~~ **15%** of the Accepted Contract Amount (Excluding Provisional Sum) excluding taxes & duties is payable in ~~INR only~~. **respective currencies as awarded in the contract**. ~~The Rate of Interest shall be 13.5% per annum.~~ Mobilization advance shall be paid in two ~~equal~~ instalments **10% as 1st Instalment and 5% as 2nd Instalment.**"	**Refer Addendum Sl. No. 72**
70	Part 3, Section - VIII Part A	Cl. 14.2	Replace first paragraph of Sub-Clause 14.2 with the following: The Employer shall make an interest-bearing advance payment for mobilization when the Contractor submits a guarantee in accordance with this sub-clause. This guarantee shall be in the form of BG for 110% of the advance amount requested plus GST (in parlance with CVC guidelines) as per format given in the Annex to PCC from a Public sector bank (PSB) of India or Scheduled Commercial Banks in India. GST on the mobilization advance is not reimbursable. The total advance payment and the applicable currencies and proportions shall be as stated in Contract Data. Mobilization advance shall be paid in two equal instalments as mentioned below: The First instalment of the Advance Payment may be paid after: (i) the Contract Agreement is signed; and (ii) the required Bank Guarantee in the specified format from banks as mentioned above is submitted. The Second & final instalment of the Advance Payment may be paid after: (i) the required Bank Guarantee in the specified format from banks as mentioned above is submitted (ii) the evidence for satisfactory utilization of the First instalment of mobilization is submitted; and (iii) acceptance of 3D virtual models.	We request to limit the BG amount against the mobilization advance to the 100% of the advance amount. Accordingly the clause may be modified as below: … This guarantee shall be in the form of BG for ~~110%~~ **100%** of the advance amount requested ~~plus GST~~ (in parlance with CVC guidelines) as per format given in the Annex to PCC from a Public sector bank (PSB) of India or Scheduled Commercial Banks in India… Further we also request you to please modify the clause for Second Instalment as below: The Second & final instalment of the Advance Payment may be paid after: (i) the required Bank Guarantee in the specified format from banks as mentioned above is submitted (ii) the evidence for satisfactory utilization of the First instalment of mobilization is submitted; ~~and (iii) acceptance of 3D virtual models.~~	Tender Condition Prevails.
71	Part 3, Section - VIII Part A	Cl. 14.2 (b)	the amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents	Bidder request to release the payment within 30 days from the invoice which enable bidder to fulfil the obligation with project stakeholders.	Tender Condition Prevails.
72	Part 3, Section - VIII Part A	Part A, Table 1.1	Key Date - Rolling Stock	Bidder request to allow delivery of trainsets individually instead of lots so that transportation of the trains can be planned better and at regular intervals.	It is clarified that existing Tender Conditions will not prevent CMRL from settling interim payment requests submitted by Contractor that are structured on a train by train basis. Tender Condition Prevails.
73	Part 3, Section - VIII Part B	4.4	Subcontractors Where the Contractor had proposed more than One (1) Subcontractor the Employer / Engineer reserves the right to choose the vendor and/or Subcontractor from the proposed list.	Bidder reserves the right to select subcontractor for smooth execution of project subject to sub-contractor meeting the Eligibility criteria specified in the tender. Bidder shall submit the list of proposed suppliers for customer approval.	Tender Condition Prevails.
74	Part 3, Section - VIII Part B	11.3	Replace sub-clause 11.3 with the following: The Employer shall be entitled subject to Sub-Clause 2.5 [Employer's Claims] to an extension of the DNP for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) (a) Does not meet the reliability targets set in Part 2, Section VI A, ERTS-RS clause 18.6. Train / System / Sub-system level extension of DNP will be applicable in the case where the reliability targets defined in ERTS 18.6 are not met. In case of any retrofits or modifications done by the Contractor or their sub-supplier in any specific system / sub- system / function / component / software of any train or spares, this specific system / sub-system / function / component / software shall be subjected to 24 months warranty from the date of completion of retrofit / modification in that train or spares. This is in order to mitigate any issues that would arise due to the retrofit / modification. This specific 24 month warranty is irrespective of the train DNP / warranty	Deleting cap on DLP extension clause would make Contractor Defect liability unlimited which would not be possible for any bidder to account for any such liability. In this regard, request CMRL to keep cap on extended DLP, in line with GCC clause below: "….the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired"	Tender Condition Prevails.
75	Part 3, Section - VIII Part B	17.6	The total liability of the Contractor to the Employer, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Employer's Equipment and Free Issue Material], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the following sums: 1) Limitation of Liability During the Project Period = Accepted Contract Amount – Less [Price Centre 'RS-CMC'] 2) Limitation of Liability During the CMC Period = Price Centre 'RS-CMC'	**Limitation of liability** for Comprehensive Maintenance Contract **should be limited to yearly contract value** as per the internationally accepted practice. Also, maintenance is a rolling activity and hence the **liability cap** should be related to the year in which it is carried out. Requested modification "The total liability of the Contractor to the Employer, ..., shall not exceed the following sums: 2) Limitation of Liability During the CMC Period = **proportionate Annual Contract value of RS-CMC**	Tender Condition Prevails.
76	General		BOCW applicability	We request CMRL to confirm whether BOCW cess of 1% to be considered only on services/installation portion or on full contract value.	For avoidance of any doubt, the Contractor shall be fully responsible for any BOCW liability and the Employer shall be fully indemnified of the same. The Contractor may assess the applicability of BOCW on the CMC portion of the Works based on the prevailing Statutory Compliance requirements.
77	Part 3, Section - VIII Part A	Part A, Table 1.1	Table: Summary of Sections (Key Date) A. Delay Damages for Non-achievement of Main Key Dates	We request CMRL to wave-off/refund the LD deducted for interim Ld's if the Bidder is able to achieve the final KD within the time frame as stipulated in Contract	Tender Condition Prevails.

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
78	Part 3, Section - IX	Clause 2	The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement along with schedules shall prevail over all other Contract documents. a) The Letter of Acceptance (LoA) vide CMRL letter No. [insert Letter No.] dated [insert letter dated]. b) The Letter of Acceptance (LoA) accepted by the Contractor. c) Post bid clarification and responses. d) Letter of Technical Bid and Letter of Price Bid. e) Addendum / Corrigendum to Tender. f) Pre-bid queries and responses. g) the Particular Conditions – Part A (Contract Data). h) the Particular Conditions – Part B (Specific Provisions). i) the General Conditions. j) Employer's Requirements – Technical Specifications. k) Pricing Document & Financial Bid. l) Instruction to Bidders (ITB), Bid Data Sheet (BDS), Bidding Procedures and other Forms. m) Any other documents forming part of the contract.	1. Please note that there are no schedules attached to the contract agreement. Please confirm which are those specific schedules which will take priority over all other documents. 2. The Section is called Annex to Particular Conditions - Contract Forms. In these Annexs, Annex 7 is called "Schedule" which does not mean schedule to contract agreement unless it is expressly referenced as such. Requested modification "This Agreement shall prevail over all other Contract documents"	**Refer Addendum Sl. No. 76**
79	Part 3, Section - VIII Part B	Clause 1.5	The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence: (a) the Contract Agreement along with schedules. (b) the Letter of Acceptance (LoA). (c) Letter of Technical Bid and Letter of Price Bid. (d) Addendum / Corrigendum to Tender. (e) the Particular Conditions – Part A (Contract Data). (f) the Particular Conditions – Part B (Specific Provisions). (g) the General Conditions. (h) Not Used. (i) Employer's Requirements Technical Specifications – Rolling Stock, and Employer's Requirements Technical Specifications – Comprehensive Maintenance Contract of Rolling Stock and Depot Plant & Machinery. (j) Pricing Document & Financial Bid. (k) Reply to Bidder Queries issued by the Employer / Engineer. (l) Part 1 : Bidding Procedures. (m) The Contractor's proposal and any other documents forming part of the Contract. If an ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction	Priority of reply to bidder queries issued by Employer should be above (d) Addendum/Corrigendum. Request you to please modify accordingly.	Tender Condition Prevails.
80	Part 3, Section - VIII Part B	Clause 13.1	Quantity variation Variations may be initiated by the Engineer at any time during the performance of the Contract, either by an instruction or by a request for the Contractor to submit a proposal". Reference shall be made to Part 1 - Section IV – Bidding Forms – 'Instructions for completing the Pricing document' – Cl. 3.3 for Quantity variation conditions.	Bidder proposes to keep the quantity variation timeline as per clause 3.3 of Part 1 - Section IV – Bidding Forms – 'Instructions for completing the Pricing document 'remove this amendment i.e. "the Employer may exercise this option at anytime prior to the date that is twelve (12) months' before the scheduled date for delivery of the last trainset." Bidder would require time to plan the resources and manufacturing facility to meet the quantity variation order.	Tender Condition Prevails.
81	Part I - Section IV - Bidding Forms	3.3.1	For any increase in quantity, the Employer may exercise this option at anytime prior to the date that is twelve (12) months' before the scheduled date for delivery of the last trainset. The Contractor shall be required to supply the requested additional quantities in accordance with the existing contract terms and conditions and determined prices as detailed in Cl. 3.3.2 and Cl. 3.3.3 below and no additional amount on account of quantity variation or any other account whatsoever shall be payable to the Contractor.	The Clause says that Employer can exercise the option any time prior to "scheduled date of delivery of last trainset". Please note that the progress of the works may be delayed for any reasons not solely attributable to the contractor force majeure and therefore, Contractor may not be able to deliver all the trains (but only partial trains) to customer by the original scheduled date of delivery of last trainset as per the original Key Dates under the tender. In this case, Right to Vary must be restricted to **original scheduled date of delivery of last trainset** and not extended date of delivery in such cases.	Tender Condition Prevails.
82	Part 3, Section - VIII Part B	Clause 1.9	The Contractor shall verify the Employer's Requirements in totality and if they found any error in the Employer's requirements, those needs to be highlighted during pre-bid meeting or to raise pre-bid queries to obtain the clarifications from the Employer against with. Upon signing the contract agreement, the Contractor is sole responsible for the errors if any left. The contractor is not entitled for extension of time or cost compensation on this account if any error noticed after signing the contract agreement.	Contractor can notify for errors found in ERTS even during execution and shall have entitlement for EOT and/ or additional cost for such errors.	Tender Condition Prevails.
83	Part 3, Section - VIII Part B	Clause 20.1	20.1 A Standing Grievance Redressal Committee (SGRC)	Please delete this clause as there are adequate forums to resolve dispute between the parties.	Tender Condition Prevails.
84	Part 3, Section - VIII Part B	Clause 20.2	Appointment of Dispute Board The Contractor has to pay the entire amount (100%) of the DB and raise an invoice of 50% of such cost (Employer Share) which will be reimbursed.	Please confirm the cost to be paid to each DB members as this is unknown and undefined	Tender Condition Prevails.
85	Part 3, Section - VIII Part B	Clause 1.10	As between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor. The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall: (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works, (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor. The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Employer for purposes other than those permitted under this Sub-Clause.	For IPR, title will vest with the contractor and only a license will be granted without right to sub-license. Employer cannot sub-license or assign or transfer the IPR without the prior permission of the contractor. Please confirm your understanding on this	The Bidder's understanding is correct. Tender Condition Prevails.

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
86	Part 3, Section - VIII Part B	Clause 11.3	The Employer shall be entitled subject to Sub-Clause 2.5 [Employer's Claims] to an extension of the DNP for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) (a) does not meet the reliability targets set in ERTS clause 18.6. The Defect Notification Period of the Works or a Section, as the case may be, shall be extended until the reliability targets set in ERTS clause 18.6 is met. In case of any retrofits or modifications done by the Contractor or their subsupplier in any specific system / sub- system / function / component / software of any train or spares, these specific system / sub-system / function / component / software shall be subjected to 24 months warranty from the date of completion of retrofit / modification in that train or spares. This is in order to mitigate any issues that would arise due to the retrofit / modification. This specific 24 months warranty is irrespective of the train DNP / DLP / warranty.	In case of any retrofits or modifications done by the Contractor or their subsupplier in any specific system / sub- system / function / component / software of any train or spares, these specific system / sub-system / function / component / software shall be subjected to 24 months warranty from the date of completion of retrofit / modification in that train or spares, **provided that overall warranty shall not exceed 48 months from the date of acceptance of each respective train**	Refer to the response already provided to Bidder Query S/N 74
87	Part 3, Section - VIII Part B	Clause 17.1	The second paragraph of GC 17.1, "The Employer shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in subparagraphs (d)(i), (ii) and (iii) of Sub- Clause 18.3 [Insurance Against Injury to Persons and Damage to Property]." **are Deleted**	Request to reinsert this clause.	Tender Condition Prevails.
88	Part 3, Section - VIII Part B	Clause 13.7	Adjustments for Changes in Legislation The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract. If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to: (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and (b) payment of any such Cost, which shall be included in the Contract Price. After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.	Please confirm whether change in legislation includes changes in rates of customs duties for imports by contractor and/or sub-contractor for the Cost Centers RS-A, RS-CST, RS-FAI, RS-CPT, RS-E, RS-F and RS-H.	GCC Clause 13.7 has been cited by the bidder, however, it should be noted that this Clause is not explicitly referring to customs duties. As per Footnote-4 beneath table 4.3.2 in Part-1, Section -IV Bidding Forms the Contractor will not be able to make claim for changes in the rates of customs duty for any Price Centres other than RS-C and RS-CMC. Tender Conditions Prevail.
89	Part 3, Section - VIII Part B	Clause 14.9	Retention Money (Throughout the Project Period) Retention money shall be deducted at the rate of 5% on each Interim payment certificate (IPC), excluding taxes & duties, in respective currencies and up to the cumulative value equal to 5% of the Accepted Contract Amount (Excluding Price Centre RS-CMC, and Provisional sum), excluding taxes & duties. Release of Retention Money Against BG (Project Period) Upon the request of the Contractor, the Employer after issuance of Taking-Over certificate of each trainset may release the withheld retention money specific to that trainset, on submission of Bank Guarantee for an equivalent amount in respective currencies from a Public sector bank (PSB) of India or Scheduled Commercial Banks in India, in the format annexed to the Particular Conditions. Final Release of Retention or BG (Project Period) Upon completion of DNP of Rolling Stock, the Retention money amount or the Retention money Bank Guarantees (less the value of claims made by the Employer for uncompleted warranty work) for Rolling Stock (excluding Price Centre RS-CMC) shall be certified by the Engineer / Employer for releasing to the Contractor.	We propose to modify the clause for release of retention money against BG as follow: Upon the request of the Contractor, **the Employer** ~~after issuance of Taking-Over certificate of each trainset~~ **may release the withheld retention money** ~~specific to that trainset~~, on submission of Bank Guarantee for an equivalent amount in respective currencies from a Public sector bank (PSB) of India or Scheduled Commercial Banks in India, in the format annexed to the Particular Conditions.	Tender Condition Prevails.
90	Part-1, Section-IV	6.4 Form FIN-1 : Financial Situation	The Bidder and its parties shall provide copies of the financial statements(i) for 5 years indicated in Section III, Evaluation and Qualification Criteria Sub-Factor 2.3.1. The financial statements shall: (a) Reflect the financial situation of the legal entity(ies) comprising the Bidder or in case of JV, of each member, and not of the affiliated entities (such as parent company(ies), group companies or subsidiaries) of the Bidder unless they are parties to the Bidder under a JV in accordance with ITB 4.1. (b) Be independently audited or certified in accordance with local legislation. (c) Be complete, including all notes to the financial statements. (d) correspond to accounting periods already completed and audited. Attached herewith are copies of financial statements for 5 years required above; and complying with the requirements.	We request you to please include those cases where last year balance sheet and financial statements are unaudited. Accordingly, request you to add below subclause (e) in this clause: (e) In case the bid due date lies within the 5 months period from the end of latest FY, bidder may consider the last FY end as 1 year before the end of latest FY.	The bidder shall refer to the existing Footnote on form FIN-1. Tender Conditions Prevail.
91	Part-1, Section – III (EQC)	Clause 2.7	Purchase Preference	The clause states that purchase preference will be given to Class-I Local Supplier. However, we propose that bidder should mandatorily meet the Minimum Local Content (MLC) for Class-I Local Supplier in order to encourage more and more Localization. We request you to please accept and revised the clause accordingly.	Tender Condition Prevails.
92	Part-1, Section - II (BDS)	ITB 11.2	B. Bid Security / EMD: As per Clause BDS 21 below. Shall be Paid by eBG / NEFT / RTGS / Demand Draft / SWIFT. Electronic copy of eBG / NEFT / RTGS / DD / SWIFT to be uploaded online at the time of bid submission. If EMD is submitted in the form of Bank Guarantee, it shall be as per format given in bid documents, from a Scheduled Commercial Bank as defined in Section 2(e) of RBI Act 1934 as listed under Schedule of Commercial Banks by The Reserve Bank of India (RBI)	There are a few issues in eBG module and only one or two bank can provide it that too with some restrictions. Therefore, we request you to accept original BG in hardcopy. Scan copy of BG will be submitted during online submission and original hard copy of BG shall be submitted to the customer on or before deadline of bid submission.	Tender Condition Prevails.
93	Part-1, Section-IV	4.2 S. No.5	Price Centre RS-C: Indigenous Manufacture, Factory Testing, Inspection and Dispatch, transit insurance from factory to Depot Site. Inland Transportation of Indigenous manufactured trains within India including handling charges at depot or at any other place, and all other incidental costs, receipt of cars in depot.	We request to amend the clause as under: Price Centre RS-C: Indigenous Manufacture, Factory Testing, Inspection at Factory And Ex-works readiness.	Tender Condition Prevails.
94	Part-1, Section-IV	6.13	6.13 Form Minimum Local Content	Bidder shall submit the Form during project phase as these details would not be available at bid submission, Supplier selection during not be matured during bid stage hence the Form Minimum Local Content will be submitted along with first proto train set delivery.	Tender Condition Prevails.

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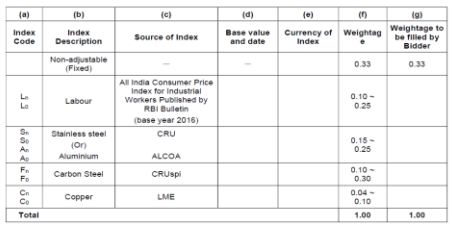
Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
95	Part-1, Section-IV	5.15	5.15 Certificate confirming Minimum Local Content Note : The bidder shall submit their declaration in Technical Bid submission. Within 10 days of last date of bid submission date details requested under Form Minimum Local Content shall be submitted to CMRL.	Bidder requests the customer to amend the submission duration to 30 days as external auditor validation is required for it and it may take time to secure it.	**Refer Addendum Sl. No. 6**
96	Part-1, Section-IV	2	 (a) / Index Code; (b) / Index Description; (c) / Source of Index; (d) / Base value and date; (e) / Currency of Index; (f) / Weightage; (g) / Weightage to be filled by Bidder – / Non-adjustable (Fixed) / – / – / – / 0.33 / 0.33 L_n L_0 / Labour / All India Consumer Price Index for Industrial Workers Published by RBI Bulletin (base year 2016) / / / 0.10 ~ 0.25 / S_n S_0 (Or) A_n A_0 / Stainless steel (Or) Aluminium / CRU ALCOA / / / 0.15 ~ 0.25 / F_n F_0 / Carbon Steel / CRUspi / / / 0.10 ~ 0.30 / C_n C_0 / Copper / LME / / / 0.04 ~ 0.10 / Total / / / / / 1.00 / 1.00	The Referred Price Variation clause is not representative of the overall cost structure of the bid. Also as you would be well aware about the fluctuation dynamics in the commodity prices & indices, it would be hard for the bidder to predict the trend during the course of the contract. Thereby request you to slightly modify the clause as below. Non Adjustable : 10% Labour : 33% CRU Stainless Steel : 10% Carbon Steel : 10% Copper LME : 7% WPI All Commodities : 30%	Tender Condition Prevails.
97	Part-1, Section-IV	3.3.2	The Price of each 3-car train-set to be supplied against Quantity Variation shall be derived from the contracted cost of the original tendered quantity, against 'RS-C', 'RS-E' and 'RS-F' (in case of indigenous supply).	Inline with other metro project like DMRC RS 17, Bangalore 5 RSDM, Bidder requests to consider the price determination formula for additional quantities . Thereby price per 3 Car Trainset shall be (90% of the Lump sum price (Rolling stock) excluding Price Centre RS-CMC) divided by 32 Train sets.	Tender Condition Prevails.
98	Part 1 - ITB Section I	Clause 7.6	Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3. Any modification to the Bidding Documents that may become necessary as a result of the prebid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting. Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder	Please confirm if the response to the pre-bid queries will form part of tender and will take precedence like addendums issued.	Replies to bidder queries will form part of the Contract Document. If any such queries had resulted in a change to the bid conditions, then the reply will usually refer to the corresponding Addendum Number. Refer to Clause 1.5 of Part 3 - Section VIII Part B, for the Order of Contractual precedence.
99	Part 1 - ITB Section I	Clause 45	Ministry of Finance, Department of Expenditure, Public Procurement Division, Government of India has issued an Order (Public Procurement No.1) on 23 July 2020 on Restrictions Under Rule 144 (xi) of the General Financial Rules (GFRs), 2017. Based on which any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority. For details refer to Part 1, Section V-A, 'Requirements of a Bidder from a Country which Shares Land Border with India'. Ministry of Finance, DoE Office Memo No.F 18 / 37 / 2020 – PPD dated 08th February 2021 regarding the import of raw materials and sub-contracting with the firms from the countries sharing land boundaries with India	The order (Public Procurement No.1) dated 23 July 202 and Office Memo No.F 18 / 37 / 2020 – PPD dated 08th February 2021 have been superseded, by way of a revised policy issued by Department of Expenditure, Public Procurement Division, Ministry of Fiannce vide OM No. F.7/10/2021-PPD dated 23.02.2023. Therefore, please replaced the text to capture the effective policy	It is clarified that any superseding order(s) coming in to effect up to 28 days prior to the last date of Bid submission shall prevail and be complied with by the Contractor. Tender Conditions Prevails.
100	Part-1, Section-IV	Clause 3.1.3	As single rate of custom duty is available under project imports scheme under heading 98.01 of Custom Tariff Act 1975 for import of capital goods, the advantage of the same may be considered under project import scheme. After award of the Contract, Employer at the written request of a Contractor shall facilitate the Contractor for obtaining sponsoring / recommendation letter from the Ministry of Housing and Urban Affairs (MoHUA) / GOI for getting themselves registered for availing Project Import benefits. However, the responsibility to avail the concessional benefits under Project Import or otherwise as extended in accordance with the law of the land shall solely rest with the Contractor.	We request CMRL to confirm – 1. Is the Project Import Registration benefit is availble to the sub contractor and supplier of the Contractor and 2. for the purpose of the Project Import Registration – Whether CMRL shall issue the sponsorship Letter to Sub contractor and supplier of the Contractor as well Also, we understand that Employer will issue required documents for claiming benefit of concessional duty under chapter 98.01 in the name of contractor and sub-contractor for imports of raw material / components by contractors & sub-contractors. Please confirm.	Tender Condition Prevails.
101	Part-1, Section-IV	Table 4.3.2	Note on Taxes / Duties / Levies Wherever Customs Duty has been blocked out as "Not Applicable" within the pricing table it is clarified that the Contractor will not be eligible to claim any reimbursement, nor can the Contractor make any adjustment claims whatsoever in the event of any future changes in law / legislation (GCC 13.7) which may affect Customs Duty rates.	Please note that any change in law in future, including customs duty, can not be ascertained and predicted by any person and therefore, passing the risk of change in law in customs duty to contractor is highly unreasonable. Also, this rule will also be made applicable for Quantity Option Trainsets which is again very onerous and unreasonable. Please allow change in law for any change in custom duties which is a direct cost to Contractor for which all adequate evidences can be furnished by the Contractor	The cited footnote only applies to the Price Centres that are marked as not applicable for customs duty. Tender Condition Prevails.
102	Part-1, Section-IV	4.2	4.2 Pricing Summary (BID TOTAL) Allowable Apportionment: Price Centre RS-C: 44.45% Price Centre RS-E: 5.6% Price Centre RS-F: 4.9%	Bidder proposes changes to allowable apportionment to following price centres as below: Price Centre RS-C: 52.85% Price Centre RS-E: 1.4% Price Centre RS-F: 0.7% As the bidder would incur most of its costs upon delivery of the train sets. Actual cost incurred for T&C (CC: E) and ITC (CC: F) are lower than the allowable apportionment mentioned in bid document, hence we request you amend the Price Center C,E,F as above.	Tender Condition Prevails.
103	Part-1, Section-IV	2 Table D	**(Applicable for INR)** ***DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E-PROCUREMENT PORTAL ONLY.*** Code / Description / Source / Weightage / Base value and date a / Non-adjustable (Fixed) / N/a / 0.20 / b / All India Consumer Price Index for Industrial Workers for Chennai (CPI-IW) / *i / 0.40 / c / Wholesale Price Index for Manufacture of Electrical Equipment (WPI-MEE) / *ii / 0.20 / d / Wholesale Price Index for Manufacture of Computer, Electronic and Optical Products (WPIMCEOP) / *iii / 0.20 / Note: *"i" – **"CPI-IW"** means the Consumer Price Index for Industrial Workers published by Labor Bureau, Government of India (Base Year 2016) and shall include any index which substitutes the CPIIW, and any reference to CPIIW shall, unless the context otherwise requires, be construed as a reference to the CPIIW published for the period ending with the preceding month.* *"ii" – **"WPI-MEE"** means the Wholesale Price Index for Manufacture of Electrical Equipment as published by Economic Adviser, Ministry of Commerce & Industry, GOI with Index Code (1317000000), Base Year 2011-12, GOI and shall include any index which substitutes the WPIMEE, and any reference to WPIMEE shall, unless the context otherwise requires, be construed as a reference to the WPIMEE published for the period ending with the preceding month* *"iii. - **"WPIMCEOP"** means the Wholesale Price Index for Manufacture of Computer, Electronic and Optical Products as published by Economic Adviser, Ministry of Commerce & Industry, GOI with Index Code (1316000000), Base Year 2011-12, GOI and shall include any index which substitutes the WPIMCEOP, and any reference to WPIMCEOP shall, unless the context otherwise requires, be construed as a reference to the WPIMCEOP published for the period ending with the preceding month.* *iv - Bidders shall submit the filled above table and include along with their Price bid and necessary proof.* *v - Bidders shall fill 'Column – base value and date' with value as on 28 days prior to last date of bid submission.*	It is requested to modify the Price adjustment formula for Price Center RS-CMC and DM&P-CMC as under: The Price Variation formula (CPA formula) below shall be applicable for INR and Foreign Currency portion to provide for variation in the market rates of inputs like labour and materials during the Contract duration: Pn = 0.50 x (Bn/Bo) + 0.50 x (Cn/Co) Where, Pn = adjustment multiplier Bn = All India Consumer Price Index for Industrial Workers (CPI-IW) (Base year 2016=100) published by Labour Bureau of Ministry of Labour & Employment, Government of India for period 'n' B0 = All India Consumer Price Index for Industrial Workers (CPI-IW) (Base year 2016=100) published by Labour Bureau of Ministry of Labour & Employment, Government of India as on 28 days prior to the date of Submission of Bid Cn = Wholesale Price Indices (WPI) for All Commodities: Base 2011-12: Published by Economic Adviser, Ministry of Commerce & Industry, Government of India for period 'n' C0 = Wholesale Price Indices for All Commodities: Base 2011-12: Published by Economic Adviser, Ministry of Commerce & Industry, Government of India as on 28 days prior to the date of Submission of Bid In case the indices indicated above, changes in composition, it shall be replaced by any index which subsequently substitutes the corresponding indices.	Tender Condition Prevails.

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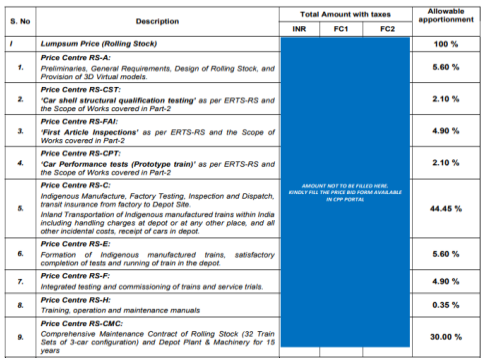
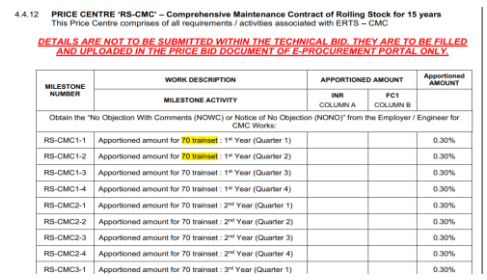
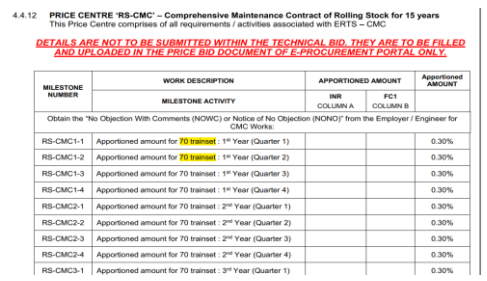
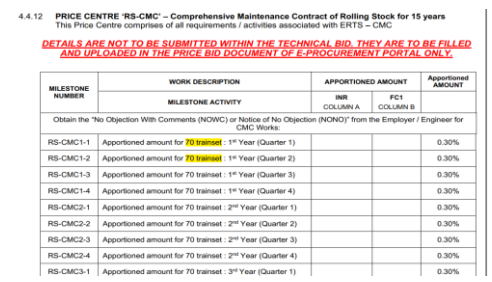
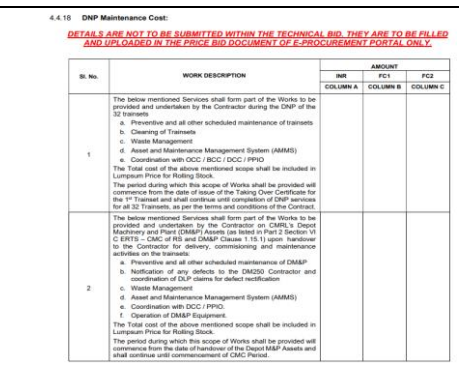
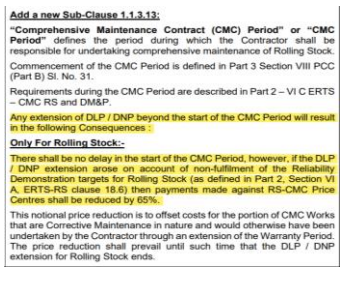
Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
104	Part-1, Section-IV	3.2.7	Price Variation / Price adjustment for Comprehensive Maintenance Contract (CMC) .... Price Adjustment towards RS-CMC is not applicable on Foreign Currencies (JPY & FC) portions.	Request to allow Price Adjustment in foreign currencies also for Comprehensive Maintenance Contract (CMC), accordingly request to modify this clause as follows: Price Variation / Price adjustment for Comprehensive Maintenance Contract (CMC) .... " Price Adjustment towards RS-CMC is applicable on INR and Foreign Currencies (FC) portions."	**Refer Addendum Sl. No. 2**
105	Part-1, Section-IV	4.2	Pricing Summary (BID TOTAL) The bidder may quote his offer in any of the following currencies or in any combination: Indian Rupees (INR) and in TWO freely convertible foreign currency (FC). The offer should be submitted in the proforma as given in Price Bid Form of e-procurement portal: ….. 	Bidder requests that the apportionment criteria for Price Centre RS-CMC shall be deleted as this shall be left open to the bidder to quote for submitting a competitive offer.	Tender Condition Prevails.
106	Part-1, Section-IV	4.2	NOTE i)Lumpsum Bid price in INR and/or in any two freely convertible foreign Currency. ii) Price centres 'CMC – RS' shall be quoted in Indian Rupees (INR) and/or in any one freely convertible foreign Currency.	Price centres 'CMC – RS' shall be quoted in Indian Rupees (INR) and/or in any two freely convertible foreign Currency.	Tender Condition Prevails.
107	Part-1, Section-IV	4.4.12	 … … … Note : i) Bidders shall quote for the above Price Centres including all taxes and duties. ii) Only One FC (Foregin Currency) is allowed for CMC works.	1.The quantity of trainset may be modified as "32 trainset". Please modify Pricing document accordingly	**Refer Addendum Sl. No. 5**
108	Part-1, Section-IV	4.4.12		It is requested to define Payment milestone on Monthly basis instead of quarterly payment.	Tender Condition Prevails.
109	Part-1, Section-IV	4.4.12		The apportionment amount for individual Milestone number for Price Centre 'RS-CMC' shall be left open to the bidder to propose year wise payment based on contactor's maintenance schedule and not the apportioned payment (which is also consistent with recent tenders like DMRC RS17). Alternatively we request to allow higher payment in the initial years (due to capital expenditure) and also in the years in which intermediate & major overhauls are falling. Please modify Pricing document accordingly.	Tender Condition Prevails.
110	Part-1, Section-IV	4.4.18		Since this is Supply cum Maintenance contract, it would be the responsibility of the Contractor to carry out preventive maintenance during the DNP phase (which generally doesn't come under the scope of RS contractor). Thereby bidder request to modify the clause as below (which is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM contracts) and shall be termed as Defect Liability and Maintenance Period (DLMP) altogether instead of separate DLP/DNP and CMC and it shall be defined as: **1."Defect Liability and Maintenance Period (DLMP) shall start after commencement of revenue service of the first train set and 15 years thereafter"** 2.Accordingly payment Milestone shall be updated along with apportionment. Accordingly, please delete this clause of DNP/DLP.	Tender Condition Prevails.
111	Part 3, Section - VIII Part B	Clause No.1.1.3.13	 **Add a new Sub-Clause 1.1.3.13:** **"Comprehensive Maintenance Contract (CMC) Period" or "CMC Period"** defines the period during which the Contractor shall be responsible for undertaking comprehensive maintenance of Rolling Stock. Commencement of the CMC Period is defined in Part 3 Section VIII PCC (Part B) Sl. No. 31. Requirements during the CMC Period are described in Part 2 – VI C ERTS – CMC RS and DM&P. Any extension of DLP / DNP beyond the start of the CMC Period will result in the following Consequences : **Only For Rolling Stock:-** There shall be no delay in the start of the CMC Period, however, if the DLP / DNP extension arose on account of non-fulfilment of the Reliability Demonstration targets for Rolling Stock (as defined in Part 2, Section VI A, ERTS-RS clause 18.6) then payments made against RS-CMC Price Centres shall be reduced by 65%. This notional price reduction is to offset costs for the portion of CMC Works that are Corrective Maintenance in nature and would otherwise have been undertaken by the Contractor through an extension of the Warranty Period. The price reduction shall prevail until such time that the DLP / DNP extension for Rolling Stock ends.	Since this is Supply cum Maintenance contract, it would be the responsibility of the contractor to carry out maintenance during the DNP/DLP and CMP phase and achievement of performance requirements(KPIs), thereby bidder request to modify the clause as below (which is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM contracts for start of CMC): "Defect Liability and Maintenance Period (DLMP) shall start after commencement of revenue service of the first train set and 15 years thereafter" Accordingly, please delete this clause	Tender Condition Prevails.
112	Part 3, Section - VIII Part B	Clause No. 4.25	Add the following Sub-Clauses to the end of Sub-Clause 4.25: 4.25.1 CMC - Rolling Stock: The Contractor is required to carry out 15 years Comprehensive Maintenance Contract (CMC) for Rolling Stock which shall commence 2 years after the TOC date of 32nd Trainset and shall end after 15 years from start. The Contractor shall provide key maintenance staff as per qualification and experience detailed under Part 2, Section VI C ERTS (CMC – RS and DM&P). Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P).	Since this is Supply cum Maintenance contract, it would be the responsibility of the contractor to carry out maintenance during the DNP/DLP and CMP phase and achievement of performance requirements(KPIs), thereby bidder request to modify the clause as below (which is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM contracts for defining start of CMC): "Defect Liability and Maintenance Period (DLMP) shall start after commencement of revenue service of the first train set and 15 years thereafter"	**Tender Condition Prevails.** **Refer Addendum Sl. No. 73**

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
113	Part-1, Section-IV	4.4.12	4.4.12 **PRICE CENTRE 'RS-CMC' – Comprehensive Maintenance Contract of Rolling Stock for 15 years** This Price Centre comprises of all requirements / activities associated with ERTS – CMC ***DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E-PROCUREMENT PORTAL ONLY.*** MILESTONE NUMBER / WORK DESCRIPTION / MILESTONE ACTIVITY / APPORTIONED AMOUNT INR COLUMN A / FC1 COLUMN B / Apportioned AMOUNT Obtain the "No Objection With Comments (NOWC) or Notice of No Objection (NONO)" from the Employer / Engineer for CMC Works: RS-CMC1-1 Apportioned amount for 70 trainset : 1st Year (Quarter 1) 0.30% RS-CMC1-2 Apportioned amount for 70 trainset : 1st Year (Quarter 2) 0.30% RS-CMC1-3 Apportioned amount for 70 trainset : 1st Year (Quarter 3) 0.30% RS-CMC1-4 Apportioned amount for 70 trainset : 1st Year (Quarter 4) 0.30% RS-CMC2-1 Apportioned amount for 70 trainset : 2nd Year (Quarter 1) 0.30% RS-CMC2-2 Apportioned amount for 70 trainset : 2nd Year (Quarter 2) 0.30% RS-CMC2-3 Apportioned amount for 70 trainset : 2nd Year (Quarter 3) 0.30% RS-CMC2-4 Apportioned amount for 70 trainset : 2nd Year (Quarter 4) 0.30% RS-CMC3-1 Apportioned amount for 70 trainset : 3rd Year (Quarter 1) 0.30%	It is requested to define Payment milestone on Monthly basis instead of quarterly payment.	Tender Condition Prevails.
114	Part-1, Section-IV	4.4.12	4.4.12 **PRICE CENTRE 'RS-CMC' – Comprehensive Maintenance Contract of Rolling Stock for 15 years** This Price Centre comprises of all requirements / activities associated with ERTS – CMC ***DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E-PROCUREMENT PORTAL ONLY.*** MILESTONE NUMBER / WORK DESCRIPTION / MILESTONE ACTIVITY / APPORTIONED AMOUNT INR COLUMN A / FC1 COLUMN B / Apportioned AMOUNT Obtain the "No Objection With Comments (NOWC) or Notice of No Objection (NONO)" from the Employer / Engineer for CMC Works: RS-CMC1-1 Apportioned amount for 70 trainset : 1st Year (Quarter 1) 0.30% RS-CMC1-2 Apportioned amount for 70 trainset : 1st Year (Quarter 2) 0.30% RS-CMC1-3 Apportioned amount for 70 trainset : 1st Year (Quarter 3) 0.30% RS-CMC1-4 Apportioned amount for 70 trainset : 1st Year (Quarter 4) 0.30% RS-CMC2-1 Apportioned amount for 70 trainset : 2nd Year (Quarter 1) 0.30% RS-CMC2-2 Apportioned amount for 70 trainset : 2nd Year (Quarter 2) 0.30% RS-CMC2-3 Apportioned amount for 70 trainset : 2nd Year (Quarter 3) 0.30% RS-CMC2-4 Apportioned amount for 70 trainset : 2nd Year (Quarter 4) 0.30% RS-CMC3-1 Apportioned amount for 70 trainset : 3rd Year (Quarter 1) 0.30%	The apportionment amount for individual Milestone number for Price Centre 'RS-CMC' shall be left open to the bidder to propose year wise payment based on contactor's maintenance schedule and not the apportioned payment (which is also consistent with recent tenders like DMRC RS17). Alternatively we request to allow higher payment in the initial years (due to capital expenditure) and also in the years in which intermediate & major overhauls are falling. Please modify Pricing document accordingly.	Tender Condition Prevails.
115	Part-1, Section-IV	4.4.18	4.4.18 **DNP Maintenance Cost:** ***DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E-PROCUREMENT PORTAL ONLY.*** Sl. No. / WORK DESCRIPTION / AMOUNT INR COLUMN A / FC1 COLUMN B / FC2 COLUMN C 1 The below mentioned Services shall form part of the Works to be provided and undertaken by the Contractor during the DNP of the 32 trainsets a. Preventive and all other scheduled maintenance of trainsets b. Cleaning of Trainsets c. Waste Management d. Asset and Maintenance Management System (AMMS) e. Coordination with OCC / BCC / DCC / PPIO The Total cost of the above mentioned scope shall be included in Lumpsum Price for Rolling Stock. The period during which this scope of Works shall be provided will commence from the date of issue of the Taking Over Certificate for the 1st Trainset and shall continue until completion of DNP services for all 32 Trainsets, as per the terms and conditions of the Contract. 2 The below mentioned Services shall form part of the Works to be provided and undertaken by the Contractor on CMRL's Depot Machinery and Plant (DM&P) Assets (as listed in Part 2 Section VI C ERTS – CMC of RS and DM&P Clause 1.15.1) upon handover to the Contractor for delivery, commissioning and maintenance activities on the trainsets: a. Preventive and all other scheduled maintenance of DM&P b. Notification of any defects to the DM250 Contractor and coordination of DLP claims for defect rectification c. Waste Management d. Asset and Maintenance Management System (AMMS) e. Coordination with DCC / PPIO. f. Operation of DM&P Equipment. The Total cost of the above mentioned scope shall be included in Lumpsum Price for Rolling Stock. The period during which this scope of Works shall be provided will commence from the date of handover of the Depot M&P Assets and shall continue until commencement of CMC Period.	Since this is Supply cum Maintenance contract, it would be the responsibility of the Contractor to carry out preventive maintenance during the DNP phase (which generally doesn't come under the scope of RS contractor). Thereby bidder request to modify the clause as below (which is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM contracts) and shall be termed as Defect Liability and Maintenance Period (DLMP) altogether instead of separate DLP/DNP and CMC and it shall be defined as: **1."Defect Liability and Maintenance Period (DLMP) shall start after commencement of revenue service of the first train set and 15 years thereafter"** 2.Accordingly payment Milestone shall be updated along with apportionment. Accordingly, please delete this clause of DNP/DLP.	Tender Condition Prevails.
116	Part-1, Section – IV	3.1.3	As single rate of custom duty is available under project imports scheme under heading 98.01 of Custom Tariff Act 1975 for import of capital goods, the advantage of the same may be considered under project import scheme. After award of the Contract, Employer at the written request of a Contractor shall facilitate the Contractor for obtaining sponsoring / recommendation letter from the Ministry of Housing and Urban Affairs (MoHUA) / GOI for getting themselves registered for availing Project Import benefits. However, the responsibility to avail the concessional benefits under Project Import or otherwise as extended in accordance with the law of the land shall solely rest with the Contractor.	We understand that Employer will issue necessary documents including sponsorship Letters for claiming benefit of concessional duty under chapter 98.01 in the name of contractor and/or sub-contractor and/or suppliers for imports of raw-material / components / spares/ tools etc. by contractors and/or sub-contractors and/or suppliers . Please confirm if our understanding is correct.	The Employer will issue a sponsorship letter in the name of the Contractor. Tender Condition Prevails
117	Part 3/Section - VIII Particular Conditions (Part A: Contract Data)	S.No. 24, Clause 18.2	24. **Maximum amount of deductibles for insurance of the Employer's risks** 18.2(d) INR 1,00,000 /-	Insurance Deductibles shall be decided by the Insurer based on various factors/conditions/nature of project/duration. Therefore, we request customer to please remove the deductibles capping here.	Tender Condition Prevails
118	Part 3/Section - VIII Particular Conditions (Part A: Contract Data)	S.No. 25, Clause 18.2	25. **Minimum amount of third party insurance** 18.3 In case of death, INR 50,00,000 per person in each case. In case of permanent disability, INR 25,00,000 per person in each case. In case of partial disability, INR 10,00,000 per person in each case. In case damage to facility, the Contractor shall be responsible for full coverage of damages without limit of occurrences. Hence, the amount shall be decided by the Contractor based on his experience.	Without capping the Max limit in the policy (i.e Unlimited Occur-rences), Insurer's doesn't provide TPL cover in India. So, we request to please provide TPL cover with 25 Crs limit per year. Please confirm.	Tender Condition Prevails
119	Part 3 : Section VIIIParticular Conditions (Part B: Specific Provisions)	S.No. 22 Clause 4.2	**Performance Security CMC - Rolling Stock:**28 days before the completion of Rolling Stock (Train level) DNP, the Contractor shall furnish CMC Performance Security for the deliverables defined in the CMC Period; in the form of a Bank Guarantee from a public sector bank (PSB) of India or Scheduled Commercial Banks in India, for an amount of 10% of Price Centre RS-CMC in the same currency(ies). The Performance Bank Guarantee for CMC shall be valid until 210 days beyond the scheduled expiry of the Rolling Stock CMC period.The Employer shall, however, p**ermit the Contractor to reduce the CMC Performance Security at every three (3) year intervals** provided the following two (2) conditions are satisfied: -....	CMC period is of total 15 years. Providing Bank Guarantee for such long period is difficult. Also, the CMC activities for each year shall be defined and priced seperately. Therefore, we request to allow submission of PBG@ 10% of the annual CMC price which may be renewed annually. We request for a performance guarantee of 10% of the annual CMC price instead of 10% of the total contract price to be renewed on annually	**Refer Addendum Sl. No. 74**
120	Part 2 – Section VI A: ERTS – Rolling Stock	16.17.6	The cost to deploy and maintain PMIS shall be recovered from the Contract Amount at a predetermined rate. A deduction rate of 0.05% of the Accepted Contract Amount shall be applied over the Contractors' running bills for all Price Centres that are applicable to the project delivery period. (E.g. there shall be no deductions applied to Price Centre RS-CMC as it is not part of the project delivery period). The scope of services procured by the recovered costs shall include software, implementation, service, training and maintenance, etc.	Bidder requests to remove this requirement of deduction on account of PMIS in line with the previous tender of 78 Cars.	Tender Condition Prevails
121	Part-1 Section-IV	Clause 4.1.29	The Contractor shall note that for ease of administration, the Employer will recover costs for the PMIS Chennai Metro Rail Project – Phase 2 Part-1, Section – IV Bid No. ARE04A Bidding Forms CMRL / Rev. 0 BF-19 Feb 2024 System (described in Part 2 Section VIA Clause 16.7) at a rate equal to 0.05% of the Contract Amount for the project period (excluding Price Centre 'RS-CMC') from a single Price Centre 'RS-C2'	We understand that there is a typo error in clause reference given here. Further, we requests to remove this requirement for deduction on account of PMIS in line with the previous tender of 78 Cars.	Tender Condition Prevails
122	Part-1, Section – II	ITB 37.1	The currency that shall be used for Bid evaluation and comparison purposes to convert all Bid Prices expressed in various currencies into a single currency is: Indian Rupees (INR)The source of exchange rate shall be: Reserve Bank of India (RBI) / Financial Benchmarks India Pvt. Ltd (FBIL) as delegated by the Reserve Bank of India vide their order no. RBI / 2018-19 / 34DBR. Ret. BC. No. 01 / 12.01.001 / 2018-19 datedAugust 02, 2018. **In case such rates are not available in the source identified above, any other publicly available source acceptable to the Employer shall be used for the evaluation.** Any error in determining the exchange rates may be corrected by the Employer. The date for the exchange rate shall be: 28 days before last date of submission of the Bid.	If we keep exchange rate source open to any publicaly available source, then every bidder may consider different exchange rate for their working. For cases where the exchange rates are not available in RBI/FBIL, we request you to please consider the rates available in www.xe.com (or any other suitable sources).	**Refer Addendum Sl. No. 1**
123	Part 2 – Section VI C: ERTS – CMC of RS & DM&P	1.8.2	The PREB team shall consist of at least 10 fully trained staff per shift who shall be strategically located throughout the network, so as to always ensure that incidents will be attended by PREB staff within 30mins of receiving a request to attend an incident.	The Contractor shall propose the PREB team staffing as per their practice. Hence it is requested to remove the requirement to have at least 10 fully trained staff per shift.	**Refer Addendum Sl. No. 65**

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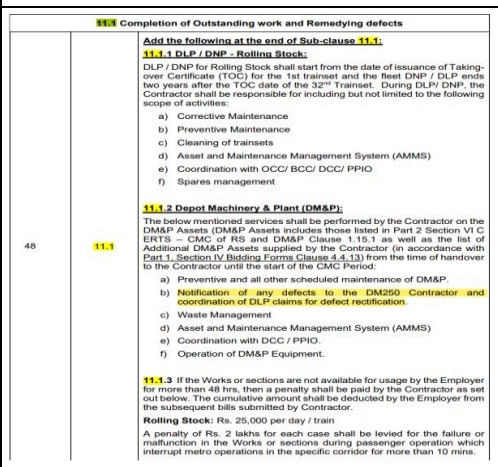
Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
124	Part 2 – Section VI C: ERTS – CMC of RS & DM&P	1.14.3 g) i)	**Chief Maintenance Manager –** with complete responsibility but not limited to delivering of all aspects of the work. Individual (must be minimum engineering graduate in Electrical/Electronics/ Mechanical) shall have at least 15 years' experience in Rolling Stock and spent at least 10 years holding a position which substantially included management of all types of Maintenance of Metro Rolling Stock, including major overhaul	As maintenance of Metro Rail being offloaded by Metro operators in India is very recent, around 2-3 year, it is tough to find person having experience of 10 years in the field of metro maintenance, bidder therefore request Employer to modify 10 years to 4 years and also allow experience of maintenance during Defect Liability period as well. Accordingly please modify this clause as below: "**Chief Maintenance Manager-**with complete responsibility but not limited to delivering of all aspects of the work. Individual (must be minimum engineering graduate in Electrical/Electronics/ Mechani-cal) shall have at least 15 years' experience in Rolling Stock and spent at least 10 4 years holding a position which substantially in-cluded management of all types of Maintenance of Metro Rolling Stock, including major overhaul/ Defect Liability period.	Tender Condition Prevails
125	Part 2 – Section VI C: ERTS – CMC of RS & DM&P	1.14.3 g) iii)	**CMC Maintenance Manager** – with responsibility not limited to developing maintenance strategy, co-ordination with planning, scheduling with OCC for Operations and DCC for Maintenance activity including preventive and corrective maintenance until the completion of CMC Period. Individual (must be minimum engineering graduate in Electrical/ Electronics/Mechanical) shall have at least 12 years' experience in Rolling Stock. Out of which at least 7 years he shall worked in Maintenance of Metro Rolling Stock……	As maintenance of Metro Rail being offloaded by Metro operators in India is very recent, around 2-3 year, it is tough to find person having experience of 7 years in the field of metro maintenance, bidder therefore request Employer to modify 7 years to 3 years and also allow experience of maintenance during Defect Liability period as well. Accordingly please modify this clause as below: **"CMC Maintenance Manager –** with responsibility not limited to developing maintenance strategy, co-ordination with planning, scheduling with OCC for Operations and DCC for Maintenance activity including preventive and corrective maintenance until the completion of CMC Period. Individual (must be minimum engineering graduate in Electrical/ Electronics/Mechanical) shall have at least 12 years' experience in Rolling Stock. Out of which at least 7 3 years he shall worked in Maintenance of Metro Rolling Stock……	Tender Condition Prevails
126	Part 2 – Section VI C: ERTS – CMC of RS & DM&P	2.3.1(xiii)	The Contractor shall ensure coordination with CMRL's Rep-resentative (PPIO) and personnel for operation of Traction and auxiliary power supply system by the Contractor's per-sonnel including requesting for power blocks required for the maintenance activities to be undertaken by the Con-tractor or CMRL at depot. The Contractor shall be responsi-ble for deployment of competent personnel for: A) Safe operation of the traction and auxiliary power supply system. b) Safety of all persons including CMRL personnel and any 3rd party at RS Maintenance Depot.	Bidder understand that operation of the traction and auxiliary power supply system is in CMRL's scope. Hence bidder request to delete Clause (a) CMRL is requested to confirm the same.	It is clarified that this requirement applies to the principal RS Maintenance Depot only. Furthermore, the Clause is referring to the operation of Traction and Auxiliary power systems only within the areas of the Depot that are under the Contractor's custody. (E.g. Workshop Lines and Inspection Bay Lines) Tender Condition Prevails
127	Part 3 : Section VIII Particular Conditions (Part B: Specific Provisions)	Sl.No.31 PCC to GCC Clause No. 4.25	**Add the following Sub-Clauses to the end of Sub-Clause 4.25:** **4.25.1 CMC - Rolling Stock:** The Contractor is required to carry out 15 years Comprehensive Maintenance Contract (CMC) for Rolling Stock which shall commence 2 years after the TOC date of 32nd Trainset and shall end after 15 years from start. The Contractor shall provide key maintenance staff as per qualification and experience detailed under Part 2, Section VI C ERTS (CMC – RS and DM&P). Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P).	Since this is Supply cum Maintenance contract, it would be the responsibility of the contractor to carry out maintenance during the DLP/DNP and CMC phase and achievement of performance requirements(KPIs),. thereby bidder request to modify the clause as below (which is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM contracts for simultaneous start of DLP & CMC): **Add the following Sub-Clauses to the end of Sub-Clause 4.25:** **4.25.1 CMC - Rolling Stock:** "Defect Liability and Maintenance Period (DLMP) shall start after commencement of revenue service of the first train set and 15 years thereafter. Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P). " Accordingly, please modify this clause.	Tender Condition Prevails.
128	Part 3 : Section VIII Particular Conditions (Part B: Specific Provisions)	Sl. No. 48 PCC to GCC Clause No. 1.1)	 **11.1 Completion of Outstanding work and Remedying defects** 48 — 11.1 **Add the following at the end of Sub-clause 11.1:** **11.1.1 DLP / DNP - Rolling Stock:** DLP / DNP for Rolling Stock shall start from the date of issuance of Taking-over Certificate (TOC) for the 1st trainset and the fleet DNP / DLP ends two years after the TOC date of the 32nd Trainset. During DLP/ DNP, the Contractor shall be responsible for including but not limited to the following scope of activities: a) Corrective Maintenance b) Preventive Maintenance c) Cleaning of trainsets d) Asset and Maintenance Management System (AMMS) e) Coordination with OCC/ BCC/ DCC/ PPIO f) Spares management **11.1.2 Depot Machinery & Plant (DM&P):** The below mentioned services shall be performed by the Contractor on the DM&P Assets (DM&P Assets includes those listed in Part 2 Section VI C ERTS – CMC of RS and DM&P Clause 1.15.1 as well as the list of Additional DM&P Assets supplied by the Contractor (in accordance with Part 1, Section IV Bidding Forms Clause 4.4.13) from the time of handover to the Contractor until the start of the CMC Period: a) Preventive and all other scheduled maintenance of DM&P. b) Notification of any defects to the DM250 Contractor and coordination of DLP claims for defect rectification. c) Waste Management d) Asset and Maintenance Management System (AMMS) e) Coordination with DCC / PPIO. f) Operation of DM&P Equipment. **11.1.3** If the Works or sections are not available for usage by the Employer for more than 48 hrs, then a penalty shall be paid by the Contractor as set out below. The cumulative amount shall be deducted by the Employer from the subsequent bills submitted by Contractor. **Rolling Stock:** Rs. 25,000 per day / train A penalty of Rs. 2 lakhs for each case shall be levied for the failure or malfunction in the Works or sections during passenger operation which interrupt metro operations in the specific corridor for more than 10 mins.	For Clause 11.1.1 & 11.1.2 Since this is Supply cum Maintenance contract, it would be the re-sponsibility of the contractor to carry out preventive maintenance during the DNP phase (which generally doesn't come under the scope of RS contractor). Thereby bidder request to modify the clause as below (which is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM contracts) and shall be termed as De-fect Liability and Maintenance Period (DLMP) altogether instead of separate DLP/DNP and CMC and it shall be defined as: "Defect Liability and Maintenance Period (DLMP) shall start after commencement of revenue service of the first train set and 15 years thereafter" Accordingly, please delete this clause of DNP/DLP. For Clause 11.1.3 As Comprehensive Maintenance of Rolling Stock is in scope of con-tract, Contractor is responsible for performance of Rolling Stock. These clauses calls for multiple penalties on account of perfor-mance and results in double dipping of penalties, bidder therefore request to delete this clauses (as requested for Clause 1.17, 3.4 & 3.5 of Part 2 – Section VI C: ERTS – CMC of RS & DM&P) This is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM	In reference to multiple penalties, Bidder's are encouraged to refer to Part-2 Section VI-C CMC of RS and DM&P Clause 1.1.21 which outlines provisions made to avoid double penalties in the event that the DLP period is extended. Tender Condition Prevails.
129	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.17 3.3.4 3.3.5 3.4 3.5	1,17 Key Performance Indicators (KPI) – Rolling Stock 3.3.4 RS Availability Damages 3.3.5 RS Penalties on Service Failures 3.4 OPERATION OF DEPOT M&P ASSETS 3.5 Penalty Regime For Depot M&P Asset Maintenance Compliance	As Comprehensive Maintenance of Rolling Stock is in scope of con-tract, Contractor is responsible for performance of Rolling Stock. These clauses calls for multiple penalties on account of perfor-mance and results in double dipping of penalties, bidder therefore request to delete the penalty defined under Clauses 1.17, 3.4 & 3.5. This is also consistent with recent tenders like DMRC RS17, BMRCL 5RS-DM Further it is requested to keep the capping on Penalty on account of KPIs limited to 10% of Annual CMC value.	Tender Condition Prevails.
130	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	3.2.1(a) Failure Classification: (a)Type1/ Service Failure	…….A list of anticipated scenarios which may lead to an unscheduled withdrawal is provided in Appendix I of Part 2 Section VIA). It is clarified that when such failures occur, the incident will not be categorised as a Type-1 / Service Failure if the train had continued running until the end of service without affecting punctuality.	Bidder request to add below information in the clause as agreed in the Contract for CMRL Phase II (78 cars, Tender No. ARE03A) for Type 1 Failures: "End of the day withdrawals shall not be considered as Type 1 failures as the maintenance intervention is required only after completion of revenue service for entire day"	The final sentence of the cited clause number already clarifies the bidder's query. Tender Condition Prevails
131	VI C: ERTS – CMC of RS and DM&P	3.2.1(b)	Relevant Failure: A relevant failure of an item is an independent failure which results in a loss of function of that item as a result of a fault/defect in an equipment or sub-system of the train while operating within its design and environmental specification limits or a maintenance error by the Contractor in undertaking its obligations during CMC Period. Improper operation, maintenance, or testing of the item as a result of erroneous documentation supplied by the Contractor or Failures of transient nature (including those with post investigation status as 'No fault found'), shall be considered as a relevant failure if in the opinion of CMRL these are attributable to rolling stock. The decision of CMRL shall be final	Bidder requests to consider joint decision of CMRL & Bidder for defining the relevant failure as requested below. **Bidder requests to modify the clause as follows:** Relevant Failure: A relevant failure of an item is an independent failure which results in a loss of function of that item as a result of a fault/defect in an equipment or sub-system of the train while operating within its design and environmental specification limits or a maintenance error by the Contractor in undertaking its obligations during CMC Period. Improper operation, maintenance, or testing of the item as a result of erroneous documentation supplied by the Contractor or Failures of transient nature (including those with post investigation status as 'No fault found'), shall be considered as a relevant failure if in the opinion of CMRL these are attributable to rolling stock. The decision of CMRL shall be final. The same shall be jointly agreed by CMRL and RS Contractor in the contract execution stage.	Tender Condition Prevails

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
132	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.17.10	**Secondary KPI Calculation** Secondary KPIs adopt a points deduction methodology for each instance of for non-conformance against the five cat-egories (a) through to (d) listed below, **Note:** Each category is equally weighted and may earn up to 200 points, meaning 1,000 points are available in total (as shown earlier in Table 1-2). Score can be depleted to zero (0), after which there will be no further deductions which cause the score to become negative a)Functioning of PA/PIS in Train 1 (one) point shall be deduced for each individual item of the PA/PIS system found to be non-functioning after the train is inducted to the main line. Defects identified through physical inspection or were recorded by the TCMS logs shall be counted. b)Functioning of CCTV System in Train 1 (one) point shall be deduced for each individual item of the CCTV system found to be non-functioning after the train is inducted to the main line. Defects identified through physical inspection on the train, OCC work-station or recorded by the TCMS logs shall be counted. Failures of a redundant or standby equipment which do not directly affect the performance of the CCTV system will not be counted. c)Functioning of Saloon Door in Train 5 (five) points shall be deducted for each non-functioning Saloon Door or Emergency Detrainment door. Defects identified through physical inspection, were identified via CCTV or were recorded by the TCMS logs shall be counted. d)Functioning of VAC in Train 5 (five) points shall be deducted for each incident involving a non-functioning of VAC systems to the extended that there is a failure to maintain the temperature & humidity (as per Chapter 7 Part 2 Section VIA	Bidder understands that the failures defined in the four categories from (a) to (d) shall be mutually exclusive from failure withdrawal scenarios defined in APPENDIX – I: TRAIN WITHDRAWAL SCENARIOS FOR 3-CAR TRAINS and it shall not be counted at both the places as it will result in double dipping of penalties. Please confirm our understanding is correct. Further maximum points earned for each of the four systems shall be 500 points so that total points for Secondary KPIs is 2000 as defined at Clause 1.17.4, Table 1-2 : KPI Points and Weightage – Rolling Stock, Part 2 – Section VI C: ERTS – CMC of RS and DM&P. Please confirm our understanding is correct	**Refer Addendum Sl. No. 67**
133	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	5.2.5	The Contractor shall procure / provide sufficient number of licenses to operate, manage & monitor the AMMS. The Contractor shall transfer the licenses to CMRL at the end of the CMC Period which shall be further valid for the period of at least one year after completion of CMC. In addition, the Contractor shall also provide TWO fully functional AMMS terminals (Latest version laptop) to CMRL maintenance personnel to access the real time information of maintenance and enable CMRL for the generation of reports. CMRL shall also be able to generate service requests from their terminals. The Contractor shall make suitable arrangement to securely store the database of AMMS system.	We request to change this clause as the Contractor would provide all the data into SAP of CMRL at the end of CMC period.	Tender Condition Prevails
134	Part 3 : Section VIII Particular Conditions (Part B: Specific Provisions)	Sl. No. 36, PCC to GCC Clause No. 6.9	**Add the following at the end of sub-clause GC 6.9** The Contractor shall submit the identity proof along with the police verification certificate for all the Contractor's person-nel/ staff/ workmen before engaging into the project site.	It is requested to delete this requirement as the Contractor follows it standard Police verification procedure during recruitment.	Tender Condition Prevails
135	Part 3 : Section VIII Particular Conditions (Part B: Specific Provisions)	Sl. No. 36, PCC to GCC Clause No. 6.9	**The following sub-clause GC 6.13,** "The Contractor shall arrange for the provision of a suffi-cient supply of suitable food as may be stated in the Em-ployer's Requirements at reasonable prices for the Contrac-tor's Personnel for the purpose of or in connection with the Contract." **is replaced as,** "The Contractor shall arrange for the provision of a suffi-cient supply of suitable food as per relevant OHSE guidelines and as per applicable Labour welfare standards / guidelines of the country of origin for the Contractor's Personnel for the purpose of or in connection with the Contract."	It is requested to delete this requirement as the Contractor follows its own OHSE guidelines for its employees.	Tender Condition Prevails
136	Part 2 – Section VI A: ERTS – Rolling Stock	18.13.2.1	CMRL shall allocate approximately 100 square meter space to the Contractor at one of the Designated Depot(s) for erection of site the Contractor's Site Office. This land / space provision shall be provided to the Contractor on a free of cost basis without any rental charges. Further space shall also be allocated to establish the Depot Stores facility	Since CMRL is constrcuting the complete depot, bidder proposes the construction of office & Depot store facility to be in Civil Con-tractor scope under CMRL including office for 15 CMRL staff as per Clause 2.2.2(ii), Part 2 VIC ERTS – CMC of RS & DM&P. Hence we request to provide constructed office space as well as constructed stores for fulfilling CMC obligations for Rolling Stock and Depot M&P. RS contractor will do furnishing of office space and maintain the of-fice furnishing till completion of CMC period.	Land will be provided. Tender Condition Prevails.
137	Part 2 – Section VI C: ERTS – CMC of RS & DM&P	1.1.19	Facilities at any of the Designated Depot(s) may be required to be shared between the Rolling Stock Contractor(s) of the respective fleets if ever an operational need arises. Standard Operating Procedures (SOP) shall be established by CMRL to provide governance that will fairly and reasonably determine how the allocation of depot facilities at the Designated Depot(s) will be apportioned between the respective fleets and their Contractors. This will be done without causing unreasonable hinderance to the ARE04A Contractor's ability to comply with the deliverables required under the scope of this Contract.	It is requested to allocate Semmancheri depot as the dedicated depot for trains under this Contract ARE04A only. ~~Hence interfacing of depot machinery and plant with multiple rolling stock is not possible~~. And accordingly, Depot M&P assets at the Semmancheri depot shall be utilized solely for maintenance of rolling stock under this contract ARE04A to meet the KPIs of this Contract. We request to modify these clause as follows: The Semmancheri depot will be the dedicated depot to stable, maintain and dispatch ~~all types of~~ rolling stocks to be procured for CMRL Phase II project for passenger service under this Contract(ARE04A) for 96 cars only.	Tender Condition Prevails
138	Part 2 – Section VI C: ERTS – CMC of RS & DM&P	1.1.16 3.4.2	Depot Machinery and Plant (herein referred to as Depot M&P, DMP or DM&P) at Designated Depot locations other than the principal RS Maintenance Depot shall be supplied by CMRL. The Operations and Maintenance of those Depot M&P Assets will also be undertaken by CMRL or its other Contractors. The Contractor's Operational staff shall be available at the premises of the designated Depot(s) round the clock. The price towards the operation of Depot Machinery & Plant is deemed to have been included in quoted price	It is requested to confirm that the Operation & Maintenance of the Depot M&P Assets for the depot other than RS Maintenance Depot (principal depot) will be carried out by CMRL or its other Contractors and ARE04A Contractor shall be responsible for Operation and Maintenance of Depot M&P assets of RS Maintenance Depot only and the same shall be used for trains under Contract ARE04A only which has also been requested at Clause 1.1.19, Part 2 – Section VI C: ERTS – CMC of RS & DM&P, for allocating 1 dedicated depot at Semmancheri for carrying out the maintenance obligations under this contract.	**Refer Addendum Sl. No. 70**
139	Part 2 – Section VI A: ERTS – Rolling Stock	**15.4** 15.4.1 15.4.2 15.4.3	**MAINTENANCE, REPAIR AND OVERHAUL FACILITIES** In order to support the Comprehensive Maintenance Contract (CMC) Works provided by the Contractor; the Contractor is obliged to establish localized facilities for a broad range of Maintenance, Repair and Overhaul (MRO) activities. The facilities shall be provided at the principal RS Maintenance Depot. A detailed list of MRO facilities shall be proposed by the Contractor as part of the Maintenance Philosophy submission. The list shall provide a detailed breakdown of all MRO facilities and equipment together with a full explanation of the usage application / maintenance tasks which each item shall accomplish. Types of MRO equipment to be provided by the Contractor, shall include, but not be limited to: a. Test and Repair workbench for Electronic Cards and Subsystems, which will minimally cover at least five (5) different train subsystems b. A mechanical workshop for teardown of at least five (5) mechanical Subsystems. c. Pneumatic overhaul and test facilities, for complete servicing of Brake Valves, Tread Brake Units, Air dryers, Main and Auxiliary Compressors, EP Valves etc. d. VAC maintenance and test bench	Bidder will carry out the maintenance activity as per its experience and Make/Buy strategy during the Contract execution stage. Hence bidder requests to delete this requirement.	Tender Condition Prevails

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
140	Part 2 – Section VI A: ERTS – Rolling Stock	16.11.7.2	All assemblies, subassemblies, components and individual equipment shall also be identified by a QR code label which shall be accessible for maintainer. The information con-tained in the QR code and the QR code format shall be mu-tually agreed upon by the Contractor and CMRL. This QR code shall be unique to the component to each specific train so that the codes shall be used for maintenance infor-mation. These QR codes shall be pasted adjacent to the components and shall not be in passengers' sight. These QR codes shall not be damaged during normal operating condi-tions and with regular train washing.	As per this clause all the assemblies, subassemblies and individual equipment shall be identified by QR code label which shall be accessible to maintainer. Bidder assumes that Serial number tracking is sufficient to trace component on train level. Hence we request to delete this requirement	Tender Condition Prevails
141	Part 2 – Section VI A: ERTS – Rolling Stock	11.1	**11 DEPOT MACHINERY AND PLANT (DM&P) CONTRACTOR** **11.1 General** 11.1.1 This section describes the interface requirements between Rolling Stock (RS) Contract and the Depot Machinery & Plant (DM&P) Contractors for each of the Designated Depot(s). 11.1.2 Depot M&P systems will be procured by CMRL under separately awarded contracts for each of the Designated Depot(s). It is therefore very likely that there will be multiple designated Contractors with whom the RS Contractor must manage interfaces for Depot M&P Assets. 11.1.3 The Contractors shall ensure that all the requirements of the Metro Railway General Rules are duly met by incorporating appropriate alarms, remote commands and other features. 11.1.4 The Contractors as above shall ensure that all requirements of the Specification pertaining to interfaces are properly satisfied. 11.1.5 All Interface Meetings, unless specifically approved by CMRL shall be held at site and they shall be given sufficient notice to attend the meeting. 11.1.6 Each Contractor shall be responsible for interface identification, establishment, construction and testing works either in the capacity as the Lead Contractor or Participating Contractor.	Depot M&P will be procured under separate DMP contract by CMRL. In this regard, please clarify the following : 1. DM&P equipment will have certain Calibration, third party inspection & Load test requirements, during or before the start of usage by Depot operations shall be under the scope of DM&P Contractor. May please confirm that our understanding is correct.	Tender Condition Prevails
142	Part 2 – Section VI A: ERTS – Rolling Stock Part 2 – Section VI C: ERTS – CMC of RS and DM&P	15.7.1 1.12.1	The Contractor shall supply a quantity of ten (10) ruggedized laptop computers to CMRL for the purpose of maintenance; including diagnostic troubleshooting of trains. At the start of the CMC Period, the Contractor shall supply twenty (20) diagnostic maintenance laptops of the same specification that is defined in Part 2 Section VIA Chapter 15.6 which will be handed over to CMRL.	It is requested to change the quantity to 10 laptops at Clause 1.12.1 in line with the requirement at Clause 15.7.1, Part2-Section VIA: ERTS-Rolling Stock. Please confirm.	Tender Condition Prevails
143	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.15.1	**1.15 PROCUREMENT ARRANGEMENTS FOR DEPOT M&P ASSETS** 1.15.1 CMRL will procure the following list of major Depot M&P Assets for the nominated RS Maintenance Depot under a separate Contract (Contract Number DM250): **Machine No. / Depot M&P Assets Procured by CMRL (Under DM250) / Unit / Qty** DM&P-01 / Under Floor Wheel Lathe (UFWL) / Nos / 1 DM&P-02 / Automatic Train Wash Plant (ATWP) / Nos / 1 DM&P-03 / Synchronised Pit Jacks (SPJ) for 3 Car Length / Set / 2 DM&P-04 / Wheel Profile Measuring System (WPMS- Way Side) / Nos / 1 DM&P-05 / Battery Operated Rail Cum Road Shunter-for 6 car shunting (BORRS) / Nos / 2 DM&P-06 / Synchronised Mobile Lifting Jacks (SMLJ) for 3 Car Length / Set / 2 DM&P-07 / Car Body Stand (CBS) for 3 Car Length / Set / 2 DM&P-08 / Diesel Operated Relief and Rescue Vehicle (RRV) With Rerailing & Rescue Equipment / Nos / 1 DM&P-09 / Bogie Wash Plant (BWP) / Nos / 1 DM&P-10 / Bogie Testing Unit (BTU) / Nos / 1 DM&P-11 / EOT 10/3 T Category – 1. / Nos / 2 DM&P-12 / EOT 10/3 T Category – 2. / Nos / 2 DM&P-13 / EOT 5 T For ETU Shed / Nos / 1 DM&P-14 / EOT 5 T For PWL Shed / Nos / 1 DM&P-15 / EOT 5 T For RS Shed / Nos / 1 DM&P-16 / Bogie Turn Table (BTT) / Nos / 6 DM&P-17 / Bogie Manipulator / Nos / 1	In the list only 17 major M&P equipment are available. Bidder proposes to have one 15 ton crane in RBL /Work shop line. May please confirm	Tender Condition Prevails
144	Part 2 – Section VI A: ERTS – Rolling Stock	Appendix D – Guidelines and Drawings	Layout & Site Requirements	1) We request to provide Auto CAD & PDF layout of all three depots? 2) Bidder assumes that the industrial layout for the depot will be aligned with RS contractor before execution & all other requirements like floor marking, pit covers etc for movements will be CMRL or designated contractor's scope other than RS Contractor. 3) Bidder assumes all the lifelines (both horizontal & vertical) & handrails for work at height will be in CMRL or designated contract scope other than RS.	Please refer Part 2 - VIA (Appendix C, Clause 10). Tender Condition Prevails.
145	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.15.3	Any additional Depot M&P Assets required for the ARE04A Contractor to perform its CMC Works on the rolling stock fleet, shall be procured by the ARE04A Contractor and the cost is deemed to have been included in the price quoted in the CMC-RS Price Centre. A provisional list of these items will have been provided by the Contractor during bidding stage (Part-1, Section IV Bidding Form Clause 4.4.13).	It is requested to provide a list of additional M&P e.g. Ultrasonic Flaw detector, BOPTs, Self-propelled Scissor Lifts, High Pressure Water Jet Pumps, Pallet Trucks, Battery Operated Forklifts, Mobile Lifting Tables etc. and storage items such as racks, bins etc as a minimum. Alternatively, CMRL is requested to procure these items through the DM250 contract	Tender Condition Prevails
146	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.15.7	The duration of the Optional TSSSA Agreement shall be 5 years (renewable) starting from the end of the DM250 DLP period. A broad outline of the scope and cost basis is shown below:- ……	Bidder requests to provide the details of DLP period including obligations of DM250 Contractor for the Depot M&P assets. Further bidder request Employer to novate the DLP services from DM250 Contractor to the ARE04A Contractor. Please confirm.	**Refer Addendum Sl. No. 62**
147	Part 2 – Section VI A: ERTS–RS	10.8.4	The main transformer design shall be "Hermetically Sealed" type forced cooled or naturally cooled design is proposed. Components shall be modular in construction, complete with oil pump, oil pump motor, radiator with blower fans (if adopted), conservator (if adopted) and protection equipment (e.g. over pressure, over temperature, Buchholz Relay, etc.) all assembled as a single module.	**Justification:** Bidder would like to inform that our current design of transformer takes adequate measures to ensure elimination of air from the hydraulic circuit. Moreover, we use Ester oil as cooling agent which has better moisture ab-sorbing characteristics in comparison to silicone oil. Hence, "Hermetically Sealed" type transformers is not required in our case. The proposed solution is proven in metro application and is being implemented in several recent projects. Accordingly, we request you to amend the requirement in line with ARE03A contract. **Amendment Requested:** The main transformer design shall be ~~"Hermetically Sealed" type~~ forced cooled or naturally cooled type ~~design is proposed~~. Components shall be modular in construction, complete with oil pump, oil pump motor, radiator with blower fans (if adopted), conservator (if adopted) and protection equipment (e.g. over pressure, over temperature, Buchholz Relay, etc.) all assembled as a single module.	It is clarified that the requirement for a Hermatically Sealed type transformer may be waived during design stage provided the following two (2) conditions are met:- 1) The Contractor provides reasonable justifications and track record to demonstrate high levels of reliability of the proposed transformer in service in high humidity regions. 2) The Contractor underwrites an extended defect warranty for a period of not less than 15 years; even if the CMC Period is prematurely terminated. Tender Condition Prevails
148	Part 2 – Section VI A: ERTS–RS	6.9	**DUAL MODE DETRAINMENT DOOR** 6.9.1 Dual Mode Detrainment doors shall be provided in the first and last car for emergency egress of passengers in one (1) f two (2) modes of operation. 6.9.2 Each Detrainment Door shall be a hybrid design, which offers the possibility of two (2) operating modes. 6.9.3 The two (2) required operating modes of the Detrainment Door are as follows: a) Train to Track Evacuation Mode (will be configured this way when the DM cars are not coupled) b) Train to Train Evacuation Mode (will be configured this way when DM cars are coupled during multi-consist operation) 6.9.4 The hybrid design concept shall ensure that the same door is able to serve both operating modes; without the entire door assem-bly needing to be interchanged to convert the door between modes. However, a conversion process which involves interchange of the ramp (used for train-to-track evacuation mode) with a bridging plate (used for train-train evacuation mode) is acceptable. Such conversion process shall be undertaken at the Designated Depot(s) under the guidance of an easy-to follow maintenance work instruction. It must be easy to accomplish by no greater than two (2) maintenance staff, in less than four (4) hours. 6.9.5 Additional Detrainment Door hardware which may be re-quired for the Train to Train Evacuation. Mode shall only be required in a quantity of one (1) per trainset.	**Justification:** Bidder would like to inform that dual mode detrainment door is not readily available solution in the market and its proven-ness is questionable especially in emergency mode in GoA4. Due to new development and interfacing chal-lenges with the carbody it may impact the delivery schedule also. **Amendment Requested:** Bidder request to delete the requirement of dual mode detrainment door and keep only Train to Track evacuation mode in line with ARE03A contract.	Tender Condition Prevails

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
149	Part 2 – Section VI A: ERTS–RS	7.3.9	All compressors within the VAC units shall be inverter controlled variable voltage variable frequency (VVVF) type motors. If DC mo-tors are proposed for Evaporator fans, they must be of a Brushless type.	**Justification:** Bidder would like to inform that the compressor of VVVF type motor cur-rently is not the proven one in the rail industry. Also, we will have 4 com-pressors per VAC unit, which will give about 8 compressors per Car. This will help us to have 8 stages of cooling capacity. Hence request you to keep the requirement in line with ARE03A contract. **Amendment Requested:** ~~All compressors within the VAC units shall be inverter controlled variable voltage variable frequency (VVVF) type motors.~~ **DC motors shall not be used for compressors in the air-conditioning units.** If DC motors are proposed for Evaporator fans, they must be of a Brushless type.	**Refer Addendum Sl. No. 23**
150	Part 2 – Section VI A: ERTS–RS	19.52.9	Contractor shall use Mors Smitt BK-400 relays for all Safety Func-tions (like, Cab active, Rear cab active, Zero velocity, Door System, Brake control, Emergency brake circuit, coupler, etc).	**Justification:** Bidder would like to inform that this requirement is leading to monopolistic situation by restricting to single vendor. Accordingly, we request to keep the requirement open in line with ARE03A contract. **Amendment Requested:** Contractor shall use ~~Mors Smitt BK-400~~ relays **as per EN 60810-3 & IEC 60947** for all Safety Functions (like, Cab active, Rear cab active, Zero veloci-ty, Door System, Brake control, Emergency brake circuit, coupler, etc).	Tender Condition Prevails
151	Part 2 – Section VI A: ERTS–RS	3.14.10.1	A crash energy absorption ("large deflection") analysis of the car shall be made and submitted to assess the energy absorbing properties of the structure. The Contractors shall submit a detailed report showing all the results of the analysis for CMRL's review and approval. Crashworthiness analysis shall be conformed for all train configuration mentioned this contract and in clause 2.2.12. This analysis is required to show that the car crushes in from the end and does not affect the occupied volume. The analysis shall be based on the following scenarios: (i) one 3-car train (loading condition as mentioned in EN 15227), traveling at 25 kmph, impacts another 3-car train similarly AW2 loaded Condition, which is standing still with friction brakes applied on level, tangent track so that the anti-climbing mechanisms engage. (ii) one 3-car train (loading condition as mentioned in EN 15227), traveling at 25 kmph, impacts another 3-car train similarly AW2 loaded Condition, which is standing still with unbraked on level, tangent track so that the anti-climbing mechanisms engage. (iii) one 6-car train (loading condition as mentioned in EN 15227), traveling at 25 kmph, impacts another 6-car train similarly AW2 loaded Condition, which is standing still with friction brakes applied on level, tangent track so that the anti-climbing mechanisms engage. (Trainsets configuration defined as per clause 2.2.12) (iv) one 6-car train (loading condition as mentioned in EN 15227), traveling at 25 kmph, impacts another 6-car train similarly AW2 loaded Condition, which is standing still with unbraked on level, tangent track so that the anti-climbing mechanisms engage. (Trainsets configuration defined as per clause 2.2.12)….	**Justification:** There are several scenarios requested in the clause which are at different mass and vehicle configuration. However bidder recommend to follow the collision scenario for the extreme condition out of these as performing simu-lation on all the scenarios will not provide any extra benefit and will lead to extra cost and time. Accordingly, we request to keep the requirement open in line with ARE03A contract. **Amendment:** A crash energy absorption ("large deflection") analysis of the car shall be made and submitted to assess the energy absorbing properties of the struc-ture. The Contractors shall submit a detailed report showing all the results of the analysis for CMRL's review and approval. This analysis is required to show that the car crushes in from the end and does not affect the occupied volume. The analysis shall be based on the fol-lowing scenario: **one 6-car train (loading condition as mentioned in EN 15227), traveling at 25 kmph, impacts another 6-car train similarly AW2 loaded Condition, which is standing still, friction brakes applied with Brake Coefficient 0.17 on level, tangent track so that the anti-climbing mechanisms engage….**	Tender Condition Prevails
152	Part 2 – Section VI A: ERTS–RS	3.14.10.2	For the purposes of design of the crashworthiness components, the following collision scenario and crashworthiness criteria may apply, or those which comply with the cited international standards: Crashworthiness analysis shall be conformed for all train configura-tion mentioned this contract and in clause 2.2.12. a. Collision Scenario: (i) One 3-car trainset (loading condition as mentioned in EN 15227) on level tangent track and moving at velocity V, impacts a similar, 3-car trainset loaded to AW2 stationary trainset which has all fric-tion brake systems applied with a wheel/rail coefficient of friction of 0.3. (ii) One 3-car trainset (loading condition as mentioned in EN 15227) on level tangent track and moving at velocity V, impacts a similar, 3-car trainset loaded to AW2 stationary trainset which is unbraked. (iii) One 6-car trainset (loading condition as mentioned in EN 15227) on level tangent track and moving at velocity V, impacts a similar, 6-car trainset loaded to AW2 stationary trainset which has all friction brake systems applied with a wheel/rail coefficient of friction of 0.3. (Trainsets configuration defined as per clause 2.2.12). (iv) One 6-car trainset (loading condition as mentioned in EN 15227) on level tangent track and moving at velocity V, impacts a similar, 6-car trainset loaded to AW2 stationary trainset which is unbraked. (Trainsets configuration defined as per clause 2.2.12)	Justification: There are several scenarios requested in the clause which are at different mass and vehicle configuration. However bidder recommend to follow the collision scenario for the extreme condition out of these as performing simu-lation on all the scenarios will not provide any extra benefit and will lead to extra cost and time. Accordingly, we request to keep the requirement open in line with ARE03A contract. Amendment: For the purposes of design of the crashworthiness components, the follow-ing collision scenario and crashworthiness criteria may apply, or those which comply with the cited international standards: **a. Collision Scenario:** **one 6-car train (loading condition as mentioned in EN 15227) on level tangent track and moving at velocity V, impacts a similar, 6-car trainset loaded to AW2 stationary trainset which has all friction brake systems applied with a wheel/rail coefficient of friction of 0.17…**	**Refer Addendum Sl. No. 18** **&** **Refer Addendum Sl. No. 19**
153	Part 2 – Section VI A: ERTS–RS	3.14.5.6	The Contractor shall submit a detailed technical analysis to derive predicted values for the following criteria for collision of trainset according to the scenarios stated below: (i) When a 3-car trainset loaded to AW2 loaded condition colliding with a stationary AW2 loaded condition 3-car trainset with maximum parking brakes applied condition. (ii) When a 3-car trainset loaded to AW2 loaded condition colliding with a stationary AW2 loaded condition 3-car trainset with unbraked condition. (iii) When 6-car trainset loaded to AW2 loaded condition colliding with a stationary AW2 loaded condition 6-car trainset with maximum parking brakes applied condition. (Trainsets configuration defined as per clause 2.2.12) (iv) When 6-car trainset loaded to AW2 loaded condition colliding with a stationary AW2 loaded condition 6-car trainset with unbraked condition. (Trainsets configuration defined as per clause 2.2.12)…	**Justification:** There are several scenarios requested in the clause which are at different mass and vehicle configuration. However bidder recommend to follow the collision scenario for the extreme condition out of these as performing simu-lation on all the scenarios will not provide any extra benefit and will lead to extra cost and time. Accordingly, we request to keep the requirement open in line with ARE03A contract. **Amendment:** The Contractor shall submit a detailed technical analysis to derive predicted values for the following criteria for collision of trainset according to the sce-narios stated below: **one 6-car train (AW2 loaded condition), traveling at 25 kmph, impacts another 6-car train similarly AW2 loaded Condition, which is standing still, friction brakes applied with Brake Coefficient 0.17 on level, tangent track so that the anti-climbing mechanisms engage…**	Tender Condition Prevails
154	Part 2 – Section VI A: ERTS–RS	14.9.5 (b)	The overall time required for uploading the software for all subsystems shall not be more than 10 minutes for each complete sub-system of train and the same shall be demonstrated. (Ex. In case of doors sub-system, the time requirement is collectively for all doors of one train)	**Justification:** Bidder would like to inform that software upload time depends on system to system basis. For few system it may be less than 5 min whereas for others it may be more. It depends on how heavy the software is. Since, software up-loading is always done in depot during maintenance and not during opera-tions. **Amendment Requested:** Bidder request to delete this requirement.	Tender Condition Prevails

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
155	Part 2 – Section VI A: ERTS–RS	19.54.3 (i)	All Electronic equipment shall comply with IEC60571 and/or EN50155 and additionally type tested for, (i)Dry heat test: The dry heat test shall be conducted for class T3 and temperature shall be considered 80°C against 70°C specified in IEC/EN. An extra performance check at 95°C shall also be carried out for 10 minutes over temperature value. LCD / LED display units may be tested at 70°C and an extra performance check at 85°C shall also be carried out for 10 minutes over temperature value	**Justification:** We request CMRL to specify the requirements as per IEC & EN standards as these are standard equipment which are designed as per standard and it will be difficult to comply to these extra performance requirements. Accordingly, we request to keep the requirement open in line with ARE03A contract. **Amendment Requested:** All Electronic equipment shall comply with IEC60571 and/or EN50155 and additionally type tested for, (i)Dry heat test: The dry heat test shall be conducted for class T3 and temperature shall be considered ~~80°C against~~ 70°C specified in IEC/EN. A~~n extra performance check at 95°C shall also be carried out for 10 minutes over temperature value~~. LCD / LED display units may be tested at 70oC ~~and an extra performance check at 85°C shall also be carried out for 10 minutes over temperature value~~	Tender Condition Prevails
156	Part 2 – Section VI A: ERTS–RS□	19.54.3 (ii)	**Salt Mist test** (ST3 category) a. Cyclic Humidity tests (IEC 60571) b. Dust and sand test & Mold growth tests: The tests shall be done as per IEC 60068 & IEC 60721. The dust settlement rate shall be taken as 6gm/m2/day and dust particle size shall not be larger than 100 microns.	**Justification:** Bidder would like to inform that all the electronics are housed in sealed/closed boxes and hence this is not required. Accordingly, we request to keep the requirement open in line with ARE03A contract. **Amendment Requested:** Bidder request to delete this requirement.	Tender Condition Prevails
157	Part 2 – Section VI A: ERTS–RS	3.3.6	All welds on car exterior and interior (including spots weld marks) shall be passivated with an acceptable procedure to protect against any visible rusting/chemical deposits / blackening etc. Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems shall be done as per ASTM A380 or equivalent. Procedure shall be submitted for CMRL's approval before ninety (90) days start of car manufacturing.	**Justification:** All the welds on interior shall be cleaned with mechanical cleaning ex. wire brush to protect against any visible rusting/chemical deposits / blackening etc. However Passivation will be applied on exterior. Regarding ASTM A380 – Raw material suppliers do not follow this standard for passivation (they normally pickle it). In Alstom we perform train level passivation. Procedure we follow is based on ASTM A967. The same will be submitted to the customer during design stage. This is standard practice we follow at global level and it is in line with other Indian tenders. **Amendment Requested:** All **arc** welds **and only spots weld marks with blackening** on car exterior shall be passivated and interior **arc** welds **shall be mechanically cleaned with an acceptable procedure** to protect against any visible rusting/chemical deposits / blackening etc. ~~Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems shall be done as per ASTM A380 or equivalent. Procedure shall be submitted for CMRL's approval before ninety (90) days start of car manufacturing.~~	Tender Condition Prevails
158	Part 2 – Section VI A: ERTS–RS	3.6.1.27	"Gaps in vehicle interior shall be minimized. Gaps that are visible to passengers shall be maintained in the range of 1mm (min) to 2mm (max) to ensure they are flush and uniform with the panel edges. Concealed gaps shall be 1.5 mm ~ 3 mm."	**Justification:** Bidder requests to update the gap requirements to 3-5mm in order to ac-commodate the stack of multiple panel architecture in line with existing methodology of the bidder. **Amendment Requested:** "Gaps in vehicle interior shall be minimized. Gaps that are visible to passen-gers shall be maintained in the range of ~~1mm (min) to 2mm (max)~~ **3mm to 5mm** to ensure they are flush and uniform with the panel edges. ~~Concealed gaps shall be 1.5 mm ~ 3 mm.~~	Tender Condition Prevails
159	Part 2 – Section VI A: ERTS–RS	3.6.1.22	Flatness of Aluminium side panels shall be controlled within 0.5 mm per 1m length.	**Justification:** 1.5mm per 1 m length flatness, is achieved as per Alstom Global standards and from past metro projects Rex. **Amendment:** Flatness of Aluminium side panels shall be controlled **within 1.5mm per 1m length.**	Tender Condition Prevails
160	Part 2 – Section VI A: ERTS–RS	3.6.5.10	The seats and their mountings shall be capable of withstanding the loads arising in service conditions. The seats shall be designed to have a service life compatible with the car. Structural requirements for rail vehicle structures shall be design and tested conforming with GM/RT2100, UIC 566, EN 12663-1.	Justification: Bidder would like to inform that as per our standard solution our product complies to EN12663:2000 P-III category for all Carbody struc-tural requirement. EN12663:2000 P-III is an European standard and is equivalent to UIC 566. Also, GM/RT 2100 asks to follow EN 12663 only for the carbody structural requirements. Amendment: The seats and their mountings shall be capable of withstanding the loads arising in service conditions. The seats shall be designed to have a service life compatible with the car. Structural requirements for rail vehicle structures shall be design and tested conforming with GM/RT2100 **/** UIC 566 **or** EN 12663.	Please refer Clause 1.2.4. Tender condition prevails.
161	Part 2 – Section VI A: ERTS–RS	11.4.10 (e)	The Helical springs shall have a fatigue life of not less than 10,00,000kms and shall be designed and tested as per EN 13298 and EN 13906. The service life of rubber bonded metal components / rubber of spring type primary suspension shall be OEM rated for not less than 8 years. The Contractor shall ensure that the chosen supplier provides a warranty for the same.	**Justification:** The rubber spring type primary suspension OEM warranty is provided for 48 months starting from the date of receipt of the component by AT. **Amendment Requested:** The Helical springs shall have a fatigue life of not less than 10,00,000kms and shall be designed and tested as per EN 13298 and EN 13906. The ser-vice life of rubber bonded metal components / rubber of spring type primary suspension shall be OEM rated for not less than 8 years. ~~The Contractor shall ensure that the chosen supplier provides a warranty for the same.~~	It is clarified that the warranty can be provided by the Contractor in lieu of the OEM. Tender Condition Prevails.
162	Part 2 – Section VI A: ERTS–RS	3.2.1(a)	A list of anticipated scenarios which may lead to an unscheduled withdrawal is provided in Appendix I of Part 2 Section VIA). It is clarified that when such failures occur, the incident will not be cate-gorized as a Type-1 / Service Failure if the train had continued run-ning until the end of service without affecting punctuality.	**Bidder understands the clause information in following manner and requests to clarify the understanding:** A failure will not be considered as Service Affecting failure in case the failure does not affects the punctuality/performance and requires intervention only at: 1.End of trip 2.End of day **Please confirm.**	Refer Reply to Bidder Query S/N 130
163	Part 2 – Section VI A: ERTS–RS	3.2.1(b)	Relevant Failure: A relevant failure of an item is an independent failure which results in a loss of function of that item as a result of a fault/defect in an equipment or sub-system of the train while oper-ating within its design and environmental specification limits or a maintenance error by the Contractor in undertaking its obligations during CMC Period. Improper operation, maintenance, or testing of the item as a result of erroneous documentation supplied by the Contractor or Failures of transient nature (including those with post investigation status as 'No fault found'), shall be considered as a relevant failure if in the opinion of CMRL these are attributable to rolling stock. The decision of CMRL shall be final.	**Amendment Requested:** Relevant Failure: A relevant failure of an item is an independent failure which results in a loss of function of that item as a result of a fault/defect in an equipment or sub-system of the train while operating within its de-sign and environmental specification limits or a maintenance error by the Contractor in undertaking its obligations during CMC Period. Improper op-eration, maintenance, or testing of the item as a result of erroneous doc-umentation supplied by the Contractor or Failures of transient nature (in-cluding those with post investigation status as 'No fault found'), shall be considered as a relevant failure if in the opinion of CMRL these are at-tributable to rolling stock. The decision of CMRL shall be final **and based on Root cause analysis of the fault.**	Refer Reply to Bidder Query S/N 131
164	Part-3, Sec-tion - VIII Particular Conditions (Part B: Specific Provisions)	Clause 11.1	DLP / DNP for Rolling Stock shall start from the date of issuance of Taking-over Certificate (TOC) for the 1st trainset and the fleet DNP / DLP ends two years after the TOC date of the 32nd Trainset.	We understand that in the event of delay in the progress of project due to which few trains delivery can't be made for reasons attributable to Employer, and resulting into extension of DLP, the contractor shall be entitled for EOT and compensation for such extended warranty.	Tender Condition Prevails.

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165	Part-3, Sec-tion - VIII Particular Conditions (Part B: Specific Provisions)	Clause 4.25	CMC - Rolling Stock: The Contractor is required to carry out 15 years Comprehensive Maintenance Contract (CMC) for Rolling Stock which shall commence 2 years after the TOC date of 32nd Trainset and shall end after 15 years from start. The Contractor shall provide key maintenance staff as per qualification and experience detailed under Part 2, Section VI C ERTS (CMC – RS and DM&P). Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P).	Please note that in a situation where ROD of partial trains are taken over due to infrastructure or ridership issues, and the balance is not taken by the customer, In this sinerio we request CRML to the CMC start train-wise and not depend on ROD of last trainset.	Tender Condition Prevails.
166	Part 2 – Section VI A: ERTS – Rolling Stock	18.6.5.6	It is clarified that even if trainsets are not deployed to the network to the extent that is required to earn the design mileage (defined in Clause 1.4.5) the same MDBF targets and respective calculations taken for Reliability demonstration shall prevail.	Bidder requests to modify this clause in line with recent Technical specifications prevalent in Indian Metros, including DMRC RS17 for Standardization across Metros in India.: Thus, the clasue to be modified as below: It is clarified that ~~even~~ if trainsets are not deployed to the network to the extent that is required to earn the design mileage (defined in Clause 1.4.5) the ~~same~~ MDBF targets and respective calculations taken for Reliability demonstration shall ~~prevail~~ be revised as per following: The targets mentioned in table 18-2 are based assuming Average annual km earnings of 150,000 km. For every 10% change in actual Average annual km of 150,000 km; the above reliability target values will be adjusted by 5%. As an illustration, in case actual average annual km is 135,000 km then MDBF target shall be 1,18,750 km after 18th month of start of revenue services of first train.	Tender Condition Prevails.
167	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.1.21	Where it is the case that a DLP / DNP extension had arisen on account of non-fulfilment of the Reliability Demonstration Targets for Rolling Stock (as defined in Part 2, Section VI A, ERTS RS clause 18.6) then the penalty regime detailed in Clause numbers 1.17 & 3.3 shall not come in to force until DLP / DNP period of extension ends. This provision is made to ensure that the Contractor is not exposed to double penalties	Bidder needs clarification on the following understanding of the contractual clause. 1)In case bidder can demonstrate the MDBF target as mentioned in Clause 18.6 before the DLP period (24 month), bidder assumes that till DLP period of 24-months, CMC penalty per incident will not be applicable. Please confirm.	CMC penalty shall be applied only after the start of CMC period. Tender Condtion Prevails.
168	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	5.2.5	The Contractor shall procure / provide sufficient number of licenses to operate, manage & monitor the AMMS. The Contractor shall transfer the licenses to CMRL at the end of the CMC Period which shall be further valid for the period of at least one year after completion of CMC. In addition, the Contractor shall also provide TWO fully functional AMMS terminals (Latest version laptop) to CMRL maintenance personnel to access the real time information of maintenance and enable CMRL for the generation of reports. CMRL shall also be able to generate service requests from their terminals. The Contractor shall make suitable arrangement to securely store the database of AMMS system.	The AMMS solution is a proprietary solution of the RS Contractor. Hence the same cannot be transferred. Accordingly, we request you to delete the requirement of handing over of AMMS terminal to CMRL maintenance personnel. The Contractor shall give access to the data, information and reports generated by the AMMS system through dedicated terminals/workstations/servers provided by the Contractor at DCC, OCC and at any other CMRL offices through the internet. Also, the RS contractor shall provide soft copies (MS excel etc.) in electronic storage device(s) of relevant data on monthly basis for reconciliation into CMRL's Asset Management System. Hence, we request you to modify the clause as following: "The data entry and update in the AMMS shall be done by Contractor's personnel. However, CMRL shall be given access to the data, information and reports generated by the AMMS system through dedicated terminals/workstations/servers provided by the Contractor at DCC, OCC and at any other CMRL offices through the internet. RS contractor shall provide soft copies (MS excel etc.) in electronic storage device(s) of relevant data on monthly basis for reconciliation into CMRL's Asset Management System."	Tender Condition Prevails.
169	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	5.1.3.	The Contractor shall ensure that the proposed AMMS system is fully installed, tested & commissioned before delivery of the Prototype Trainset. The primary objectives are as follows but not limited to: i) Storage of fault data from CMC Assets (including wayside Hot Axle measuring system data) for at least 35 years	We request to keep the provision of storage of fault data from CMC Assets upto the CMC period only. Hence please modify the clause accordingly.	Tender Condition Prevails.
170	Part 2 Section VIA (ERTS – RS)	11.5.1 (d) (ii)	A lateral load of half fully loaded body weight subjected to an acceleration of ±1.1g	Amendment Requested: A lateral load of half fully loaded body weight subjected to an acceleration of± 0.5g to 0.9g as per GMRT2100.	Tender Condition Prevails.
171	Part 2 Section VIA (ERTS – RS)	3.6.1.22	All internal panels (side panels, ceiling panels, end-ceiling panels, inspection cover panels, door coving panels, ceiling coving panels, etc) shall be of aluminium material with proven record in Metro/ EMU application. Coating system shall be proposed by the Contractor shall be proven and conform to the requirements in clause 3.6.1.21, subjected to CMRL approval.	Providing aluminium panels at places requiring complex shapes is not feasible. Thus, FRP panels may please be allowed at such locations	Tender Condition Prevails.
172	Part 2 Section VIA (ERTS – RS)	19.54.3	Dry heat test: The dry heat test shall be conducted for class T3 and temperature shall be considered 80°C against 70°C specified in IEC/EN. An extra performance check at 95°C shall also be carried out for 10 minutes over temperature value. LCD/LED display units may be tested into 70°C and an extra performance check at 85°C shall also be carried out for 10 minutes over temperature value.	As per clause 2.11.1 the maximum ambient temperature is 42 degrees celsius which was observed in Chennai for the past 15 years considering the above we request that all the Electronic Equipments shall comply with standard EN 50155. That means +70°C for 6 hours and +85°C for max. 10 minutes according to the temperature profile defined in the norm. With a longer time at T>+70°C the functioning of the electronic equipment is not guaranteed hence we request the requirement to be changed to cpmply with EN50155 and not for temperatures above the temperatures mentioend in the standard which is not required for this particular tender..	Tender Condition Prevails.
173	Part 2 Section VIA (ERTS – RS)	3.6.1.27	"Gaps in vehicle interior shall be minimized. Gaps that are visible to passengers shall be maintained in the range of 1mm (min) to 2mm (max) to ensure they are flush and uniform with the panel edges. Concealed gaps shall be 1.5 mm ~ 3 mm."	request to increase the gaps tolerance to 3mm to 5 mm as Requirement for gap to be in range of 1 - 2 mm is very stringent and difficult to achieve even with Alu panels	Tender Condition Prevails.
174	Part 2 Section VIA (ERTS – RS)	10.8.4	The main transformer design shall be "Hermetically Sealed" type forced cooled or naturally cooled design is proposed. Components shall be modular in construction, complete with oil pump, oil pump motor, radiator with blower fans (if adopted), conservator (if adopted) and protection equipment (e.g. over pressure, over temperature, Buchholz Relay, etc.) all assembled as a single module``	main transformer design can be proposed to be be forced cooled or naturally cooled	Tender Condition Prevails.
175	Part 2 Section VIA (ERTS – RS)	3.6.1.22	All internal panels (side panels, ceiling panels, end-ceiling panels, inspection cover panels, door coving panels, ceiling coving panels, etc) shall be of aluminium material with proven record in Metro/ EMU application. Coating system shall be proposed by the Contractor shall be proven and conform to the requirements in clause 3.6.1.21, subjected to CMRL approval. Flatness of Aluminium side panels shall be controlled within 0.5 mm per 1m length.	TRSL proposes modifying the Contract to include FRP (Fiber-Reinforced Plastic) panels alongside aluminum for internal panels in Metro/EMU application. While aluminum is a conductor and may cause electrical concerns during VAC operation, FRP's thermal insulating properties offer improved passenger comfort and weight reduction . CMRL approval will be sought for the proposed FRP coating system to ensure compliance with clause 3.6.1.21. By providing flexibility in panel material, we can enhance safety and energy efficiency, benefiting the project's success. Your support in incorporating this modification will be highly appreciated. Flatness of 0.5mm per 1m length requirment to be re assessed.	Tender Condition Prevails.

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
176	Part 2 Section VIA (ERTS – RS)	12.16.1	It shall be possible to rescue a sick train (E.g. Defective, Immobilized, No battery power or in a shutdown condition) using only an air connection from the rescue train or locomotive. The emergency brake application of the dead train shall be possible by its operator. The detailed scheme shall be subject to the Engineer's review during design finalization.	Air connection is requested to be modified as Air or Electrical connection as EBV can be applied in sick train through Electrical connection via Healthy Train	**Refer Addendum Sl. No. 44**
177	Part 2 Section VIA (ERTS – RS)	19.52.9	Contractor shall use Mors Smitt BK-400 relays for all Safety Functions (like, Cab active, Rear cab active, Zero velocity, Door System, Brake control, Emergency brake circuit, coupler, etc).	We Request to remove the Specified OEM and the contract may be modified as Relays as per EN61810 Standard	Tender Condition Prevails.
178	Part 2 Section VIA (ERTS – RS)	14.10.6.5	Event Recorder The event recorder shall continue recording when the car is stationary but in operational mode.	The Specification does not specify the Audio / Video recording requirement. The same has to be included or specified.	Tender Condition Prevails.
179	Part 2 Section VIA (ERTS – RS)	14.10.6	Event Recorder Safety function (SIL2)	The Specification does not specify the SIL2 Safety function for event recorders. The same has to be included or specified.	Tender Condition Prevails.
180	Part 2 Section VIA (ERTS – RS)	10.4.1	VCB shall be additionally type tested with 300,000 operations	the Additional type testinng may be limited to 200,000 Operations	Tender Condition Prevails.
181	Part 2 Section VIA (ERTS – RS)	10.12.8	The train operator from the cab shall be able to isolate any power converter / inverter. Current drawn by each motor shall be measured and recorded.	The train operator from the cab shall be able to isolate any power converter / inverter. Current drawn by each bogie shall be measured and recorded.	Tender Condition Prevails.
182	Part 2 Section VIA (ERTS – RS)	2.14.3.3	For an emergency brake application in good adhesion conditions (i.e. dry ncontaminated wheel rail interface) on level track from maximum speed, the rake shall brake to a standstill from 80kmmh within a distance of 223 munder any Loading Conditions up to AW4. The minimum average emergency brake rate following any single point failure shall not be lessthan 1.3 m/s2	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 223 m under any Loading Conditions up to AW4	Tender Condition Prevails.
183	Part 2 Section VIA (ERTS – RS)	4.6.1.3	In case of an electrical failure on a defective train (or in the case of coupling with a train from a different Chennai Phase-2 fleet); it shall be possible to electrically couple with only essential control and power feed circuits active (E.g. non-essential circuits shall be isolated to avoid migration of the electrical defect to the healthy train)	Coupling of Electrical heads with existing fleet may not be possible as the TCMS(Signal list and position of signals) of the both Trainsets will be different	Tender Condition Prevails.
184	Part - 3 Section VIII	14.2/ Pg 97	Interest bearing Mobilization Advance to a maximum of 10% of the Accepted Contract Amount (Excluding Provisional Sum) excluding taxes & duties is payable in INR only. The Rate of Interest shall be 13.5% per annum. Mobilization advance shall be paid in two equal instalments.	We would like to request CMRL for the Advance amount to be 20% of the Contract Amount attributable the Works into TWO equal instalments, and no Interest on advance would be applicable, this is particularly with reference to similar advance considered by CMRL Contract no. ARE02A, BMRCL, DMRC, MPMRCL for contract no.- BH&IN-02 (Bhopal-Indore Metro) and similar other contracts of Metro Trains.	Tender Condition Prevails. **Refer Addendum Sl. No. 72**
185	Part-3: Section VIII	4.25 (Pg-98)	The Contractor is required to carry out 15 years Comprehensive Maintenance Contract (CMC) for Rolling Stock which shall commence 2 years after the TOC date of 32nd Trainset and shall end after 15 years from start. The Contractor shall provide key maintenance staff as per qualification and experience detailed under Part 2, Section VI C ERTS (CMC – RS and DM&P). Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P).	We would like to request CMRL to consider the commencement of CMC start date from completion of DLP/DNP of first train set and shall be applicable for all successive respective TS. For reference in the previous Rolling Stock & Maintenance contracts vide, 'DMRC/RS17- Part B-78 Cars with 15 Years DLMP'& 'BMRCL/5RSDM-318 Cars with 15 Years DLMP) where these contracts have been finalised by respective Metro Authorities with similar terms. The clause may be amended as follows: **Comprehensive Maintenance Contract (CMC): From the date of commissioning of first trainset and up to 15 years thereafter.**	Tender Condition Prevails.
186	Part-3: Section VIII	(Pg-98)	Table 1.1 Summary of Sections: Key Date - Rolling Stock	We would like to request CMRL to modify the delivery period of prototype train for 740 days from commencement date and subsequently, modify the delivery period for balance trains by 100 days each.	Tender Condition Prevails.
187	Part – 3 Section IV	3.2 (Pg-72)	The Price of each 3-car train-set to be supplied against Quantity Variation shall be derived from the contracted cost of the original tendered quantity, against 'RS-C', 'RS-E' and 'RS-F' (in case of indigenous supply).	We would like to request to CMRL to modify this clause as below: The price of each 3-car train set in the contract will vary depending on the quantity ordered. In case of quantity variation, the cost will be 20% higher than the price of the previously supplied train set under the contract.	Tender Condition Prevails.
188	Part-1, Section III	EQC 2.5 (Pg-56)	Subcontractors / Manufacturers	It is noted that minimum criteria have been specified for Subcontractors/ Manufacturers of 9 Major items. Further, it is requirement of the tender conditions that the Bidder is required to submit End Customer experience certificates for the above said items. Please note, with such requirements for getting the Certificates from End Customers is not feasible at Bid stage and may require considerable amount of time extending to double digit months. In view of above constraints, it is proposed that as included in the tender conditions of DMRC/RS17 & BMRCL/5RSDM tenders, this requirement shall be limited for only Propulsion System (Traction Converter, Auxiliary Converter and Traction Motors). Further, it is proposed that experience certificates including end customer certificates can be provided by the Contractor during Design approval stage.	Tender Condition Prevails.
189	Part-1, Section VIII	4.4 (Pg-106)	Where the Contractor had proposed more than One (1) Subcontractor the Employer / Engineer reserves the right to choose the vendor and/or Subcontractor from the proposed list.	We would request CMRL to revise this one-sided requirement and grant the contractor the flexibility to select and execute accordingly. Allowing the Engineer to choose subcontractors or manufacturers could significantly impact the performance of the RS and may result in additional costs for the entire project.	Tender Condition Prevails.

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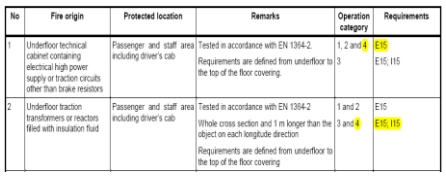
Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
190	Part 2 – Section VI A	2.26.1 (i)	The car interior shall have resistance to fire and conform to EN 45545 (Part 1 to 7), Category 4- A, Hazard level HL3 **and BS 6853** Code of practice for fire precautions in the design and construction of passenger carrying rakes or any other approved international standards.	BS 6853 is withdrawn and superseded by EN 45545. Hence, BS 6853 to be deleted.	Please refer Clause 1.2.4. Tender condition prevails.
191	Part 2 – Section VI A	2.26.1 (iv)	The vehicle floor shall provide a fire barrier of 30 minutes duration tested in accordance with EN45545 Part 1 to 7 (**Category 4-A**, Hazard level HL3) latest editions	As per EN 45545-3 for Category 4 the fire barrier duration is 15 minutes. Extract from the standard is shown below.  Floor Fire barrier duration to be updated as 15 minutes.	Tender Condition Prevails.
192	Part 2 – Section VI A	3.3.1	fire resistance as required by either NFPA 130, BS 6853, EN 45545 or the Japanese Fire Standards, and Chapter 19	Fire resistance requirement to be as per EN 45545 standard for railway application. BS 6853 is superceeded and to be deleted.	Please refer Clause 1.2.4. Tender condition prevails.
193	Part 2 – Section VI A ERTS, Pg. 57	3.4.6.18	The gangway shall be provided with sufficient thermal and acoustic insulation to ensure that the overall air conditioning performance and noise performance of the train are achieved.	The details of attenuation of outside noise through the gangway in particular is not provided. Please provide the same.	Please refer Table 2.9 Tender Condition Prevails.
194	Part 2 – Section VI A ERTS, Pg. 58	3.4.6.21	Gangway Strength: The gangway floor shall be designed to meet the same strength requirements as the rest of car floor. The gangway shall withstand without permanent deformation the following loads: a) A differential pressure between inside and outside of the gangway of ± 2.5 kN / m2.	Request to remove this statement, as the gangways are provide with drain holes as per ERTS 3.4.6.7, differential pressure test for inside and outside of the gangway cannot be performed on gangways with holes. Also, this requirement will be applicable for air tight coaches like high speed trains.	Tender Condition Prevails.
195	Part 2 – Section VI A	3.4.7.9	The total floor structure shall provide an effective fire barrier for a minimum of 30 minutes as per BS 6853, or equivalent	As per the standard EN 45545-3, the fire barrier criteria is E15 & I15 for operation category 4. hence, the fire barrier duration 30 minutes to be revised as 15 minutes.	Tender Condition Prevails.
196	Part 2 – Section VI A	3.4.9.1.1	All glazing shall be of toughened glass and shall comply with DIN 52306 (impact strength) and EN 1288 (bending strength). Structural requirements for rail vehicle structures shall be design and tested conforming with GM/RT2100, UIC 566, EN 12663-1	The requirement of all glazing shall be of toughened glass is contradicting with the clause 3.4.9.1.4 where it is mentioned Body-side windows shall comprise two panes of glass with outer laminated glass and inner nonshattering toughened glass. For the impact strength and bending strength DIN 52306 and EN 1288 is asked. Refering to ERTS clause 1.1.1 - acceptable design standards, the strength of the glass will be as per IS 2553 as followed in other Metros in India.	Please refer Clause 1.2.4. Tender condition prevails.
197	Part 2 – Section VI A	3.4.9.1.6	All glazing materials shall meet the requirements of clause 19.13	At ERTS clause 19.13 the float glass and tempered glass selection is specified as per ASTM C 1036, FS-DD-G-451, SAE-AMS-G-25667, MIL-G-25667. Refering to ERTS clause 1.1.1 - acceptable design standards, the glass specification will be as per IS 2553 asfollowed in other Metros in India.	Please refer Clause 1.2.4. Tender condition prevails.
198	Part 2 – Section VI A	3.4.9.3.1	The cabs shall have watertight look-out glasses on both lateral sides of each emergency operator's desk area; **look-out glasses shall be of the same construction as the body side windows**.	As the lookout glass construction to be same as body side window, the cab window will be fixed type.	Tender Condition Prevails.
199	Part 2 – Section VI A	3.6.1.22	All internal panels (side panels, ceiling panels, end-ceiling panels, inspection cover panels, door coving panels, ceiling coving panels, etc) shall be of aluminium material with proven record in Metro/ EMU application. Coating system shall be proposed by the Contractor shall be proven and conform to the requirements in clause 3.6.1.21, subjected to CMRL approval. Flatness of Aluminium side panels shall be controlled within 0.5 mm per 1m length. The Contractor shall ensure adequate measure have been taken to prevent and mitigate the risk of bi-metallic corrosion and rattling. Suitable damping and Insulation shall also be provided to reduce noise and thermal conductivity especially at metal-to-metal contact points.	Since contour surface or complex surface viz. driver desk, door corner pillart etc., cannot be realised alone with aluminium material, CMRL is requested to add the following statements along with existing statement. "Alternatively, Contractor with the approval of Engineer may use Prepreg panels subjected to meeting the requirements of flammability, toxicity and smoke emission limitations etc. with suitable surface finish, scratch resistance and anti-graffiti properties." or " Alternatively, contractor with approval of Engineer, may use GFRP panels confirming to ASTM D2563- level 1 and NFF 01-281 standards. The colour shall not fade or discolour with time or change due to rubbing. Vacuum infusion process with in-mould heating, Non- Crimp Fabric with Phenolic or FR Grade Vinyl ester Resin (confirming to EN 45545-2), shall be used to get light weight panels having 60% or more fabric by volume". Painting of panels shall not be permitted unless specifically approved by the Engineer.	Tender Condition Prevails.

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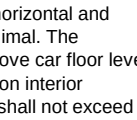
Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
200	Part 2 – Section VI A	3.6.5.15.4	Behaviour of seats at static, fatigue, vibrations, impact stress shall be design, tested as per NFF 31-119 and indentation test shall be design, tested as per ISO 2439. The indentation hardness shall be similar to industry standards. The indentation hardness and depth shall be measured first be tested initially and then at 80,000 cycle intervals	The load criteria is already specified by CMRCL at clause no. 3.6.5.8 as " Each bank of seats shall be mounted on a totally enclosed plinth, capable of carrying an evenly distributed load equivalent to the number of seated passengers per seat bank times the weight of a passenger times a load factor of two (2) without damage or permanent deformation". Hence, the clause 3.6.5.15.4 to be deleted. Further, the NFF 31-119 standard is applicable for the transverse seating arrangement with a maximum of 3 single seats adjacent to each other. The extract of the standard for single seat is as shown below: **3 Definitions** The following definitions are applicable to the requirements of this standard: **3.1 Single seat** Seat having a fixed or adjustable seat component and a fixed or adjustable backrest component. It can have one, two or three single seats that are adjacent to each other.  The seating arrangement in this tender is longitudinal with 7 single seats adjacent to each other. As per the standard definition for the single seat, the NFF 31-119 is applicable for maximum 3 seats. Hence, the NFF 31-119 is not applicable.	Please refer Clause 1.2.4. Tender condition prevails.
201	Part 2 – Section VI A ERTS, Pg. 72	3.14.5.3 (c) & (d)	A suitable proven energy absorption feature with associated collapse features shall be incorporated into the coupler draft gear. The coupler shall sustain no permanent damage for the below scenarios: When 6-car trainset loaded to AW2 loaded condition travelling at up to 10 kmph, colliding with a stationary AW2 loaded condition 6-car trainset with maximum parking brakes applied condition. (Trainsets configuration defined as per clause 2.2.12) When 6-car trainset loaded to AW2 loaded condition travelling at up to 10 kmph, colliding with a stationary AW2 loaded condition 6-car trainset with unbraked condition. (Trainsets configuration defined as per clause 2.2.12)	As per ERTS 1.3.3 there are two possible configuration options for 6-Car train formation. Request to amend this clause to clearly specify which 6-car train configuration to be considered for analysis	Both types of 6-car configuration shall be considered. Tender Condition Prevails.
202	Part 2 – Section VI A ERTS, Pg. 73	3.14.5.6 (iii) & (iv)	The Contractor shall submit a detailed technical analysis to derive predicted values for the following criteria for collision of trainset according to the scenarios stated below: When 6-car trainset loaded to AW2 loaded condition colliding with a stationary AW2 loaded condition 6-car trainset with maximum parking brakes applied condition. (Trainsets configuration defined as per clause 2.2.12) When 6-car trainset loaded to AW2 loaded condition colliding with a stationary AW2 loaded condition 6-car trainset with unbraked condition. (Trainsets configuration defined as per clause 2.2.12)	As per ERTS 1.3.3 there are two possible configuration options for 6-Car train formation. Request to amend this clause to clearly specify which 6-car train configuration to be considered for analysis	Both types of 6-car configuration shall be considered. Tender Condition Prevails.
203	Part 2 – Section VI A ERTS, Pg. 80	4.2.1	CMRL shall operate both 3-car and 6-car rake formations during revenue service.	Out of 96 Cars called in the tender, the split of no. of 3-Car rakes and no. of 6-Car rakes is not specified. This is required to determine the quantity of different types of couplers required viz., - Automatic Couplers and Semi-permanent couplers.	Refer Addendum Sl. No. 22
204	Part 2 – Section VI A ERTS, Pg. 109	7.3.10	Air filter elements shall be replaceable from outside the car.	Air filter elements shall be replaceable from **inside** the car for easy replcement.	Tender Condition Prevails.
205	Part 2 – Section VI A ERTS, Pg. 109	7.3.16	Temperature Distribution: Temperature difference in horizontal and vertical planes spread over full car length shall be minimal. The instantaneous saloon interior temperature at 1.1 m above car floor level shall be 25°C ± 2°C at any given time. The mean saloon interior temperature at 1.1 m (taken over a round-trip period) shall not exceed 25°C. The saloon interior area includes Gangway and Emergency Driver desk areas. The Contractor shall submit details during PFDR.	Temperature Distribution: Temperature difference in horizontal and vertical planes spread over full car length shall be minimal. The instantaneous saloon interior temperature at 1.1 m above car floor level shall be 25°C ± 2°C at any given time. The mean saloon interior temperature at 1.1 m (taken over a round-trip period) shall not exceed 25°C. **The saloon interior area includes Gangway and Emergency Driver desk areas.** The Contractor shall submit details during PFDR. Temperature distribution and measuring points will be as per EN4750	Tender Condition Prevails.
206	Part 2 – Section VI A ERTS, Pg. 110	7.4.3	The air discharge velocities at any outlet grille, shall not create noise disturbing the passengers and shall vary progressively as per EN14750. **Minimum air discharge velocities at any outlet grille shall not be less than 0.5 m/s measured at 300mm below ceiling**. The air intake velocity at the re-circulation and exhaust grilles shall not exceed 3m/s. The minimum volume of fresh air supplied by the artificial ventilation shall be 2.5 liters per second per passenger at AW4 Load. This air shall be filtered. The Contractor may propose design improvements to the above parameters for CMRLs' review and approval.	The air discharge velocities at any outlet grille, shall not create noise disturbing the passengers and shall vary progressively as per EN14750. ~~**Minimum air discharge velocities at any outlet grille shall not be less than 0.5 m/s measured at 300mm below ceiling.**~~ The air intake velocity at the re-circulation and exhaust grilles shall not exceed 3m/s. The minimum volume of fresh air supplied by the artificial ventilation shall be 2.5 liters per second per passenger at AW4 Load. This air shall be filtered. The Contractor may propose design improvements to the above parameters for CMRLs' review and approval. Velocities will be followed as per standard EN14750	Tender Condition Prevails.
207	Part 2 – Section VI A ERTS, Pg. 110	7.4.5.6	In the event of Smoke or fire being present outside the train, arrangements shall be made to prevent the products of combustion being introduced into the saloon and emergency operator's desk areas by shutting off the fresh air inlets and operate in a 100% re-circulation mode. **Irrespective of any smoke, in the event that there is a total loss of 110 V dc power supply to the VAC modules (and therefore no emergency ventilation) the ducting devices shall default to this condition of 100% re-circulation.**	Clarification required for the following clause content: Irrespective of any smoke, in the event that there is a total loss of 110 V dc power supply to the VAC modules (and therefore no emergency ventilation) **the ducting devices shall default to this condition of 100% re-circulation.** We understand that, when there is total loss of 110V DC supply HVAC unit will not be functional. Hence recirculation is not possible. CMRL is requested to recheck the clause requirement and define what is "Ducting device"	**Refer Addendum Sl. No. 25**
208	Part 2 – Section VI A ERTS, Pg. 111	7.4.6.3	During ventilation, the system shall deliver 100% fresh air, and circulate return air throughout the emergency operator's desk area and saloon.	Clarification required for the following clause content: During ventilation, the system shall deliver 100% fresh air, and **circulate return air** throughout the emergency operator's desk area and saloon. It not required to recirculate the return air during ventilation with 100% fresh air. CMRL is requested to recheck the clause requirement and clarify.	Tender Condition Prevails.
209	Part 2 – Section VI A ERTS, Pg. 116	7.11.2	The Contractor shall ensure that the overall design of the VAC System; is able to tolerate the extremely dusty and humid environment which prevails in Chennai to the extent that there is no necessity to clean VAC filters before 12,500 kms or within fewer than 30 days train running; whichever is lower. Minimum expected life of filter shall be 100,000 km. The effectiveness of VAC filters shall be adequate enough to ensure that dust deposition in the air ducts is minimal and won't create cause to need to clean the ducts between major overhauls.	The Contractor shall ensure that the overall design of the VAC System; is able to tolerate the extremely dusty and humid environment which prevails in Chennai to the extent that there is no necessity to clean VAC filters **before 5000 kms or within fewer than 15 days train running;** whichever is lower. Minimum expected life of filter shall be 100,000 km. The effectiveness of VAC filters shall be adequate enough to ensure that dust deposition in the air ducts is minimal and won't create cause to need to clean the ducts between major overhauls. In practice and as per our experience in the previous project, filter cleaning frequency is 15 days or 5000km whichever is earlier. OEM also suggest the filter cleaning frequency of 15days or 5000km to avoid blockage.	Tender Condition Prevails.

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
210	PART- 2 : SECTION VI	11.2.14	There shall be sufficient clearance (minimum 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 as per any of the available standards. 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.
211	PART- 2 : SECTION VI	11.2.21	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 clause 2.26 shall be met.	As the natural rubbers cannot comply to EN 45545 in order to achieve desired suspension characteristics, the clause may please be modified as "… except for the bogie mounted rubber bonded metal components like primary / secondary / bushes".	Tender Condition Prevails.
212	PART- 2 : SECTION VI	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 as per EN15227 which is tested and proved with crashworthiness or the clause may please be updated with the relevant standard.	Tender Condition Prevails.
213	PART- 2 : SECTION VI	11.3.5(a)	The mechanical strength of the bogie frame shall comply with the requirements of UIC 615-4, UIC 515-4, EN 13749 or JIS E 4207 for static test under exceptional loads and fatigue tests. The maximum stress developed under static load shall not exceed 85% of the yield strength of the material. The dynamic effects due to the inertia of the motors and transmission shall also be simulated along with traction and braking forces.	It may please be noted that the traction motor and gear transmission are rigidly mounted to the bogie frame and dynamic effetcts due to inertia is not applicable for rigidly mounted bodies and hence may need not be considered for calculation. Therefore the portion of the clause stating "The dynamic effects due to the inertia of the motors and transmission shall also be simulated" may please be deleted.	Tender Condition Prevails.
214	PART- 2 : SECTION VI	11.4.11 (d)	Hydraulic dampers of suitable capacity shall be provided symmetrically to control and limit the vertical and lateral oscillation of the car body. The damping factors are to satisfy this provision. The damping factor in vertical mode, by wedge test, when tested using a wedge of 18 mm thickness should be between 0.20 and 0.25. The damping factor in lateral mode when measured by quick release side pull test should be between 0.30 and 0.40. Suspension will not be considered acceptable if maximum acceleration and spring displacements do not decay within 2-3 cycles. No leakages of any kind shall be permitted. The design life of the dampers shall be minimum 10 years.	The subject clause is contradicting with the ERTS clause 11.2.4 with regard to the life of dampers. Clarity may please be provided with respect to the same.	**Refer Addendum Sl. No. 31**
215	PART- 2 : SECTION VI	11.4.18	The design of the bogie, including the wheel profile, shall prevent the generation of high Lateral to Vertical force (L/V) ratios on any wheel that could result in derailment under all track conditions defined in Chapter 2, and at all permitted car speeds over the CMRL alignment, up to 10% above the maximum speed permitted, **the L/V ratio shall not exceed 1.0** under railhead coefficient of friction conditions up to and including 0.5. Yard operation and deflated secondary suspension conditions shall also be considered.	As EN 14363 standard is being referred, the highlited portion of the clause may please be modified as follows: **"the L/V ratio is permitted upto 1.2"**	Tender Condition Prevails.
216	PART- 2 : SECTION VI	11.4.18.1	The Contractor shall submit calculations to confirm that the derailment quotient **Y/Q shall not exceed 1.0** under the most adverse conditions, where Y & Q are the instantaneous lateral force on the wheel flange and the instantaneous vertical load on that wheel tread respectively under the most adverse conditions.	Bogie testing will be done inline with EN 14363 and the standard calls for Y/Q ratio not to exceed 1.2. Hence the subject clause may please be modified as follows: The Contractor shall submit calculations to confirm that the derailment quotient **Y/Q shall not exceed 1.2** under the most adverse conditions, where Y & Q are the instantaneous lateral force on the wheel flange and the instantaneous vertical load on that wheel tread respectively under the most adverse conditions.	Tender Condition Prevails.
217	PART- 2 : SECTION VI	11.4.18.2	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 clause 17.5.2.11	The highlighted portion of the clause may please be clarified. Analysis means simulation or testing may please be explicitly specified.	Clause 17.5.2.11 shall be read as 17.5.2.10.11. Tender Condition Prevails.
218	PART- 2 : SECTION VI	11.4.18.3	The Dynamic Analysis, to evaluate the running behaviour of the cars with the proposed bogie design, **shall be carried out by means of theoretical calculations** applying multi-body simulation techniques.	The requirement of theoritical calculations means softare simulations. Please clarify.	Tender Condition Prevails.
219	PART- 2 : SECTION VI	11.4.19	The Contractor shall submit a detailed dynamic model to demonstrate the running behaviour and performance characteristics of the proposed service proven bogie design.	The requirement in the clause is not clear. Generally, a vehicle dynamics analysis report will be submitted. Dynamics model comes under IPR and may not be feasible to share. ~~Even if the model is shared, it requires a specific commercial application to open the model.~~ In view of the abobe, the clause may please be elaborated with regard to the dynamic model requirment along with a reference standard or the clause may please be deleted.	Tender Condition Prevails.
220	PART- 2 : SECTION VI	11.4.20 (c)	**Flexibility coefficient calculation** & test be performed conforming to EN 14363. The Contractor shall measure the following but not limited to flexibility coefficient, roll angle, roll height, lateral movement.	The highlighted portion of the clause may please be clarified with respect to calculations requirement. However it may please be noted that the test will be performed inline with EN14363.	Tender Condition Prevails.
221	PART- 2 : SECTION VI	11.6.4 (a)	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.**	Portion of the ERTS clause stating "Equipment supports shall also be designed to prevent equipment from becoming projectiles" 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 an international standard or requested to delete the portion of the clause.	Tender Condition Prevails.
222	PART- 2 : SECTION VI	11.9.4	The wheel and suspension shall be optimized to minimize squealing in curves, track curves are 120m on mainline and 100m at the Designated Depot(s). **This must be confirmed by test.**	Portion of the ERTS clause stating "This must be confirmed by test." is open without any reference to standards, methodology and criteria. In view of the above, ERTS may please be updated providing the reference to an international standard or requested to delete the portion of the clause.	Tender Condition Prevails.
223	PART- 2 : SECTION VI	11.9.29	Wheels, axles, **gears**, etc., shall be mounted using cold pressure and fits specified in the standard. Axle roller bearing may be mounted in the journal by induction heating. A wheel and axle mounting procedure, complying with standards shall be submitted for CMRL approval.	The highlighted & bold word(gear) may be removed as the same is not mentioned in the standard EN13260" Further, gears are mounted on axle using heat. Therefore the clause may please be modified as below: Wheels, axles, bearings etc., shall be mounted using cold pressure and fits.	Tender Condition Prevails.

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224	PART- 2 : SECTION VI	11.11.4	Control of the WFL System shall be entirely TCMS based. Activation of the oil spray cycle shall be based on the train location. **TCMS shall adjust the cycle duration / quantity of oil deployed based on the train approach speed and degree of curve at that location etc.**	Adjusting cycle duration / quantity of WFL oil spary by TCMS in not a pratical solution. The subject clause is having variables such as train approach speed which is very difficult to predict and doesn't follow a pattern. Also, this requirement will contradict with interoperability clause 2.2.26 with regard to train location. In viewof the above, the portion of the clause stating "TCMS shall adjust the cycle duration / quantity of oil deployed based on the train approach speed and degree of curve at that location etc." may please be deleted. Further, Squealing can be minimized using wheel flange lubrication system. Hence, the clasue may be modifed as below: The wheel flange lubrication system shall be optimized to minimize squealing in curves, track curves are 120m on mainline and 100m at the Designated Depot(s)	Tender Condition Prevails.
225	PART- 2 : SECTION VI	11.11.5	Spray cycles shall be configured to custom profiles for each curve location that is stored on a TCMS database. Each WFL location profile shall be programmable via TCMS to allow for fine adjustment, which the Contractor is required to optimise during service trails.	More clarity on what are the requirements for the custom profiles may please be detailed out. This is possible only if the required custom profile details are shared along with the tender documents. Requested to share the custom profiles or delete the clause.	Custom profiles is referring to the location specific spray cycle that is saved in TCMS. (E.g. after fine tuning by the Contractor during service trails). Tender Condition Prevails.
226	PART- 2 : SECTION VI	11.11.8	The health status of the WFL System; including oil-levels in the reservoir tanks shall be available in TCMS. System Isolation shall also be possible through TCMS in case of malfunction.	There is no proven solution available to display dynamic oil levels in the reservoirs. Hence, requested to update the clause as below "...TCMS will display the oil level low signal when the oil level drops below the set minimum limit…"	Tender Condition Prevails.
227	PART- 2 : SECTION VI	11.11.9	Pneumatic piping shall be stainless steel (grade SUS316LTP) conforming to JIS3459. Oil tanks shall be stainless steel, easily accessible for refilling and **include a vertical sight glass with a scale.**	The highlighted portion of the clause refers to include a vertical sight glass with a scale. It may please be noted that the proven WFL solutions available provides oil with high viscosity which is of grease grades. Hence, the oil may stick on the inner walls of the sight glass hindering the visibility. Hence provision of sight glass will not give the actual level in the reservoir. In view of the above the clause may please be modified suitably.	Tender Condition Prevails.
228	PART- 2 : SECTION VI	11.12.2	All other intermediate bogies shall be equipped with a Derailment Detection (DD) device; providing the same functionality as Clause 11.12.1 but without deflection / detection of obstacles.	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. Also the location of the derailment detection device may please be clearly specified indicating reference to any standard in use for the mentioned application. As 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.
229	PART- 2 : SECTION VI	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 and AW4 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, and additionally wheel unloading testing method & test condition with track twist values of bogie and vehicle body test twist shall conform to method 3 of EN 14363. An alternative design and service proven load equalizationtest 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%.	Clarification required wether the test is same as twist test performed during wheel unloading test.	Tender Condition Prevails.
230	Part 2 – Section VI A	2.14.1 (e)	Table 2-7: Rolling Stock Design Performance Requirements	Minimum Average Service braking rate from 80kmph to standstill for tare (AW0) train on level tangent track may please be defined.	Tender Condition Prevails.
231	Part 2 – Section VI A	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 80kmmh in 247m (+0, -10%) under any Loading Conditions up to AW4. The Contractor shall demonstrate by providing calculations of the minimum adhesion level, required to achieve the stopping distance. **Upon receipt of signal to Brake Control Unit, the application of service brake time should be less than 300 msec.**	ERTS clause 12.18.1 (a) requires application of service brake maximum time to be 2 sec which is contracdictory to the requirement of this clause. Please clarify.	Tender Condition Prevails.
232	Part 2 / Section VI A	2.15.8.10	Software contained within the traction and braking equipment shall be capable of modification to alter the rake performance and capabilities.	The modification involves risk to the safety. The details may be discussed during design stage. The requirement can be rephrased as below "Software contained within the traction and braking equipment shall be capable of modification **with the authorization of OEM/Brake supplier** to alter the rake performance and capabilities."	Tender Condition Prevails.
233	Part 2 – Section VI A	2.15.10.10	The associated EP brake unit shall be of the energize-to-release type and shall contain all the pneumatic items necessary to control all applications of the friction service brakes and emergency brakes.	Generally "service brakes are energize to apply type" and "emergency brakes are energize to release type" . CMRL to review and update the clause suitably.	**Refer Addendum Sl. No. 11**
234	Part 2 – Section VI A	12.2.3 (g)	Wheel slip and slide protection	Wheel slip is controlled by propulsion and is not in the scope of brake system. The clause may be updated as Wheel Slide protection.	**Refer Addendum Sl. No. 3**
235	Part 2 – Section VI A	12.2.7	The brake system shall comply to UIC 544-1 regarding Braking Performances.	The clause may be rephrased as "The brake system shall comply to UIC 544-1 **or EN 13452-1** regarding Braking Performances."	**Refer Addendum Sl. No. 35**
236	Part 2 – Section VI A	12.2.10 (h)	Under conditions of a dragging parking brake for a minimum distance of 3 kilometers at a speed of 10 kmph, 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.	Dragging requirement will limit the safety against rolling under worst case as per ERTS Clause 2.14.3.6 & 12.8.1. Since the clause is contracdictory with above mentioned clauses, it is requested to remove push-out brake requirement. Otherwise it may be detremental to the rolling stock during operation which may result in wheel flat / track damage. In view of the above, requested to delete the ERTS clause.	**Refer Addendum Sl. No. 36**
237	Part 2 – Section VI A	12.2.10 (i)	The Spring Applied Parking Brake (SAPB) shall be an integral part of the friction brake actuation system. **Brake actuators shall be sufficient to permit push-through without any wheel damage.**	Dragging requirement will limit the safety against rolling under worst case as per ERTS Clause 2.14.3.6 & 12.8.1. Since the clause is contracdictory with above mentioned clauses, it is requested to remove push-out brake requirement. Otherwise it may be detremental to the rolling stock during operation which may result in wheel flat / track damage. In view of the above, requested to delete the ERTS clause.	**Refer Addendum Sl. No. 37**
238	Part 2 – Section VI A	12.3.6	Flexible hoses shall be kept to a minimum and be proven in metro train operation. The Contractor shall submit proposals to increase the integrity of the air supply system against rupturing of inter-car flexible hoses. **Burst hose protection shall be provided for hoses**. Armored hoses or a double hose burst protection valve shall be provided in the flexible connections in the parking brake piping along with test reports in compliance with the latest international standard for acceptance by CMRL.	Conventionally burst hose protection will be provided for inter-car fliexible hose for MR line only. "Burst hose protection shall be provided for hoses" may be rephrased as "Burst hose protection shall be provided for **inter-car flexible** hoses" to provide more clarity.	Tender Condition Prevails.

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239	Part 2 – Section VI A	12.3.13	The air supply from the compressor(s) shall be controlled under all operating conditions by high and low-pressure governor switches.	This clasue is contradicting with clause 12.4.5 which says "TCMS shall control cut in and cut out of the compressors based on the feedback of a pressure transducer / governor fitted to the MR pipe." Please clarify and update the clause suitably.	Tender Condition Prevails.
240	Part 2 – Section VI A	12.3.15	The Contractor shall ensure that the pressure leakage from the train under static condition shall not exceed 1 bar / hour. This function shall be tested at contactor's manufacturing facility. The contractor shall ensure this requirement is met throughout the entire design life. Any trends of deterioration of pneumatic integrity shall be remedied by the Contractor through an appropriate modification.	As per international standard (IEC 61133) and practice, the pressure shall not drop below the minimum value compatible with the proper functioning of all the equipment within 20 min. Please update the clause as per International practice.	**Refer Addendum Sl. No. 39**
241	Part 2 – Section VI A	12.4.5	A pressure governor for each compressor shall be provided, which shall be capable of withstanding a pressure not less than the 'open' pressure of the safety valve without damage or deterioration. **TCMS shall control cut in and cut out of the compressors based on the feedback of a pressure transducer / governor fitted to the MR pipe**. Pressure transducers, switches and governors shall be of proven reliability that was demonstrated in previous EMU metro operations. The Contractor shall furnish the reliability figures during the design stage.	Please note Pressure governor/Pressure Switch is a controlling device and cannot be controlled by TCMS. TCMS shall execute the compressor management based on feedback from pressure sensor/transducer only. Please update the clause as below "TCMS shall control cut in and cut out of compressor based on feedback of pressure **transducer/sensor** fitted in MR pipe."	**Refer Addendum Sl. No. 40**
242	Part 2 – Section VI A	12.4.12	Correct functioning and running hours of compressors shall be monitored and recorded by TCMS. A maintenance alarm shall be generated in TCMS if the net air consumption exceeds a given criteria that will be agreed during design stage. The related parameter shall be adjustable.	Please note there is no such proven system of determining the air consumption of train in service. The clause may be reviewed and updated.	Tender Condition Prevails.
243	Part 2 – Section VI A	12.4.13.6	A proven regenerative type of air dryer using desiccant and of a suitable capacity shall be provided between the air compressor and the main reservoir. **The air dryer shall be preceded by an automatic drain valve, which collects and discharges the bulk of the moisture in the compressed air, before it enters the air dryer.** The air dryer shall have IP65 protection.	For oil free compressors it is not required to provide an automatic drain valve before air dryer. The clause may be updated suitably.	Tender Condition Prevails.
244	Part 2 – Section VI A	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.	As per standard parctice in Indian metros, only main reservoir will have provision of automatic drain valve and all other reservoirs will have manual drain cocks. The clause may be reviewed and updated.	Tender Condition Prevails.
245	Part 2 – Section VI A	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.	Generally, if the handle is inline with direction of flow, the cock condition is termed as open. And perpendicular to the flow is termed as closed. In view of above, the clause may be rephrased as " All drain cocks that are fitted shall be easily accessible and the drain cock handles shall point downwards when in the **open** position."	Tender Condition Prevails.
246	Part 2 – Section VI A	12.6.5	In the event of a failure of the dynamic brake, the friction brake shall be capable of carrying out **three (3)** consecutive emergency brake applications from maximum speed down to standstill of a rake in the Crush Loading condition. The rake shall be deemed to then accelerate at its maximum rate up to maximum speed after each stop.	Three consecutive emergency brake at maximum speed and crush loading will lead to temperatures beyond the acceptable limits. Therefore the requirement may please be changed as "In the event of a failure of the dynamic brake, the friction brake shall be capable of carrying out **two (2)** consecutive emergency brake applications from maximum speed down to standstill of a rake in the Crush Loading condition. The rake shall be deemed to then accelerate at its maximum rate up to maximum speed after each stop."	Tender Condition Prevails.
247	Part 2 – Section VI A	12.6.8.3	The electric regenerative brake shall be independent for each Motor Car and faults on one car shall not adversely affect the braking performance on the other car. Each Bogie of the rake shall have independent Brake Electronics with independent Electro Pneumatic brake control. **Detection of Wheel slip & Wheel slide and its protection control shall be per individual axle based.**	Wheel slip is controlled by propulsion and is not in the scope of brake system. The clause may be updated accordingly for brake system scope.	**Refer Addendum Sl. No. 41**
248	Part 2 – Section VI A	12.6.8.10	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.	All the pneumatic control equipment and safety valves will not be mounted in enclosed lockable boxes Hence, this clause may be reviewed and updated to "pneumatic control equipment and valves having electrical contact or switches shall be mounted in the enclosed lockable boxes……..."	Tender Condition Prevails.
249	Part 2 – Section VI A	12.6.8.14	A proven speed sensor having 2 channel mounted on the cover of each axle box shall be provided for Wheel slide protection, **Train speed measurement** and for any other function decided by CMRL during the design phase.	Speed sensor provided by brake system OEM will be used only for WSP application. Clause may be reviewed and updated for removal of requirement of Train speed measurement from the scope of brake system. Also, "for any other fucntion" is a very generic requirement. The clause may please be updated with specific requirement or may be deleted.	Tender Condition Prevails.
250	Part 2 – Section VI A	12.6.9.11	Complete friction brake system shall be tested on Brake dynamo-meter and validated during field tests.	Brake dynamometer test is applicable for the following equipments/items only: •brake disc or wheel •brake pads or blocks •brake caliper or tread brake unit For requirement to be specific, ERTS clause may be updated.	Tender Condition Prevails.
251	Part 2 – Section VI A	12.7.1 (d)	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 block close to the wheel tread and/or disks but shall not contribute to any braking effort or cause wear to the pads.	It is not recommend to keep 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. It is requested to delete the clause.	Tender Condition Prevails.
252	Part 2 – Section VI A	12.8.5	The parking brake force on individual axles shall not be so large as to inhibit emergency rake recovery or to give rise to locked wheels during recovery. The maximum wheel / rail adhesion level to be assumed for the "push-out"requirement shall be 0.16	Push-out requirement will limit the safety against rolling under worst case as per ERTS Clause 2.14.3.6 & 12.8.1. Since the clause is contracdictory with above mentioned clauses, it is requested to remove push-out brake requirement. Otherwise it may be detremental to the rolling stock operation which may result in allow wheel flat / track damage. In view of the above, requested to delete the ERTS clause.	**Refer Addendum Sl. No. 42**

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253	Part 2 – Section VI A	12.9.2	The below listed 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 cylinders d) 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 h) The pressure of Auxiliary compressor (used for raising pantograph)	These requirements are not an optimal system for a rolling stock. Only critical systems pressure shall be monitered at TCMS. Other interlocks via Pressure switches will be monitered by TCMS in case of any failure. Clause may be reviewed and updated accordingly.	Tender Condition Prevails.
254	Part 2 – Section VI A	12.15.5	The Contractor shall interface with ARE03a / ARE04 Contractor(s) to ensure that full compatibility of train rescue functionality is achieved. The same shall be demonstrated during at type test stage	Since the requirement mentioned is to interface with ARE03a/ARE04 contractors, all interface control documents and design details shall be shared along with the tender document for understanding the design and financial assesment of the contract.	**Refer Addendum Sl. No. 43**
255	Part 2 – Section VI A	12.17.1	The build-up of pneumatic brake force shall be jerk limited (for changes in brake demand) to increase passenger comfort. The jerk limitation shall be 0.7+0.05 m/s3. This limit shall also be respected at the time of final stoppage also.	Stopping jerk is not in scope of brake system and it needs to be controlled by the train operator and / or signaling supplier. Clause may be reviewed and updated for removal of stopping jerk control from the scope of brake system.	Tender Condition Prevails.
256	Part 2 – Section VI A	12.19.1	The brakes system shall comply with the following SIL levels: Emergency Brakes → SIL 4; Service Brake, **Train Speed information**, Wheel Slide Protection, Holding brake application & Feedback → SIL 2;	Device used for train speed measurement is used by brake system OEM is for WSP application only. Clause may be reviewed and updated for removal of requirement of Train speed measurement from the scope of brake system.	Tender Condition Prevails.
257	Part 2 / Section VI A	14.2.4	All the End Devices shall support dual-homing type or any latest technology type of Ethernet connections to ECN via physically independent ports to increase system reliability and availability. All digital and analogue Input / Output interfacing with TCMS (directly or via an interface unit) shall also be fully redundant. In any case, the Contractor shall maintain full system availability, in case of single point failure of any TCMS component or communication link, and the vehicle operation shall not be affected.	It is requested to modify the clause as below "All the End Devices shall support dual-homing type or any latest technology type of Ethernet connections to ECN via physically independent ports or **by any alternate means** to increase system reliability and availability….."	Tender Condition Prevails.
258	Part 2 – Section VI A	14.9.5 (b)	Single Point Upload of all software of the train b) The overall time required for uploading the software for all subsystems shall not be more than **10 minutes** for each complete sub-system of train and the same shall be demonstrated. (Ex. In case of doors sub-system, the time requirement is collectively for all doors of one train)	Single point uploading of software can be done through network switch. Request to rephrase the clause as following: b) The overall time required for uploading the software for all subsystems shall not be more than **30 minutes** for each complete sub-system of train and the same shall be demonstrated. (Ex. In case of doors sub-system, the time requirement is collectively for all doors of one train)	Tender Condition Prevails.
259	Part 2 – Section VI A	17.5.3.4.3	Brake System Environmental Qualification Test A test setup in an approved environmental laboratory shall be made to simulate the worst-case climatic conditions to be encountered during revenue service and shall include conditions of rapid temperature and humidity fluctuations. Each cycle shall be completed within 30 seconds. During environmental testing, system function, ambient temperature, and humidity shall be recorded.	Generally, major components of brake system are tested for environmental qualification individually. In view of the above, requested to update the ERTS clause suitably to provide more clarity.	Tender Condition Prevails.
260	Part 2 – Section VI A	17.5.4.8.10	Parking Brake Test A parking brake system test shall be performed on one three car rake. Design compliance with Chapter 2 shall be demonstrated by measuring the force required to move the train with the parking brake applied. The test shall be performed with bedded-in brake shoes. Push out test shall be performed in dry condition to prove clause 12.8.5. During this test, all wheels should rotate and shall not slide.	Push-out requirement will limit the safety against rolling under worst case as per ERTS Clause 2.14.3.6 & 12.8.1. Since the clause is contracdictory with above mentioned clauses, it is requested to remove push-out brake requirement. Otherwise it may be detremental to the rolling stock operation which may result in wheel flat / track damage. In view of the above, requested to delete/update the ERTS clause suitably.	**Refer Addendum Sl. No. 50**
261	Part 2 – Section VI A	19.54.3 (i)	Dry heat test: The dry heat test shall be conducted for class T3 and temperature shall be considered 80ºC against 70ºC specified in IEC/EN. An extra performance check at 95°C shall also be carried out for 10 minutes over temperature value. LCD / LED display units may be tested at 70ºC and an extra performance check at 85°C shall also be carried out for 10 minutes over temperature value	Brake electronic devices only comply EN standard. That means +70°C permanently and +85°C for max. 10 minutes according to the temperature profile defined in the norm. With a longer time at T>+70°C the functioning of the electronic equipment is not guaranteed. Hence this requirement may be changed as **given for standard IEC clause without increasing the temperature**	Tender Condition Prevails.
262	Part 2 – Section VI A	19.55.6	The Contractor shall furnish the following information in respect of printed circuit boards as part of contract: a) Voltage and/or waveform expected at each critical test point. b) Instructions for carrying out testing and troubleshooting and the function of each circuit block. c) Block Diagram and functional descriptions of the PCBs. d) Connection or interfacing diagrams for the printed circuit boards and assemblies.	Voltage/Wave form of electronic circuit is proprietary information and cannot be shared. Based on prior experience, OEMs will only provide standard documents. Intellectual Property like flow charts, signal flows, logic, and interpretation of signal, Block Diagram and functional descriptions of the PCBs etc. will not be shared by sub-contractor/OEMs. Clause may be reviewed and updated accordingly.	Tender Condition Prevails.
263	Part 2 – Section VI A	6.9	DualMode detrainment Door	There is no proven solution available for dual mode detrainment door operation in case of evacuation of passengers in UTO . Hence, requested to update the clause as below ".Detrainment door with only evacuation from train to track"	Tender Condition Prevails.
264	Part-2 Section VI A ERTS	6.7.4.2	Once this button is pressed in any UTO & non-UTO modes, the corresponding doors shall be kept open for longer time increasing dwell time of the train.	This clause maybe suitably modified as per below, Once this button is pressed in any UTO & non-UTO modes, the corresponding doors shall be kept open **when train is at standstill** for longer time increasing dwell time of the train.	Tender Condition Prevails.
265	Part-2 Section VI A ERTS	6.8.7	Activation of the isolation switch shall illuminate the cab indicators to signify that a door is isolated. Indication of the exterior door indicator lamp shall continue to show the correct status of the doors on that car as per clause 8.4.4; consequently, the exterior lamp of the respective offending car where the fault occurs shall remain illuminated as per clause 8.4.3.	This clause maybe suitably modified as per below, Activation of the isolation switch shall illuminate **train active side** the cab indicators to signify that a door is isolated. Indication of the exterior door indicator lamp shall continue to show the correct status of the doors on that car as per clause 8.4.4; consequently, the exterior lamp of the respective offending car where the fault occurs shall remain illuminated as per clause 8.4.3.	Tender Condition Prevails.
266	Part-2 Section VI A ERTS	19.36.13	Fire resistant cables shall be proposed for circuits, which should survive for long periods during fire, as per applicable international standards. As a minimum, the cables and wires for Public Address System, emergency lighting, door opening and warning systems shall be fire resistant in compliant to EN 50200 PH15 & EN 50200 PH90.	This clause to be clarified whether proposed circuits for train side only or it includes sub-system also	**Refer Addendum Sl. No. 56**

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267	Part-2 Section VI A ERTS	2.8.1	The Kinematic Envelope of the Car shall be in accordance with Schedule of Dimensions in Appendix D. The Contractor's calculations of the static and kinematic envelope of the vehicle shall be calculated in accordance with UIC 505 and/or equivalent International Standard. The vehicle and attached equipment shall be designed to operate within the Kinematic Envelope shown in Appendix D, under all worst conditions of speed, passenger load, sway, roll, side play, wear, including wheel and rail wear and failures other than structural failures on level tangent track. The method and details o	The method of calculation is left to the rolling stock supplier as the vehicle profiles are optimized to ERTS requirements and will not necessarily follow UIC standards. Hence, the requirement of UIC 505 may please be deleted. Instead, the clause may be revised as below: The Kinematic Envelope of the Car shall be in accordance with Schedule of Dimensions in Appendix D. The Contractor's calculations of the static and kinematic envelope of the vehicle shall be submitted for approval of CMRCL which will be verified during main line vehicle tests. The vehicle and attached equipment shall be designed to operate within the Kinematic Envelope shown in Appendix D, under all worst conditions of speed, passenger load, sway, roll, side play, wear, including wheel and rail wear and failures other than structural failures on level tangent track.	Tender Condition Prevails.
268	Part-2 Section VI A ERTS	2.8.4	The Contractor shall perform tests as specified in Chapter 17 to demonstrate compliance with the static and kinematic clearance requirements.	CMRL may please specify any specific standards to be referred for testing	Tender Condition Prevails.
269	Part-2 Section VI A ERTS	11.5.3 (f)	Coupling shall not have resonance noise during coasting.	The clause may please be deleted as coupling noise in isolation can not be measured. Moreover, it's the gearbox-traction motor noise levels that supercede.	It is clarified that, compliance with this clause can be demonstrated by proving that the system as a whole shall not create any resonance noise during Coasting. Tender Condition Prevails.
270	Part-2 Section VI A ERTS	11.9.2	The wheel tread shall be of the wear adapted wheel profile S 1002 / h28 / e32.5 / 6.7% as defined in EN 13715. The Contractor shall undertake a wheel-rail interaction / simulation study to optimally derive all other wheel parameters within the range permitted by the SOD. Track parameters are specified in the Interface Requirements (Appendix-C) and the alignment drawings.	the wheel parameters will be as per EN13262 and applicable EN standard. Hence the clause may be suitably modifed as below: The wheel tread shall be of the wear adapted wheel profile S 1002 / h28 / e32.5 / 6.7% as defined in EN 13715. The Contractor shall undertake a wheel-rail interaction / simulation study to optimally design wheel. Track parameters are specified in the Interface Requirements (Appendix-C) and the alignment drawings.	Tender Condition Prevails.
271	Part-2 Section VI A ERTS	11.9.5	Wheel hubs shall incorporate a bore hole / port for connection of hydraulic special tooling used to aid the removal of wheels during maintenance. Wheels shall also be balanced according to UIC requirements.	Wheel designed as per EN standards will be balanced as per EN standard. Hence the clause may be modifed as below: Wheel hubs shall incorporate a bore hole / port for connection of hydraulic special tooling used to aid the removal of wheels during maintenance. Wheels shall also be balanced according to UIC/EN requirements or any other international standard.	Please refer Clause 1.2.4. Tender condition prevails.
272	Part-2 Section VI A ERTS	11.9.6	Wheelsets shall be provided with a Noise Damping System; capable of reducing both "rolling noise" and "curve squeal". The Contractor shall propose a service proven design for CMRL's approval no later than pre-final design stage.	The clause may please be deleted as bogies with disc brake system inherently are less noise producing that TBU. A noise damping system is not needed with disc brake type bogie.	Tender Condition Prevails.
273	Part-2 Section VI A ERTS	11.9.10	The Contractor shall propose an appropriate list of tests to be carried out on free-standing (E.g. not installed on a Bogie Frame) wheelsets in accordance with applicable standards for CMRL's review and acceptance. Inclusion of electrical resistance testing between each wheel, measurement of the wheel profiles and inspection of the axles will be mandatory.	The clause may please be modified as below: The Contractor shall submit procedure for testing of wheelset in situ for review of CMRL as per applicable EN/UIC or any other international standard.	Tender Condition Prevails.
274	Part-2 Section VI A ERTS	11.9.16	The Contractor shall furnish the extreme maintenance limits for wheels according to UIC standard. The Contractor shall provide a re-profiling program in order to optimize the life span during the design stage and it shall be verified during the operation.	The clause may please be modifed as below: The Contractor shall furnish the extreme maintenance limits for wheels according to UIC/EN or any other international standard.	Please refer Clause 1.2.4. Tender condition prevails.
275	Part-2 Section VI A ERTS	11.9.25	Axle bearing boxes shall be isolated with respect to secure the bearing from electrical shocks.	The clause may please be modified as below: Axle bearings shall be protected from high traction return current through suitable earthing arrangement. The eathing scheme shall be submitted for review & approval of CMRL.	Tender Condition Prevails.
276	Part-2 Section VI A ERTS	11.9.27	The Contractor shall submit drawings detailing the wheel & axle set dimensions for review and approval. Additionally, drawings detailing wheel set position and contact points at the wheel / rail interface on tangent, curved and special track work shall be submitted for review and approval.	Position of wheel set and contact point on rail etc is not a practical requirement as dynamic analysis will vet the stability of the rolling stock. The clause may please be modified as below: The Contractor shall submit drawings detailing the wheel & axle set dimensions for review and approval.	Tender Condition Prevails.
277	Part-2 Section VI A ERTS	11.9.28	Calculations of axle static and fatigue strength shall be submitted to CMRL approval for all axle designs.	Calculationsare done only for static strength. Hence the clause may please be modfied as below: Calculations of axle strength shall be submitted to CMRL for approval.	Tender Condition Prevails.
278	Part-2 Section VI A ERTS	11.9.30	Axles shall be of hot-rolled steel, normalized and tempered after rough machining, shall provide suitable strength, and shall have a design fatigue life of at least 35 years.	The design of axles for 35 years is scope of the rolling stock supplier. Hence the clause may please be deleted	Tender Condition Prevails.
279	Part-2 Section VI A ERTS Appendix-C	2.4.40	Ground based hot axle box detection for monitoring of axle box temperature shall be provided in mainline by Rolling Stock Contractor and shall be installed specific to each corridor. The ground equipment shall be provided by RS Contractor. The server for storage of the information shall be placed by RS Contractor at the nearest station's Telecom Equipment Room. This ground based hot axle detection system shall be integrated with RTR-DMS by the RS Contractor. The communication network path from the station server to the OCC shall be provided by the STC Contractor. The power from UPS as well as network cabling from the equipment to the Signalling network switch is the responsibility of the RS Contractor.	The clause may please be modifed as below: Ground based hot axle box detection for monitoring of axle box temperature shall be provided in mainline by Rolling Stock Contractor and shall be installed specific to each corridor. The ground equipment shall be provided by RS Contractor. The server for storage of the information shall be placed by RS Contractor at the OCC. This ground based hot axle detection system shall be integrated with RTR-DMS by the RS Contractor. The communication network path from the station telecom equipment room (TER) to the OCC shall be provided by the STC Contractor. The network cabling from the ground based system to TER and requisite server with software at OCC is the responsibility of the RS Contractor.	**Refer Addendum Sl. No. 58**
280	Part-2 Section VI A ERTS Appendix-C	17.5.2.16	Traction Gear Unit Qualification Testing:	The gear units are designed by suppliers for optimal performance based on internal design and therfore the testing is based on experience for performance guarantee. Hence the clasue may please be modifed as below: The traction gear units shall be subjected to testing based on international practice. The test specification for the testing shall be submitted to CMRL for review & approval.	**Refer Addendum Sl. No. 49**
281	Part 2 / Section VI C	1.1.9	Designated Depot(s) refers to (i) Semmancheri Depot, (ii) Madhavaram Depot, AND (ii) an additional Satellite Satellite Depot(s) Whereas, the RS Maintenance Depot specifically refers to the principal depot site that will be allocated for the undertaking major fleet maintenance activities on the ARE04A fleet throughout the CMC Period. The location will be confirmed by CMRL before Contract award. Other Designated Depot sites (E.g. those not nominated as the RS Maintenance Depot) shall be allocated for the undertaking of light maintenance activities; such as inspection, cleaning and corrective maintenance.	Number and location of satellite depots shall be defined in the tender for maintenance cost estimation.	It is clarified that throughout the CMC Period, CMRL shall only ever allocate one (1) depot at anyone time to be the "RS Maintenance Depot" for undertaking major maintenance activities. Similarly, there shall only ever one (1) satellite depot allocated at anyone time for undertaking the listed light maintenance activities. Tender Condition Prevails.

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282	Part 2 / Section VI A	2.2.26	The Contractor shall identify and implement any design and/or interface Works required to ensure the ARE02a Rolling Stock fleet achieves the following objectives for interoperability:- a) The fleet shall serve all three (3) corridors of the CMRL Phase-2 network b) Be capable of running in mixed traffic operational diagrams; alongside up to two (2) additional fleet variants of passenger Rolling Stock as well as maintenance vehicles c) Have limited cross-compatibility with other passenger Rolling Stock fleets (ARE03a/ARE02A) to the extent that is defined by the technical requirements elsewhere in this Contract (E.g. emergency train rescue requirements). d) Complies with any other interoperability requirements identified during the course of coordinated interface Works with other Designated Contractors (as defined in Appendix-C) or as may be required to ensure the safe operation of the railway.	Compatibility between the Rolling Stocks of different corridors - Compatiblity cannot be ensured, if rolling stock suppliers are different since On-board Systems and external interfaces with way-side systems will be different. It is understood that coupled train operation (different fleet) for revenue service is not required as per ERTS. e.g.: (DM-T-DM)+(DM-T-DM). The interface between different subsystem suppliers of different rolling stock for the communication between operators of two trians as per cl. no. 9.10 will be complicated to meet the requirement of cl. no. 2.2.26 c). As emergency trian rescue being a degraded mode, same shall be managed through handheld radio In addition, the Rake manufactured for Line 4 under the Phase 2 contract (ARE03a) will not couple with the Rake designed for other Lines (ARE02a/ARE03A) to make the connection between TCMS/PAPIS-CCTV/other on-board Communication Consist Networks. **Please clarify/confirm.**	It is clarified that there is no requirement for consists of different fleets to couple together for revenue operation. Coupling of differing fleet consists would only arise during an emergency train rescue scenario. In such a scenario, there is no requirement for subsystems such as TCMS, PAPIS and CCTV to function on the consist under rescue. Tender Condition Prevails.
283	Part 2 / Section VI A	19.36.11	Stranding and conductor construction for all wires and cables 0.75 mm2 Cross sectional area of conductor and larger shall comply with NEMA-WC7. Stranding and conductor construction for all wires and cables of 0.75 mm2 Cross sectional area of conductor and larger shall comply with AAR S-501 or ICEA S-66-524, as is appropriate for the application, Class I or equivalent for general-purpose Car body wire, and ASTM B174, Class K for flexible wire between the Car body and electric coupler or bogie-mounted equipment	Stranding and conductor construction for all wires and cables 0.75 mm2 Cross sectional area of conductor and larger shall comply with NEMA-WC7 or Equivalent international standards applicable for Rollingstock application as per standard industry practice... Stranding and conductor construction for all wires and cables of 0.75 mm2 Cross sectional area of conductor and larger shall comply with AAR S-501 or ICEA S-66-524, as is appropriate for the application, Class I or equivalent for general-purpose Car body wire, and ASTM B174 or Equivalent international standards applicable for Rollingstock application as per standard industry practice., Class K for flexible wire between the Car body and electric coupler or bogie-mounted equipment.	Please refer Clause 1.2.4. Tender condition prevails.
284	Part 2 / Section VI A	19.38.2	Rubber, thermosetting, irradiated, cross linked polyolefin and thermoplastic-insulated wire and cable shall comply with the electrical and physical requirements of NEMA WC3, NEMA WC5, and NEMA WC7	Rubber, thermosetting, irradiated, cross linked polyolefin and thermoplastic-insulated wire and cable shall comply with the electrical and physical requirements of NEMA WC3, NEMA WC5, and NEMA WC7 or international standards like EN 50264(Part 1 to 3) and EN 50306(Part 1 to 4) or Equivalent standards applicable for Rollingstock application as per standard industry practice.	Please refer Clause 1.2.4. Tender condition prevails.
285	Part 2 / Section VI A	19.39.2	Wire and cables up to and including of 10mm2 Cross sectional area of conductor shall pass the test specified in of AAR S-501, Section 5.9.4.	Wire and cables up to and including of 10mm2 Cross sectional area of conductor shall pass the test specified in of AAR S-501, Section 5.9.4. or EN 50305 or Equivalent international standards applicable for Rollingstock application as per standard industry practice.	Please refer Clause 1.2.4. Tender condition prevails.
286	Part 2 / Section VI A	19.39.3	16 mm2 and larger shall pass the test specified in IEEE 383, Section 2.5.	16 mm2 and larger shall pass the test specified in IEEE 383, Section 2.5.or EN 50305 or Equivalent international standards	Please refer Clause 1.2.4. Tender condition prevails.
287	Part 2 / Section VI A	19.44.1	COMMUNICATIONS WIRE AND CABLE Communications wire and cable shall consist of twisted pairs of not less than 0.75 mm2 Cross sectional area of conductor soft annealed, tinned copper.	Communications wire and cable shall consist of twisted pairs of not less than 0.5 mm2 Cross sectional area of conductor soft annealed, tinned copper.	Tender Condition Prevails.
288	Part 2 / Section VI A	9.4.2	9.4.2 Emergency loads or Safety loads or essential loads shall include, but not be limited to: a) All Safety Critical circuits (e.g. emergency brake); b) Passenger door controls / operation. c) All exterior lighting of train. d) All exterior & interior indicating lights of train. e) Cab interior lights. **f) Complete saloon lighting (100% lights)** g) Complete communication equipment. h) ATO / ATP / UTO (GoA4) train borne signaling & telecom equipment control.	f) In case of emergency, 100% lighting may not be required and it increases Battery sizing as well. Hence 9.4.2 (f) may please be ammended as "**Emergency lighting" (50% of saloon lights)** in-line with recent metro tenders in India.	Tender Condition Prevails.
289	Part 2 / Section VI A	10.11.15	Four (4) trains shall be instrumented (in accordance with EN 50463) with separate Power Quality measuring instruments, data acquisition systems and power analyser (with provision for permanent installation and shall have necessary in-built software / analysis tool) to measure, record and analyse 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 analyse 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.	The Energy Measurement System described by the EN 50463:2017 series provides measurement and data suitable for billing and may also be used for energy management, e.g. energy saving. The Energy Measurement System EMS provides measurement of the consumed and regenerated active energy of a railway traction unit. If the traction unit is designed for use on AC traction systems the EMS shall also provides measurement of reactive energy. The EMS generally consists of the five main functions: 1) Voltage Measurement Function VMF, 2) Current Measurement Function CMF, 3) Energy Calculation Function ECF 4) Data Handling System DHS 5) Communication Function EMS - DCS From the above, it is understood that EN 50463 basically dictates the Energy Measurement of the train or its units for the purpose of metering and billing. However, the clause 10.11.15 calls for Harmonics recording upto 50th Order with sampling rate of 100k per sec with accurancy of 0.1%. Considering the above, please remove the compliance requirement to EN 50463 for power quality measuring system.	**Refer Addendum Sl. No. 29**
290	Part 2 / Section VI A	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 analyse 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 analyser, software / analysis tool shall be built in. However, final approval will be provided by CMRL by comparing both proposals.	Please keep the 'Power quality parameters measurement through TCMS' as 'an option' instead of 'preferred'.	Tender Condition Prevails.
291	Part 2 / Section VI A	13.13.5	In addition to the cameras provided inside the saloon, the Contractor shall install cameras outside the saloon to monitor the track, OHE, pantograph and platforms of each station.	Whether the following are part of the clause? (i) Digital Line scan camera basedTrack condition monitoring systems (ii) Digital Line scan camera basedOHE condition monitoring systems and (iii) Current Collection Performance Measurement System	Tender Condition Prevails.
292	Part 2 / Section VI A	13.2.15	All memory storage system shall be Solid State Disk (SSD) or Micro SD card or other latest technology available subject to CMRL approval.	Required storage type is to be clearly specified (no options to be provided to the bidder) as it effect the bidding cost drastically.	Tender Condition Prevails.

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293	Part 2 / Section VI A	13.7.1.5	Control of all displays in a train shall be possible from the TCMS, OCC, BCC and DCCs.	Control of all displays in a train shall be possible from the **CCH**, OCC, BCC and DCCs.	if Bidder propose to communicate from CCH to TCMS, it would be acceptable. Tender Condition Prevails.
294	Part 2 / Section VI A	13.7.1.14.2	Each DRMD unit shall be a single display screen with a stretched aspect ratio. The minimum dimensions shall be 48 inches corner to corner. The use of multiple screens joined together shall not be accepted.	Viewing area of the display to be mentioned instead of overall dimensions. Clause may be updated accordingly.	Tender Condition Prevails.
295	Part 2 / Section VI A	13.7.1.15.1	LCD with LED backlit displays or any latest better technology displays shall be provided at both ends of the train above the windshield and side displays shall be provided on each side of the carbody (each covering a full window length) to indicate the destination station and route information. The message shall be displayed in both English and Tamil simultaneously.	LED displays are preferred as external displays as LCDs cannot be viewed in the sunlight. Clause may be updated accordingly.	Tender Condition Prevails.
296	Part 2 / Section VI A	13.7.1.15.4	The exterior display size shall be approved by the CMRL during design stage.	Required matrixes and LED pitch to be mentioned. Clause may be updated accordingly.	Tender Condition Prevails.
297	Part 2 – Section VI A	Appendix C – Interfaces- 14.1	OTHER ROLLING STOCK CONTRACTOR	It is suggested to interface for other Rolling Stock information through Employer (CMRL) and not to consider them as designated contractor. It is requested to update the relevant clauses accordingly.	Tender Condition Prevails.
298	Part 2 – Section VI A	19.52.3	Very low current relays (1 Amp and less) shall have gold-plated, silver-alloy contacts.	**The following change is suggested.** Very low current relays (1 Amp and less) shall have gold-plated **/** silver-alloy contacts.	Tender Condition Prevails.
299	Part 2 – Section VI A	19.51.5	Breaker current rating shall be clearly visible after installation and shall comply with NEMA AB1, ANSI C37.13, C37.14, or C37.16.	Breaker current rating shall be clearly visible after installation and shall comply with NEMA AB1, ANSI C37.13, C37.14, or C37.16 or practices followed in other Metro Rolling Stock.	Please refer Clause 1.2.4. Tender condition prevails.
300	Part 2 – Section VI A	19.52.4	Low-current and very low-current relays that have not been proven in rail service shall comply with MIL-R-5757.	Low-current and very low-current relays that have not been proven in rail service shall comply with MIL-R-5757 or practices followed in other Metro Rolling Stock.	Please refer Clause 1.2.4. Tender condition prevails.
301	Part 2 – Section VI A	19.52.5	Higher-current relays and contactors that have not been proven in rail service shall comply with MIL-R-6106.	Higher-current relays and contactors that have not been proven in rail service shall comply with MIL-R-6106 or practices followed in other Metro Rolling Stock.	Please refer Clause 1.2.4. Tender condition prevails.
302	Part 2 / Section VI A	13.8.4	The automatic announcement function shall use locally stored predefined digital messages and shall broadcast these messages to passengers automatically at designated track locations by means of location and direction information derived from signaling system and also an independent Rolling stock vehicle locator system. Overriding automatic messages by manual message triggering by the operator shall also be possible.	Please clarify what is "independent Rolling stock vehicle locator system" referring to?	The "Independent Rolling stock vehicle locator" system refers to TCMS providing train location, route and direction information to the PAPIS system. This is a fallback feature which will continue to function in cases where data from Signalling is not available. Tender Condition Prevails.
303	Part 2 / Section VI A	13.13.6	All the interior and exterior cameras shall support for a video resolution of minimum 1920x1080 HD and minimum 30 frames per second, minimum illumination of 0.3 lux (color), iris control, minimum 90 dB wide dynamic range (WDR) and Power Over Ethernet (POE) compliant. Cameras shall be of proven design in railway applications. The recordings from these cameras must be clear in dark, daytime, night-time and in all hours of operation even in case of nonavailability of any exterior lighting. All the train cameras shall be Infra-red type or latest better type. Camera and Recorder shall comply CCTV Industry standards like onvif. The Visual images from each camera shall be recorded in non-volatile memory without any limitation of repetitive writing of the data. Each camera shall have recording capacity for at least 7 days. The records shall be easily downloadable.	Please clarify that the infra red requireement will only be for external pantograph camera and not mandatory for all internal saloon camera?	**Refer Addendum Sl. No. 48**
304	Part 2 / Section VI A	13.13.8	In case of activation of PEI in any of the car by passenger, the camera recording focusing the PEI shall be displayed on the CCTV monitoring screen available in OCC, BCC & DCC and also in TCMS of the specific train. The cameras shall have inbuild zoom function. It shall be possible to filter, zoom and select images in off line mode for investigation purpose. The images shall be with time stamping and it shall be possible to link them with respective location of train.	Please clarify the "in-build zoom function" refers to zooming on a recorded video for investigation purposes?	Tender Condition Prevails.
305	Part 2 / Section VI A	13.13.17	Cameras, NVR, Video management software's etc. shall implement band width optimization techniques like multicast transmission, modern codecs (e.g. H.265 or higher) for the efficient and reliable use of wireless network bandwidth available	Please clarify on the codec requested of H.265, if the contractor can propose with codec of H.264 and H.264+?	Tender Condition Prevails.
306	Part 1, -Section - IV	Bidding Forms 4.4.11	PRICE CENTRE 'RS-H' – TRAINING AND MANUALS. RS-H0 - i) the site of an Operating Railway (must be part of a network that has provided GoA-4 / UTO operations for a period >10 years)	***The following change is suggested.*** *Part-1, Section - III - EQC - 2.5 - 5 TCMS - Form Sys-5 -* *"The proposed system shall be in satisfactory revenue operation for* ***minimum three (3) years*** *in GoA4 trains, in a country other than the country of origin of manufacturer or in India, at the time of bid submission."* *14.1.2 Proven Design* *Basic architecture and hardware of TCMS proposed to be implemented / used by the Contractor should already be functioning in Metros since last* ***more than three years in revenue service*** *and shall be compliant with latest version of international norms.* PRICE CENTRE 'RS-H' – TRAINING AND MANUALS. RS-H0 - i) the site of Employer's Site/Depot ~~an Operating Railway~~ (must be part of a network that has provided GoA-4 / UTO operations for a period > 3 ~~10~~ years)	Tender Condition Prevails.
307	Part-2 Section VI A ERTS	14.12	ENERGY CONSUMPTION MEASUREMENTS	HVAC energy measurement (Powering, Coasting & Braking) may be deleted as the HVAC being the major load of Auxiliary Power Supply (SIV) and Energy consumption measurements are measured at SIV ((Powering, Coasting & Braking). Request to ammend the clause accordingly.	Tender Condition Prevails.

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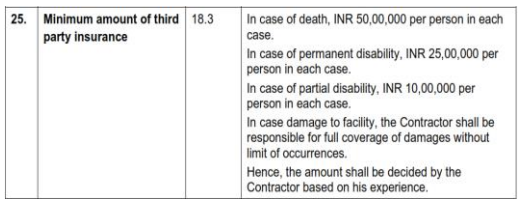
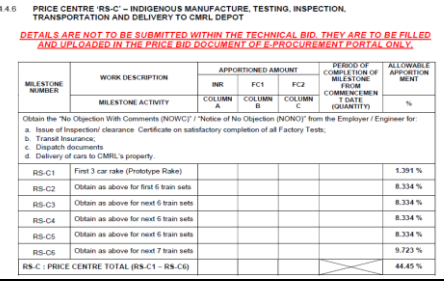
308	Part-2 Section VI A ERTS	2.9.2	Remote Control from OCC in ATS work-station: The Signalling and Train Control Contractor and Rolling Stock Contractor shall coordinate to allow the following functions, as a minimum, to be performed remotely from OCC in ATS work-station under UTO mode but not limited to the following functions. CMRL shall request a few other operational requirements during the project execution stage a) Train Door Open / Close b) Emergency Brake Reset c) Passenger Alarm Handling d) Smoke Alarm Reset e) Wake up/ Sleep f) Pantograph & VCB control g) Inching movement h) Parking Brake apply/Release i) BLCOS (Brake loop cut-out) j) DPLCOS (Door Proving loop cut-out) k) Low speed control as washing mode l) DCU Isolation control m) VAC mode and temperature control n) VAC Reset Control o) Damper Reset Control p) Interior Light Control q) Stop all trains r) ATC reset s) Start-up tests t) MCB reset	t) MCB reset - specific Circuit or systems to be defined	Tender Condition Prevails.
309	Part-2 Section VI A ERTS	11.11.14	Control of the WFL System shall be entirely TCMS based. Activation of the oil spray cycle shall be based on the train location. TCMS shall adjust the cycle duration / quantity of oil deployed based on the train approach speed and degree of curve at that location etc.	Control of WFL system shall be entirely TCMS based via **1) Digital IO's (or)** **2) Ethernet (or)** **3) Digital IO's and Ethernet** **shall be defined**	Tender Condition Prevails.
310	Part-2 Section VI A ERTS	2.25.10 (b) (i)	SEC of VAC for a 3-car train (Say 'SECH' Wh/GTKM) i. Round Trip Time (RTT) corresponding to Declared Schedule Speed (DSSP) (RTTDSSP), in Phase 2 network for Corridor 3, 4 & 5 as mentioned in clause **2.25.10.a.vi.** shall be considered.	For SEC of VAC, Round Trip Time (RTT) corresponding to Declared Schedule Speed (DSSP) (RTTDSSP) with Loading condition of AW4 as per 2.25.10.a.vi. is referred. But for SEC of VAC loading condition of **AW3 is given as per 2.25.10.b.vi. So,** for SEC of VAC, Round Trip Time (RTT) corresponding to Declared Schedule Speed (DSSP)as per **ERTS 1.4.5 (corresponding to AW3)** may please be considered inline with AW3 loading condition given in 2.25.10.b.vi instead of Round Trip Time (RTT) corresponding to Declared Schedule Speed (DSSP) for AW4 as given in 2.25.10.a.vi. Accordingly requested to ammend the clause as below. SEC of VAC for a 3-car train (Say 'SECH' Wh/GTKM) i. Round Trip Time (RTT) corresponding to Declared Schedule Speed (DSSP) (RTTDSSP), in Phase 2 network for Corridor 3, 4 & 5 as mentioned in clause **1.4.5 (corresponds to AW3)** shall be considered.	**Refer Addendum Sl. No.13 & 14**
311	Part-2 Section VI A ERTS	9.2.13	All MCBs shall have auxiliary contacts and shall be utilized for communicating the working feedback of the MCBs to TCMS and to RSC consoles of OCC, BCC & DCCs.	All MCBs shall have auxiliary contacts and shall be utilized for communicating the working feedback of the MCBs to TCMS and to RSC consoles of OCC, BCC & DCCs. MCB feedback to RSC consoles of OCC, BCC & DCCs shall be defined.	Tender Condition Prevails.
312	Part-3, Section - VIII Particular Conditions (Part A: Contract Data)	Sub Clause 14.2	**Total advance payment:** Interest bearing Mobilization Advance to a maximum of 10% of the Accepted Contract Amount (Excluding Provisional Sum) excluding taxes & duties is payable in INR only. The Rate of Interest shall be 13.5% per annum. Mobilization advance shall be paid in two equal instalments	We request CMRL to modify the clause accordingly: 15% Intrest free of the Accepted Contract amount in **TWO instalments of 10% and 5% each** which is followed in recent RS tenders.	Tender Condition Prevails.
313	Part 3 : Section VIII Particular Conditions (Part B: Specific Provisions)	PCC to GCC Clause No. 18.1	Insurance cover for the Contractor's All Risk and other requirements as specified in GCC shall cover 100 % of the Total Contract price (excluding Price Centre RS-CMC) and also cover the variation price.	As per our insurance consultant, the term "Contractor All Risk" policy is not applicable for rolling stock contracts. It should be Marine cum Erection policy. Request to rename the term "Contrcator's All Risk" to avoid confusion.	Tender Condition Prevails.
314	Part-3, Section - VIII Particular Conditions (Part A: Contract Data)	Sl. No 24 Sub Clause 18.2(d)	Maximum amount of deductibles for insurance of Employer's risks: INR 1,00,000/-	As per our insurance consultant, it is understood, Deductibles are guided by regulation & would as note below for projects exceeding Rs.2500Crores. For Storage & Erection Claims:5 % of the claim amount subject to a minimum of Rs. 75,000/- For Testing Period Claims:5% of the claim amount subject to a minimum of Rs. 2,25,000/- For Acts of God Claims:10% of the claim amount subject to a minimum of testing period excess i.e., Rs.2,25,000/- For Fire/Explosion Claims:10% of the claim amount subject to a minimum of testing period excess i.e., Rs 2,25,000/-. For projects below Rs.2500 Crores the minimum limit in each case would little lesser. In view of the above, it is requested to not explicitly mention dedcutibles in tender document. Deductible amount shall be discussed and agreed as per applicable regulation after the award of the contract. Please amend accordingly.	Tender Condition Prevails.
315	Part-3, Section - VIII Particular Conditions (Part A: Contract Data)	Sl. No 25 Sub Clause 18.3	 **25.** **Minimum amount of third party insurance** 18.3 In case of death, INR 50,00,000 per person in each case. In case of permanent disability, INR 25,00,000 per person in each case. In case of partial disability, INR 10,00,000 per person in each case. In case damage to facility, the Contractor shall be responsible for full coverage of damages without limit of occurrences. Hence, the amount shall be decided by the Contractor based on his experience.	As per our insurance consultant, Since third party liability is a legal liability & payment is dependent on the court order, such sub limits per person for death, permanent disability & partial disability cannot be offered. In view of the above, it is requested to not explicitly mention sub-limit liability amounts in the tender document. The option should be left to the contractor based on his experience.	Tender Condition Prevails.
316	Part-1, Section – IV Bidding Forms	4.4.6	 4.4.6 PRICE CENTRE 'RS-C' – INDIGENOUS MANUFACTURE, TESTING, INSPECTION, TRANSPORTATION AND DELIVERY TO CMRL DEPOT DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E PROCUREMENT PORTAL ONLY. MILESTONE NUMBER / WORK DESCRIPTION / MILESTONE ACTIVITY / APPORTIONED AMOUNT INR (COLUMN A) / FC1 (COLUMN B) / FC2 (COLUMN C) / PERIOD OF COMPLETION OF MILESTONE FROM COMMENCEMENT DATE (QUANTITY) / ALLOWABLE APPORTIONMENT % Obtain the 'No Objection With Comments (NOWC)' / 'Notice of No Objection (NONO)' from the Employer / Engineer for: a. Issue of Inspection/ clearance Certificate on satisfactory completion of all Factory Tests; b. Transit Insurance; c. Dispatch documents d. Delivery of cars to CMRL's property. RS-C1 First 3 car rake (Prototype Rake) 1.391 % RS-C2 Obtain as above for first 6 train sets 8.334 % RS-C3 Obtain as above for next 6 train sets 8.334 % RS-C4 Obtain as above for next 6 train sets 8.334 % RS-C5 Obtain as above for next 6 train sets 8.334 % RS-C6 Obtain as above for next 7 train sets 9.723 % RS-C : PRICE CENTRE TOTAL (RS-C1 – RS-C6) 44.45 %	A. It is found Milestones under these price centres (therefore, payments) are not defined train wise, but after certain lot of trains (6 trains). B. This creates hardships to the contractors in terms of cashflows and leads to avoidable price loading. C. It is suggested to define Milestones (and consequent payments) train wise. It is requested to issue a clarficatory statement stipulating that trainset wise payments is admissible during execution stage.	It is clarified that existing Tender Conditions will not prevent CMRL from settling interim payment requests submitted by Contractor that are structured on a train by train basis. Tender Condition Prevails.

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Sl no	Part/ Section No	Clause No.	Original Bid Condition	Bidder's queries	CMRL Response
317	Part-1, Section – IV Bidding Forms	4.4.8	4.4.8 PRICE CENTRE 'RS-E' – FORMATION, TESTING IN THE DEPOT FOR INDIGENOUSLY MANUFACTURED TRAINS DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E-PROCUREMENT PORTAL ONLY. MILESTONE NUMBER / WORK DESCRIPTION / MILESTONE ACTIVITY / APPORTIONED AMOUNT INR (COLUMN A) / FC1 (COLUMN B) / FC2 (COLUMN C) / PERIOD OF COMPLETION OF MILESTONE FROM COMMENCEMENT DATE (QUANTITY) / ALLOWABLE APPORTIONMENT % Obtain the "No Objection With Comments (NOWC)" / "Notice of No Objection (NONO)" from the Employer / Engineer for: a) Formation of train, obtaining certificate of satisfactory completion of functional tests and running of train in the Depot, train static and dynamic test in mainline. RS-E1 First 3 car rake (Prototype Rake) 0.175 % RS-E2 Obtain as above for first 6 train sets 1.050 % RS-E3 Obtain as above for next 6 train sets 1.050 % RS-E4 Obtain as above for next 6 train sets 1.050 % RS-E5 Obtain as above for next 6 train sets 1.050 % RS-E6 Obtain as above for next 6 train sets 1.225 % RS-E: PRICE CENTRE TOTAL (RS-E1 ~ RS-E6) 5.60 %	A. It is found Milestones under these price centres (therefore, payments) are not defined train wise, but after certain lot of trains (6 trains). B. This creates hardships to the contractors in terms of cashflows and leads to avoidable price loading. C. It is suggested to define Milestones (and consequent payments) train wise. It is requested to issue a clarficatory statement stipulating that trainset wise payments is admissible during execution stage.	It is clarified that existing Tender Conditions will not prevent CMRL from settling interim payment requests submitted by Contractor that are structured on a train by train basis. Tender Condition Prevails.
318	Part-1, Section – IV Bidding Forms	4.4.9	4.4.9 PRICE CENTRE 'RS-F' – INTEGRATED TESTING AND COMMISSIONING OF TRAINS AND SERVICE TRIALS DETAILS ARE NOT TO BE SUBMITTED WITHIN THE TECHNICAL BID. THEY ARE TO BE FILLED AND UPLOADED IN THE PRICE BID DOCUMENT OF E-PROCUREMENT PORTAL ONLY. MILESTONE NUMBER / WORK DESCRIPTION / MILESTONE ACTIVITY / APPORTIONED AMOUNT INR (COLUM N A) / FC1 (COLUMN B) / FC2 (COLUMN C) / PERIOD OF COMPLETIO N OF MILESTONE FROM COMMENCE MENT DATE (QUANTITY) / ALLOWABL E APPORTIO NMENT % Obtain the "No Objection With Comments (NOWC)" / "Notice of No Objection (NONO)" from the Employer / Engineer for: a. Completion of Integrated Testing and Commissioning in the Depot; b. Completion of Integrated testing and Commissioning on the section in conjunction with Designated Contractors; c. Instrumentation Tests of First train, conducting oscillation trials as per requirement of Statutory Authorities, compilation of test Results, obtaining sanction of Statutory Authorities for fitness of train for carriage of passengers in respect of Prototype Trains only. d. Service Trials, for; RS-F1 First 3 car rake (Prototype Rake) 0.152 % RS-F2 Obtain as above for first 6 train sets 0.919 % RS-F3 Obtain as above for next 6 train sets 0.919 % RS-F4 Obtain as above for next 6 train sets 0.919 % RS-F5 Obtain as above for next 6 train sets 0.919 % RS-F6 Obtain as above for next 7 train sets 1.072 % RS-F : PRICE CENTRE TOTAL (RS-F1 ~ RS-F6) 4.90 %	A. It is found Milestones under these price centres (therefore, payments) are not defined train wise, but after certain lot of trains (6 trains or 7 trains, on case by case basis). B. This creates hardships to the contractors in terms of cashflows and leads to avoidable price loading. C. It is suggested to define Milestones (and consequent payments) train wise. It is requested to issue a clarficatory statement stipulating that trainset wise payments is admissible during execution stage.	It is clarified that existing Tender Conditions will not prevent CMRL from settling interim payment requests submitted by Contractor that are structured on a train by train basis. Tender Condition Prevails.
319	Part-1, Section – IV, Bidding Forms	Clause 3.3.2	The Price of each 3-car train-set to be supplied against **Quantity Variation** shall be derived from the contracted cost of the original tendered quantity, against 'RS-C', 'RS-E' and 'RS-F' (in case of indigenous supply).	The Price Centres RS-A (5.60%), RS-CST (2.10%), RS-FAI (4.90%) and RS-CPT (2.10%), together constitute 14.7% of the Metro car price which are not being considered for the metro cars under quantity variation. This non-consideration is not rational since the cost structure of RS suppliers is not in alignment with these contractual Price centre apportionments and are in actual much less. Retaining this condition shall force RS suppliers to **front load** the prices for base quantity as buffer to option quantity which may or may not be exercised by CMRL in future and is detrimental to CMRL interests. The following is suggested which is more closer to the reality and provides Win-Win situation to both RS supplier and CMRL: The Price of each 3-car train-set to be supplied against quantity variation shall be derived from the contracted cost of the original tendered quantity, against Price Centre 'RS-CST', 'RS-FAI' and 'RS-CPT','RS-C', 'RS-E' and 'RS-F' (in case of indigenous supply).	Tender Condition Prevails.
320	Section - VIII Particular Conditions (Part B: Specific Provisions)	Sl. No 54 PCC to GCC Clause No.	Total advance payment: The Employer shall make an interest-bearing advance payment for mobilization when the Contractor submits a guarantee in accordance with this sub-clause. This guarantee shall be in the form of BG for 110% of the advance amount requested plus GST (in parlance with CVC guidelines) as per format given in the Annex to PCC from a Public sector bank (PSB) of India or Scheduled Commercial Banks in India. GST on the mobilization advance is not reimbursable. The total advance payment and the applicable currencies and proportions shall be as stated in Contract Data.	This clause is modified in Tender ARE02A based on bidders request. We request to modifiy the claue for this tender also, acocordingly please.	Tender Condition Prevails.
321	Part-1, Section – IV Bidding Forms	3.3.2	The Price of each 3-car train-set to be supplied against Quantity Variation shall be derived from the contracted cost of the original tendered quantity, against 'RS-C', 'RS-E' and 'RS-F' (in case of indigenous supply). In case the Employer chooses to exercise the Option Quantity Variation as per Cl. 3.3.1 above, the same CMC obligations that are applicable for the Base Order Quantity (32 trainsets of 3 car configuration) shall also be applicable for the respective additional Option Quantity trainsets. Pricing of CMC Works for these additional trainsets shall be derived proportionately from the 'RS-CMC' Price Centre.	As per key dates, option quanity can be exercised within 725 days (> 2years) after commencement date, which is a substantial amount of time. Correspondingly, the time gap between CMC completion of base order and CMC completion of option quantity will also be more than two years. Now who will maintain base quanity trains during this time gap/difference until CMC completion of option quantity cars? If contractor has to take up this work, how will he be compensated?	Tender Condition Prevails.
322	Part-1, Section - II Bid Data Sheet (BDS)	ITB 11.2	Shall be paid by NEFT / RTGS / Demand Draft / SWIFT (Scanned copy to be uploaded online at the time of bid submission. If tender fee is submitted in the form of DD, a scanned copy of DD is to be uploaded online and the Bidder should ensure submission of the original DD by person / post / courier at the office of the Employer at the address specified in the Bid document within Seven (07) days after the bid submission due date. Name of the Bidder and tender id/tender reference number are to be written on the backside.	Please clarify if CMRL issue GST invoice for the payment of cost of the bid. If yes, where to collect the same?	No.
323	Part 2 - Section VI C: ERTS - CMC of RS & DM&P - CMC Requirements	1.5.2	Spares and Consumables (herein referred to only as Spares) shall include but shall not be limited to the following subcategories, as applicable to Rolling Stock and Depot Machinery & Plant assets:- a) Unit exchange spares; b) Mandatory spares; c) Recommended spares; d) Consumable spares; e) Special Tools, Jig, Fixtures, Gauges, Testing and Diagnostic Equipment f) Overhauling Spares; g) Any other items required for maintenance (identified by the Contractor / CMRL / OEM).	The different terms, viz. a) Unit exchange spares b) Mandatory spares c) Recommended spares; d) Consumable spares; e) Special Tools, Jig, Fixtures, Gauges, Testing and Diagnostic Equipment f) Overhauling Spares; are not defined in the tender document and are legacy terms used in earlier contracts without CMC. Inclusion of these terms may lead to confusion. Request to delete the clause. Instead the term "All Spares, Special tools, Jig, Fixtures, Gauges, Testing and Diagnostic Equipment" or similar may be used.	Tender Condition Prevails.
324	Part 2 – Section VI A: ERTS – Rolling Stock	Appendix - D	Appendix D – Guidelines and Drawings D2.7 Alignment Data Semmancheri Depot	Alignment Data of Semmancheri Depot is not found in the Link to download the files: http://tinyurl.com/3dcuc9rb provided in the tender document. Please provide.	The drawing for Semmancheri Depot is not yet available. Bidders are requested to apply a costing assumption that the depot will be similar / equivalent to Madhavaram Depot.
325	Section VI A: ERTS – Rolling Stock	18.13.2.2	The Contractor shall arrange its own furnishing, security etc. Charges for the electricity consumption shall be payable by the Contractor at the prescribed rates.	We understand the requirement of payment of charges for electricity consumption is only for Contractor's Site Office and not for the entire RS maintenance Depot or Designated Depots. Please confirm for clarity purpose. Further, please provide electricity charges details presently being paid by CMRL at similar depots for reference purpose to the bidders.	**Refer Addendum Sl. No. 53**
326	Section VI A: ERTS – Rolling Stock	18.13.2.2	The Contractor shall arrange its own furnishing, security etc. Charges for the electricity consumption shall be payable by the Contractor at the prescribed rates.	We understand the requirement of arranging for security is only for Contractor's Site Office and not for the entire RS maintenance Depot or Designated Depots. Please confirm for clarity purpose.	**Refer Addendum Sl. No. 53**

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327	Section VI A: ERTS – Rolling Stock	18.13.2.9	The Contractor shall be responsible for making applications or requests to the concerned Authorities for availing of the above facilities. In the event that electricity or water supplies are arranged by another Designated Contractor in the Depot area, the Contractor may avail himself of those supplies from the Designated Contractor, either directly on agreed terms and conditions. The Contractor shall comply with all regulations of the utility companies and Government departments concerned	Please clarify if water supplies are made available free of cost to the Contractor? If no, please provide water supply charges details presently being paid by CMRL at similar depots for reference purpose to the bidders.	Tender Condition Prevails.
328	Section VI C: ERTS – CMC of RS and DM&P	2.3.1 vii)	The Contractor shall optimize the consumption of the water required for maintenance and other Project activities. Considering the scarcity of the water resources at present & in future, the Contractor by all innovative means shall progressively make efforts to limit the water consumption.	Please clarify if water supplies are made available free of cost to the Contractor? If no, please provide water supply charges details presently being paid by CMRL at similar depots for reference purpose to the bidders.	Tender Condition Prevails.
329	Section VI A: ERTS – Rolling Stock	18.13.2.1	CMRL shall allocate approximately 100 square meter space to the Contractor at one of the Designated Depot(s) for erection of site the Contractor's Site Office. This land / space provision shall be provided to the Contractor on a free of cost basis without any rental charges.	Please clearly state, if the space provided is in the form of land or constructed building. We prefer if space is provided in the form of constructed building by the Employer. Please confirm/clarify. Accordingly modify the clauses.	Land will be provided. Tender Condition Prevails.
330	Section VI A: ERTS – Rolling Stock	18.13.2.1	CMRL shall allocate approximately 100 square meter space to the Contractor at one of the Designated Depot(s) for erection of site the Contractor's Site Office. This land / space provision shall be provided to the Contractor on a free of cost basis without any rental charges.	Please clarify in how many depots contrator's site offices has to be set-up? Our understanding is, it is required only at Semmancheri Depot. Please confirm for clarity purpose.	It is clarified that the Contractor will only be required to erect a site office at a single location.
331	Section VI A: ERTS – Rolling Stock	18.13.2.1	….....Further space shall also be allocated to establish the Depot Stores facility.	Please clearly state, if the space provided is in the form of land or constructed building. We prefer if space is provided in the form of constructed building by the Employer. Please confirm/clarify. Accordingly modify the clauses.	Land will be provided. Tender Condtion Prevails.
332	Section VI A: ERTS – Rolling Stock	16.17.5 and 16.17.6	The contractor will be managing the PMIS for entire contract duration including the defects liability period for their contract package including sharing the proportionate cost of a. Cloud based server (CMRL will be acquiring the common cloud based server for all contract packages of phase 2 and back charge the proportionate cost of the Server, Cloud services and the manage services of the cloud server to each contractor b. 3 no's user licenses cost for Primavera P6 Enterprise Project Portfolio Management Cloud Service (1 No. each to be used by the Contractor, GC and CMRL). Please note that the Contractor can ask for more licenses if he wish to but strictly on his cost c. 3 no's user licenses cost for Project Management Software to be procured for 1 No. each to be used by the Contractor, GC and CMRL. Please note that the Contractor can ask for more licenses if he wish to but strictly on his cost. d. CMRL will be hiring a professional agency to implement P6 EPPM for whole project and integrate it with PMIS. The contractor for each package will have to share proportionate cost for their package. Any other software required to interact with PMIS for their contract package needed to update the information as explained above.	Please confirm the deduction at the rate of 0.05% of the accepted contract amount as per clause 16.17.6, covers the various charges payable by the contractor as per clause 16.7.5. Please confirm for clarity purpose.	It is clarified that the 0.05% deduction applied through ERTS Clause 16.17.6 covers the requirements defined in Clause 16.17.5. Tender Conditions Prevail
333	Part-1, Section – IV Bidding Forms	4.4.11	Price Centre 'RS-H' - Training and Manuals	As per the cited footnotes, The dates of operation of the Milestones Activities for Milestones RS-H1 to RS-H6 and RS-H13 will be at the discretion of the Employer. In this connection the following is submitted, (A) There is no price adjustment allowed for Cost Centre - H items. (B) As such, it is not possible to hold the Cost Centre H (RS-H0, RS-H4, RS-H5 and RS-H6) prices through out the contract duration including CMC phase. It is requested to clearly mention the key dates for Price Centre - H similar to all other Price Centres. Alternatively, it may be spcifically mentioned that RS-H0, RS-H4, RS-H5 and RS-H6 shall be operated prior to CMC commencement.	Tender Condition Prevails.
334	Part-1, Section – IV Bidding Forms	5.15	Certificate confirming Minimum Local Content We hereby jointly and severally certify in accordance with clause '9.a' of the Order no. P- 45021 / 2 / 2017-PP (BE-II) of Ministry of Commerce and Industry, Department of Promotion of Industry and Internal Trade (DPIIT) {formerly Department of Industrial Policy and Promotion (DIPP)}, Government of India dated 16.09.2020 that the item(s) offered meets the minimum local content of 60% (as specified in MoHUA Order No. K – 14011 / 08 / 2017 / MRTS – Coord dated 14th October 2020). The details including name of vendor, location and percentage of local content will be provided within 15 days of issue of LoA.	The suppliers would not be finalized during bid stage and it is not feasible to provide the details including name of vendor, location and percentage of local content within 15 days of issue of LoA. We request to change the clause extract as follows: The details including name of vendor, location and percentage of local content will be provided before 60 days of delivery of the prototype train to the depot. Please modify accordingly.	Tender Condition Prevails.
335	Part-1, Section – IV Bidding Forms	6.13	Form Minimum Local Content	The suppliers would not be finalized during bid stage and it is not feasible to provide the Form Minimum Local Content within "Within 10 days of last date of bid submission date details requested under Form Minimum Local Content shall be submitted to CMRL" We request to change the submission timeline of this form until preliminary design submission after the contract award. Please modify accordingly.	Tender Condition Prevails.
336	Part-1, Section – IV Bidding Forms	5.15	Certificate confirming Minimum Local Content …..... The bidder shall submit their declaration in Technical Bid submission. Within 10 days of last date of bid submission date details requested under Form Minimum Local Content shall be submitted to CMRL.	We requested for change in submission timeline as per another query. In addition, the following is also brought to notice: It is not clear, if the ten days mentioned are after the bid submission due date or before tender submission due date.	**Refer Addendum Sl. No. 6**
337	Part 2 - Section VI C: ERTS - CMC of RS & DM&P - CMC Requirements	1.1.17	Major Depot M&P Assets at the principal RS Maintenance Depot shall be supplied by CMRL in in accordance with Section 1.15. Operations and Maintenance of these assets shall be performed by the ARE04A RS Contractor in accordance with Sections 3.4 and 1.16 of this Contract respectively.	The following are not clear: (1) When would the DM&Ps be positioned in the depot? (2) Who are the manufacturers of DM&Ps? It is not practical for the RS contractor to maintain the DM&Ps sourced by Chennai Metro. We request to delete maintenance portion of the DM&Ps from the scope of the contractor. Scope of operation of DM&Ps can be retained by the RS contractor. Please modify the clauses accordingly.	Tender Condition Prevails.

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338	Part 2 – Section VI A: ERTS–RS	12.16.1	It shall be possible to rescue a sick train (E.g. Defective, Immobilized, No battery power or in a shutdown condition) **using only an air connection** from the rescue train or locomotive. The emergency brake application of the dead train shall be possible by its operator.	**Justification:** Bidder would like to inform that this requirement may require twin pipe architecture. However, customer comment in clarification is indicating for single pipe architecture. Accordingly, request you to allow to be in line with ongoing ARE03A contract to bring synergy between different projects in phase 2. **Amendment Requested:** Bidder request to remove this requirement.	**Refer Addendum Sl. No. 44**
339	Part 2 – Section VI A: ERTS–RS	9.6.9 (ii)	# Note: 24hrs is the minimum duration of Sleep Mode condition which must be achieved (and demonstrated by the Contractor) before the battery charge depletes to the level where the voltage supervision orders a full shutdown of the train.	**Justification:** Bidder would like to inform that sleep mode requirement of 24 hrs is very high. Normally 18-20 hrs per day is considered for mainline operation and hence 6hrs for sleep mode shall be sufficient otherwise it will lead to unnecessary increase in size of the battery. All the other GoA4 projects in India has same requirement for 5-6 hrs of sleep mode. Accordingly, we request to the customer to amend the requirement as below: **Amendment Requested:** # Note: **06hrs** ~~24hrs~~ is the minimum duration of Sleep Mode condition which must be achieved (and demonstrated by the Contractor) before the battery charge depletes to the level where the voltage supervision orders a full shutdown of the train.	Tender Condition Prevails.
340	Part 2 – Section VI A: ERTS–RS	11.12.4	The Contractor shall submit the methodology of detection, detailed calculation of design proof load, installation arrangement, safety against derailment, energy absorbing capabilities etc. conforming to Table 3 — Obstacle deflector performance requirements of EN 15227/ Section 4.5 of GM/RT2100 and EN 12663-1/EN 13749 during detailed design for CMRL review and approval. Provisions shall be made to avoid false detection.	**Justification:** Bidder would like to inform that as per EN15227 it is clearly stated that Metro vehicles which runs on a dedicated rail network comes under C-II category (as per Table 1 of EN15227) and hence requirement of obstacle detector and lifeguards are not applicable (as per Table 3 of EN15227). Bidder request CMRL to keep the requirement same as ARE03A contract in order to use proven solution available in the Indian market. **Amendment Requested:** The Contractor shall submit the methodology of detection, detailed calculation of design proof load, installation arrangement, safety against derailment, energy absorbing capabilities etc. ~~conforming to Table 3 — Obstacle deflector performance requirements of EN 15227/ Section 4.5 of GM/RT2100 and EN 12663-1/EN 13749~~ during detailed design for CMRL review and approval. Provisions shall be made to avoid false detection.	**Refer Addendum Sl. No. 33**
341	Part 2 – Section VI A: ERTS–RS	12.6.8.14	A proven speed sensor having 2 channel mounted on the cover of each axle box shall be provided for Wheel slide protection, Train speed measurement and for any other function decided by CMRL during the design phase.	**Justification:** Bidder would like to inform that speed sensor with single channel is sufficient as it is only read by the BCU. Accordingly, we request to keep the requirement in line with ARE03A contract. **Amendment Requested:** A proven speed sensor ~~having 2 channel~~ mounted on the cover of each axle box shall be provided for Wheel slide protection, Train speed measurement and for any other function decided by CMRL during the design phase	Tender Condition Prevails.
342	Part 2 – Section VI A: ERTS–RS	10.11.15	**Four (4)** trains shall be instrumented (in accordance with EN 50463) with separate Power Quality measuring instruments, data acquisition systems and power analyser….	**Justification:** Bidder would like to inform that extra instrumentation will lead to increased costing with limited benefits. Accordingly, we request to keep the requirement in line with ARE03A contract. **Amendment:** ~~Four (4)~~ **Two (2)** trains shall be instrumented (in accordance with EN 50463) with separate Power Quality measuring instruments, data acquisition systems and power analyser…	**Refer Addendum Sl. No. 29**
343	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	Clause 4.25	**4.25.1 CMC - Rolling Stock:** The Contractor is required to carry out 15 years Comprehensive Maintenance Contract (CMC) for Rolling Stock which shall commence 2 years after the TOC date of 32nd Trainset and shall end after 15 years from start. The Contractor shall provide key maintenance staff as per qualification and experience detailed under Part 2, Section VI C ERTS (CMC – RS and DM&P). Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P).	Since this is Supply cum Maintenance contract, it would be the responsibility of the Contractor to carry out maintenance during the DNP/DLP and CMC phase and achievement of performance requirements(KPIs), thereby bidder request to modify the clause as below : "**4.25.1 CMC - Rolling Stock:** The Contractor is required to carry out 15 years Comprehensive Maintenance Contract (CMC) for Rolling Stock which shall commence 2 years after the TOC date of ~~32nd~~ **1st** Trainset and shall end after 15 years from start. The Contractor shall provide key maintenance staff as per qualification and experience detailed under Part 2, Section VI C ERTS (CMC – RS and DM&P). Upon expiry of CMC, the Contractor shall handover all equipment under this Contract in a working condition to the Employer. The procedures for handing over shall be as stated in Part 2, Section VI C ERTS (CMC – RS and DM&P)."	**Tender Condition Prevails.** **Refer Addendum Sl. No. 73**
344	Part 2 – Section VI C: ERTS – CMC of RS and DM&P	1.15.1	**1.15 PROCUREMENT ARRANGEMENTS FOR DEPOT M&P ASSETS** 1.15.1 CMRL will procure the following list of major Depot M&P Assets for the nominated RS Maintenance Depot under a separate Contract (Contract Number DM250): **Machine No. / Depot M&P Assets Procured by CMRL (Under DM250) / Unit / Qty** DM&P-01 Under Floor Wheel Lathe (UFWL) Nos 1 DM&P-02 Automatic Train Wash Plant (ATWP) Nos 1 DM&P-03 Synchronised Pit Jacks (SPJ) for 3 Car Length Set 2 DM&P-04 Wheel Profile Measuring System (WPMS- Way Side) Nos 1 DM&P-05 Battery Operated Rail Cum Road Shunter-for 6 car shunting (BORRS) Nos 2 DM&P-06 Synchronised Mobile Lifting Jacks (SMLJ) for 3 Car Length Set 2 DM&P-07 Car Body Stand (CBS) for 3 Car Length Set 2 DM&P-08 Diesel Operated Relief and Rescue Vehicle (RRV) With Rerailing & Rescue Equipment Nos 1 DM&P-09 Bogie Wash Plant (BWP) Nos 1 DM&P-10 Bogie Testing Unit (BTU) Nos 1 DM&P-11 EOT 10/3 T Category – 1. Nos 2 DM&P-12 EOT 10/3 T Category – 2. Nos 2 DM&P-13 EOT 5 T For ETU Shed Nos 1 DM&P-14 EOT 5 T For PWL Shed Nos 1 DM&P-15 EOT 5 T For RS Shed Nos 1 DM&P-16 Bogie Turn Table (BTT) Nos 6 DM&P-17 Bogie Manipulator Nos 1	In this list of Depot M&P, Main Compressor with Pneumatic supply to the IBL & RBL is not available. Bidder understands that the Main Compressor with Pneumatic supply is part of depot infrastructure and it will be provided to the RS Contractor by the Employer. Please confirm that our understanding is correct.	Tender Condition Prevails. Pneumatic supply in the IBL and RBL is provisioned by the Employer through depot Civil and E&M Contractor.
345	Part 2 – Section VI A: ERTS – Rolling Stock	Appendix D – Guidelines and Drawings	Layout & Site Requirements	We have currently received only the Alignment drawings of Madhavaram depot entry/exit and Poonamalle Depot entry/exit along with the tender documents. However, we request you to please also provide the complete layout drawings of all three depots showing Stabling lines, Worshop lines, Inspection lines and other depot facilities such as wash plant, pit wheel lathe etc. along with the locations of DCC & OCC and office space.	**Refer Addendum Sl. No. 89**

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346	Part 1 – Section Section - III (EQC)	2.5 Item no. 2	**Propulsion system (Traction converter, Auxiliary converter and Traction motors) :** 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 non-powered 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	**Following change in Qualification requirement is requested in line with recent MMRDA tenders for Line 4 , 5 & 6.** The designer of Traction converter-inverter shall be considered as the integrator of the Propulsion system and shall have experience of minimum (7) years in design and manufacturing of Propulsion equipment (Traction Converter -Inverter, Auxiliary Converter-Inverter, Traction Motor) for Railway Rolling stock (i.e High Speed Railway, MRT, LRT, Suburban Railways, EMU, MEMU). The proposed equipment/system shall have been in use and have established their satisfactory performance for past 3 years for minimum 300 cars both powered and non-powered anywhere in the world.	Tender Condition Prevails.
347	Part 1 – Section Section - III (EQC)	2.5 Item no. 5	**Train Control and Monitoring System (TCMS):** The proposed system shall be in satisfactory revenue operation for minimum three (3) years in GoA4 trains, in a country other than the country of origin of manufacturer or in India, at the time of bid submission.	**Following change in Qualification requirement is requested in line with recent MMRDA tenders for Line 4 , 5 & 6.** The proposed system shall be in satisfactory revenue operation for minimum three (3) years in Railway Rolling stock (i.e Metros, High Speed Railway, MRT, LRT, Suburban Railways, EMU, MEMU) in a country other than the country of origin of manufacturer or in India, at the time of bid submission.	Tender Condition Prevails.
348	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	2.14.1e	Minimum Average Service braking rate from 80 kmph to standstill for fully loaded (seating plus standees @ 8 passengers / m^2) train on level tangent track 1.1 m/s^2 Minimum Average Service braking rate from 80 kmph to standstill for - (seating plus standees @ 6 passengers / m^2) train on level tangent track 1.1 m/s^2 Minimum Average Emergency braking rate from 80 kmph to 0 kmph for fully loaded train on level tangent track 1.3 m/s^2	The requirement can be reworded as below based on EN13452. Minimum **Equivalent** Service braking rate from 80 kmph to standstill for fully loaded (seating plus standees @ 8 passengers / m2) train on level tangent track 1.1 m/s2 Minimum **Equivalent** Service braking rate from 80 kmph to standstill for - (seating plus standees @ 6 passengers / m 2) train on level tangent track 1.1 m/s2 Minimum **Equivalent** Emergency braking rate from 80 kmph to 0 kmph for fully loaded train on level tangent track 1.3 m/s2	Tender Condition Prevails.
349	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (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 80kmmh within a distance of 223 m 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/s^2	The requirement can be rephrased as below 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 80kmmh within a distance of 223 m under any Loading Conditions up to AW4. The minimum **Equivalent** emergency brake rate following any single point failure shall not be less than 1.3 m/s2	Tender Condition Prevails.
350	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	2.15.8.10	Software contained within the traction and braking equipment shall be capable of modification to alter the rake performance and capabilities.	The requirement can be rephrased as below "Software contained within the traction and braking equipment shall be capable of modification **by supplier** to alter the rake performance and capabilities."	Tender Condition Prevails.
351	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	10.11.10	Wheel Slip / Slide control during powering and electrical regenerative braking shall be provided using speed sensor less vector control subject to its proven design in Metro Transits System. Uncontrolled slip / slide should be clearly recorded in TCMS, OCC, BCC & DCC as critical fault.	Friction brake slide indication during Emergency Brake can be given through TCMS. However, under service brake condition friction slide is a normal functioning of WSP and indication will lead to transmission of lot of data which will not be useful and it is not related to safety. Hence, request to change as "Wheel Slip / Slide control during powering and electrical regenerative braking shall be provided using speed sensor less vector control subject to its proven design in Metro Transits System. Uncontrolled slip / slide **during Emergency braking** should be clearly recorded in TCMS, OCC, BCC & DCC as critical fault.**"**	Tender Condition Prevails.
352	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	12.2.7	The brake system shall comply to UIC 544-1 regarding Braking Performances.	The brake system shall comply to UIC 544-1 **or EN 13452-1** regarding Braking Performances.	**Refer Addendum 35**
353	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	12.6.5	In the event of a failure of the dynamic brake, the friction brake shall be capable of carrying out three (3) consecutive emergency brake applications from maximum speed down to standstill of a rake in the Crush Loading condition. The rake shall be deemed to then accelerate at its maximum rate up to maximum speed after each stop.	WT requests to modify the clause as below "In the event of a failure of the dynamic brake, the friction brake shall be capable of carrying out ~~three (3)~~ **two** consecutive emergency brake applications from maximum speed down to standstill of a rake in the Crush Loading condition. The rake shall be deemed to then accelerate at its maximum rate up to maximum speed after each stop."	Tender Condition Prevails.
354	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	12.6.8.10	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.	The requiments of keeping Safety valve inside lockable box. The requirement may be mdified to give fully integrated brake control assembly in a locable box housing critical assemblies to ease maintenance. We recommend to change the requirement as **"Pneumatic control equipment shall be housed in a fully integrated brake control assembly for underframe mounting compliant to IP53 or higher"**	Tender Condition Prevails.
355	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	12.11.1	A leveling control system shall be provided to ensure longitudinal and transversal control of body height under all conditions of load. In each bogie, one leveling system shall be provided to adjust air pressure in the air springs gradually. In the case of failure of one air spring, the other should quickly bleed out so that the car body is lowered to its stable position. The air supply for the leveling system shall be taken from the main reservoir pipe and a separate reservoir of suitable capacity shall be provided for each air suspension system. A load sensing valve shall be provided.	A leveling control system shall be provided to ensure longitudinal and transversal control of body height under all conditions of load. In each bogie, one leveling system shall be provided to adjust air pressure in the air springs gradually. In the case of failure of one air spring, the other should quickly bleed out so that the car body is lowered to its stable position. The air supply for the leveling system shall be taken from the main reservoir pipe and a separate reservoir of suitable capacity shall be provided for each air suspension system. Load sensing valve **or pressure transducers** shall be provided	Tender Condition Prevails.
356	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	12.12.3g	Wheel slide protection shall be available during emergency braking. Any failure in the wheel slide protection in emergency braking shall result in the application of full brake force and deactivation of the slip/slide system.	Failure of WSP will deactivate Dump valve to open the Brake cylinder path to admit the Brake Cylinder pressure as per load condition. Recommended to change the sentence as "**Wheel slide protection shall be available during emergency braking. Any failure in the wheel slide protection in emergency braking shall result in the application of full emergency brake force (load corrected) and activation of the slip/slide system will have to be done**."	**Refer Addendum Sl. No. 90**
357	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	14.2.4	All the End Devices shall support dual-homing type or any latest technology type of Ethernet connections to ECN via physically independent ports to increase system reliability and availability. All digital and analogue Input / Output interfacing with TCMS (directly or via an interface unit) shall also be fully redundant. In any case, the Contractor shall maintain full system availability, in case of single point failure of any TCMS component or communication link, and the vehicle operation shall not be affected.	WT requests to modify the clause as below "All the End Devices shall support dual-homing type or any latest technology type of Ethernet connections to ECN via physically independent ports or **through any latest technology port** to increase system reliability and availability. All digital and analogue Input / Output interfacing with TCMS (directly or via an interface unit) shall also be fully redundant. In any case, the Contractor shall maintain full system availability, in case of single point failure of any TCMS component or communication link, and the vehicle operation shall not be affected."	Tender Condition Prevails.

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358	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	14.9.5	b) The overall time required for uploading the software for all subsystems shall not be more than 10 minutes for each complete sub-system of train and the same shall be demonstrated. (Ex. In case of doors sub-system, the time requirement is collectively for all doors of one train)	b) The overall time required for uploading the software for all subsystems shall not be more than ~~10 minutes~~ **30 minutes** for each complete sub-system of train and the same shall be demonstrated. (Ex. In case of doors sub-system, the time requirement is collectively for all doors of one train)	Tender Condition Prevails.
359	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	19.54.3 (i)	Dry heat test: The dry heat test shall be conducted for class T3 and temperature shall be considered 80ºC against 70ºC specified in IEC/EN. An extra performance check at 95°C shall also be carried out for 10 minutes over temperature value. LCD / LED display units may be tested at 70ºC and an extra performance check at 85°C shall also be carried out for 10 minutes over temperature value	Brake electronic devices comply to EN standard. That means +70°C permanently and +85°C for max. 10 minutes according to the temperature profile defined in the norm. With a longer time at T>+70°C the functioning of the electronic equipment is not guaranteed.	Tender Condition Prevails.
360	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	19.55.6	The Contractor shall furnish the following information in respect of printed circuit boards as part of contract: a) Voltage and/or waveform expected at each critical test point.	Wave form of electronic circuit is IP related documents & the details will put under **ESCROW**	Tender Condition Prevails.
361	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	19.25.2 (i)	Threaded fasteners shall be self-locking or provided with locking devices, where practicable.	Threaded fasteners are part of proprietary informations. Depending upon the design requirements different fasteners has been used. However, the the loosening of fastened components is taken care and the locking remains intact. WT requests to consider and rephrase the requirement accordingly.	Tender Condition Prevails.
362	PART- 2: SECTION VI A – EMPLOYER'S REQUIREMENTS TECHNICAL SPECIFICATION (ERTS)	19.32.2	All rubber hoses, connecting pipes etc. used in pneumatic circuit shall not be required to be replaced before 5 years or major overhaul which ever later. The rubber/ rubber- metal components used in suspensions shall not be replaced before 12 years or during major overhaul of the equipment, whichever is later. All rubber hoses shall be steel reinforced for better life and reliability.	Compressor air intake suction hose required to be replaced in every two years. Request to give exception for compressor air intake suction hose. AGTU anti vibration dampers to be replaced for every 8 years	Tender Condition Prevails.
366	Part 2 – Section VI A: ERTS–RS	19.52.9	Contractor shall use Mors Smitt BK-400 relays for all Safety Func-tions (like, Cab active, Rear cab active, Zero velocity, Door System, Brake control, Emergency brake circuit, coupler, etc).	**Justification:** Bidder would like to inform that this requirement is leading to monopolistic situation by restricting to single vendor having cascading impact on both supply as well as maintenance. Moreover, as BK400 relays are very big in size it is very difficult to accommodate them in current cubicles, increasing the size of cubicles will impact the pax capacity negatively by 2-4 nos. in DM car. Accordingly, we request to keep the requirement open in line with ARE03A contract **Amendment Requested:** Contractor shall use ~~Mors Smitt BK-400~~ relays **as per EN 60810-3 & IEC 60947** for all Safety Functions (like, Cab active, Rear cab active, Zero veloci-ty, Door System, Brake control, Emergency brake circuit, coupler, etc).	Tender Condition Prevails
367	Part 2 – Section VI A: ERTS–RS	11.9.23	The car axle (including AW0 unbalanced weight) shall not be more than 16T Under AW4 load condition of car, weight shall comply to IEC 61133 standard.	**Justification:** Bidder would like to request CMRL to please allow the margin of +/- 2% on axle weight in line with ARE03A as new requirements in ARE04A is only leading to increase in weight of the train. **Amendment Requested:** **The car axle (including AW0 unbalanced weight) shall be 16T.** **The measured load per axle shall not exceed the above-mentioned figure by more than 2%**	**Refer Addendum Sl. No. 84**
368	Part 2 – Section VI A: ERTS–RS	2.14.1	The acceleration and braking requirements given below are minimums for actual performance with new wheels on level track in still air. Performance shall be verified by empty car acceptance tests done on all cars, as well as loaded car engineering tests done on the first rake. Design calculations shall be based on the Davis Formulae for rolling resistance given below	**Justification:** Bidder submits that as manufacturer of Rolling Stock, bidder may please be allowed to calculate and use RTM specific to OEM's proposed RS, in line with ARE03A, and other Indian projects like Mumbai Line 3, Mumbai Line 5, Bangalore 318cars, Kanpur/Agra, Bhopal/Indore etc. The generic RTM formula may not represent the actual resistance of the OEM's train and the formula proposed by the OEM will be more realistic and near to the actual field values **Amendment Requested:** **Accordingly, Bidder requests to amend the clause as follows:** **"The acceleration and braking requirements given below are minimums for actual performance with new wheels on level track in still air. Performance shall be verified by empty car acceptance tests done on all cars, as well as loaded car engineering tests done on the first rake. Design calculations shall be based on the Davis Formulae for rolling resistance for rolling resistance given below (in both elevated and underground) or approved equivalent for a configuration with new wheels."**	**Refer Addendum Sl. No. 88**
369	Part 2 – Section VI A: ERTS–RS	2.25.11 (a) (iv)	To determine compliance, the highest of the determined Specific Energy Consumption values on the combined test bed i.e., SECP-A-Stage 1 and measured value in actual line test i.e., SECPA-Stage 2 shall prevail. The higher of the two values (SECP-A-Stage 1 and SECP-A-Stage 2) shall be considered as SECP-A (Achieved SECP).	**Justification:** Bidder would like to request CMRL to please allow the lowest of the combined test value and actual line test value shall be considered as achieved SECp. **Amendment Requested:** To determine compliance, the ~~highest~~ **lowest** of the determined Specific Energy Consumption values on the combined test bed i.e., SECP-A-Stage 1 and measured value in actual line test i.e., SECPA-Stage 2 shall prevail. The higher of the two values (SECP-A-Stage 1 and SECP-A-Stage 2) shall be considered as SECP-A (Achieved SECP).	Tender Condition Prevails
370	Part 2 – Section VI A: ERTS–RS	13.7.1.14.11	Internal Electronic Destination Display (IEDD) There shall be displays on both ends of non-driving cars and at gangway end of driving cars just above the gangway of the Car. The programmable display shall be capable of displaying the next station destination in Tamil & English language along with other graphic. The minimum size of the display screen shall be 36 inches corner to corner. The location and specification shall be submitted for CMRL approval.	**Justification:** Bidder would like to inform that there is not sufficient space available above gangway to accommodate 36" IEDD as it will have significant cascaded impact on carbody and car interior. Accordingly we request to keep the requirement in line with other projects like ARE03A so that the proven standard product can be used. **Amendment Requested:** Internal Electronic Destination Display (IEDD) There shall be displays on both ends of non-driving cars and at gangway end of driving cars just above the gangway of the Car. The programmable display shall be capable of displaying the next station destination in Tamil & English language along with other graphic. The minimum size of the display screen shall be ~~36~~ 16 inches corner to corner. The location and specification shall be submitted for CMRL approval	Tender Condition Prevails
371	Part 2 – Section VI A: ERTS–RS	13.7.1.14.12	Internal Electronic Destination Display (IEDD) There shall be displays on both ends of non-driving cars and at gangway end of driving cars just above the gangway of the Car. The programmable display shall be capable of displaying the next station destination in Tamil & English language along with other graphic. The minimum size of the display screen shall be 36 inches corner to corner. The location and specification shall be submitted for CMRL approval.	**Justification:** Bidder would like to inform that there is not sufficient space available above gangway to accommodate 36" IEDD as it will have significant cascaded impact on carbody and car interior. Accordingly we request to keep the requirement in line with other projects like ARE03A so that the proven standard product can be used. **Amendment Requested:** Internal Electronic Destination Display (IEDD) There shall be displays on both ends of non-driving cars and at gangway end of driving cars just above the gangway of the Car. The programmable display shall be capable of displaying the next station destination in Tamil & English language along with other graphic. The minimum size of the display screen shall be ~~36~~ **16** inches corner to corner. The location and specification shall be submitted for CMRL approval	Tender Condition Prevails

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372	Part 2 – Section VI A: ERTS–RS	9.6.6	Minimum life expectancy of at least 15 years at local ambient temperature, recharge time, safety margin, etc. shall be considered for the sizing and matching of the battery charger and the batteries.	**Justification:** Bidder would like to inform that minimum life expectancy of 15 years is on bit higher side and is not confirmed by most of the suppliers accordingly we request to amend this requirement in line with other projects including ARE03A. **Amendment Requested:** Minimum life expectancy of at least **12 years** ~~15 years~~ at local ambient temperature, recharge time, safety margin, etc. shall be considered for the sizing and matching of the battery charger and the batteries.	Tender Condition Prevails
373	Part 2 – Section VI A: ERTS–RS	9.6.9 (ii)	The train is being restarted from OFF condition after a shutdown was ordered due to low battery voltage detection. # Note: 24hrs is the minimum duration of Sleep Mode condition which must be achieved (and demonstrated by the Contractor) before the battery charge depletes to the level where the voltage supervision orders a full shutdown of the train. Battery voltage supervision shall always be available when the train is in Sleep Mode. Detailed Sleep Mode power requirements will be finalized based on the electrical load interface of the Onboard Signalling Requirement during the Design Stage.	**Justification:** Bidder would like to inform that sleep mode of 24 hrs is on higher side. Normally 18hrs per day is considered for mainline operation and hence 16hrs for sleep mode shall be sufficient otherwise it will lead to unnecessary increase in size of the battery. Accordingly we request to amend this requirement. **Amendment Requested:** The train is being restarted from OFF condition after a shutdown was ordered due to low battery voltage detection. # Note: **06hrs** ~~24hrs~~ is the minimum duration of Sleep Mode condition which must be achieved (and demonstrated by the Contractor) before the battery charge depletes to the level where the voltage supervision orders a full shutdown of the train. Battery voltage supervision shall always be available when the train is in Sleep Mode. Detailed Sleep Mode power requirements will be finalized based on the electrical load interface of the Onboard Signalling Requirement during the Design Stage.	Tender Condition Prevails
374	Part 2 – Section VI A: ERTS–RS	4.7.3	Each coupler shall include cut-out cocks for manual pneumatic isolation. The location of the cutout cocks shall allow access to operate from both the exterior of the train (at platform level) as well the interior (near the Emergency Operator's Desk).	**Justification:** Bidder would like to inform that cut out cock is available in the exterior as uncoupling is done in depot only. Moreover, sufficient space is not available under the driver desk to accommodate this additional cock. **Amendment Requested:** Each coupler shall include cut-out cocks for manual pneumatic isolation. The location of the cutout cocks shall allow access to operate from ~~both~~ the exterior of the train (at platform level) ~~as well the interior (near the Emergency Operator's Desk).~~	Tender Condition Prevails
375	Part 2 – Section VI A: ERTS–RS	12.16.4	The Contractor shall provide an EPBAC in the cab area to allow an onboard shunter to rapidly vent the MR pressure to apply the parking brakes on the dead train in case of an emergency. The EPBAC handle shall be located behind a clearly labelled access flap.	**Justification:** Bidder would like to inform that EPBAC cock within the cab to vent MR pressure for applying Parking brake doesn't seems to be feasible solution. Moreover, PB isolation cock is already available in saloon car which can be used for applying and releasing PB and sufficient space is not available under the driver desk to accommodate this additional cock. Accordingly, bidder request to delete this requirement.	Tender Condition Prevails
376	Part 2 – Section VI A: ERTS–RS	7.3.9	All compressors within the VAC units shall be inverter controlled variable voltage variable frequency (VVVF) type motors. If DC motors are proposed for Evaporator fans, they must be of a Brushless type.	**Justification:** Bidder would like to inform that the compressor of VVVF type motor currently is not the proven one in the rail industry. Also, we will have 4 compressors per VAC unit, which will give about 8 compressors per Car. This will help us to have 8 stages of cooling capacity. Hence request you to keep the requirement in line with ARE03A contract. **Amendment Requested:** ~~All compressors within the VAC units shall be inverter controlled variable voltage variable frequency (VVVF) type motors.~~ **DC motors shall not be used for compressors in the air-conditioning units.** If DC motors are proposed for Evaporator fans, they must be of a Brushless type.	**Refer Addendum Sl. No. 23 & 24**
377	Part 2 – Section VI A: ERTS–RS	17.5.3.1 (o) (vi)	Pre-cooling (with full passenger occupancy heat load) – Set temperature should be achieved in 30 minutes.	**Justification:** Bidder would like to inform that pre-cooling mode is activated during train preparation and hence there is no passenger within the train. Pre-cooling with AW4 load will lead to very huge design of HVAC which will not be possible to accommodate in the current car. Hence request you to keep the requirement in line with other Indian tenders including DMRC RS17. **Amendment Requested:** Pre-cooling (with ~~full passenger occupancy heat~~ **AW0** load) – Set temperature should be achieved in 30 minutes.	**Refer Addendum Sl. No. 86**
378	Part 2 – Section VI A: ERTS–RS	13.10.12	PEI devices shall include microphones, loud-speakers and an alarm button. A low level / forward facing CCTV camera (tamper proof type) shall be located near to each PEI device to deter misuse. The car CCTV System shall automatically select cameras within the specific area of an alarm activated PEI device and display images in OCC, BCC, DCC and on TCMS screens.	**Justification:** Bidder would like to inform that when PEI is operated then as per our solution nearest camera will zoom in and cover the entire area. Hence, separate low level / forward facing CCTV camera is not required. Accordingly, we request to amend this requirement in line with ARE03A contract and other Indian tenders including DMRC RS17. **Amendment Requested:** PEI devices shall include microphones, loud-speakers and an alarm button. ~~A low level / forward facing CCTV camera (tamper proof type) shall be located near to each PEI device to deter misuse.~~ The car CCTV System shall automatically select cameras within the specific area of an alarm activated PEI device and display images in OCC, BCC, DCC and on TCMS screens.	Tender Condition Prevails
379	Part 2 – Section VI A: ERTS–RS	13.7.1.16.1	6 no's of LCD with LED backlit displays (or superior technology) shall be provided inside each coach. Screens shall be at least 27 inches corner to corner and 16:9 aspect ratio. Display locations and specification shall be submitted for CMRL approval.	**Justification:** Bidder would like to request to keep the requirement in line with other projects like DMRC RS17, ARE03A etc. so that the proven standard product can be used. We are not able to get commitment from the supplier on the increased display size with 16:9 aspect ratio. **Amendment Requested:** 6 no's of LCD with LED backlit displays (or superior technology) shall be provided inside each coach. Screens shall be at least ~~27~~ **21** inches corner to corner and 16:9 aspect ratio. Display locations and specification shall be submitted for CMRL approval.	Tender Condition Prevails
380	Part 2 – Section VI A: ERTS–RS	9.3.4	The auxiliary converter shall be independently supplied from main transformer, with respect to the traction converter supply. The auxiliary converter shall receive its power from a separate winding in the Traction Transformer. The output voltages of Auxiliary converter inverter system shall be as follows: Output 1 415 V 50 Hz 3ϕ Output 2 230 V 50 Hz 1ϕ Output 3 110 V DC DC voltage supply requirements mentioned in EN 50155 shall be met. The Contractor shall submit the operating characteristics and a load analysis for the Low Voltage Power Supply and for all Output levels proposed in this clause.	We request to amend the clause.We would like the CMRL to open the option of input power source to Auxiliary converter. We would like to have the option of taking the input power from the DC link of the traction converter to have an integrated Traction + Auxiliary converter which reduces the cost	Tender Condition Prevails

ARE04A Contract - Reply to Bidder Queries

<table>
<tr><th>Sl no</th><th>Part/
Section No</th><th>Clause No.</th><th>Original Bid Condition</th><th>Bidder's queries</th><th>CMRL Response</th></tr>
<tr><td>381</td><td>Part-1, Section – IV
Bidding Forms</td><td>4.4.12</td><td>PRICE CENTRE 'RS-CMC' – Comprehensive Maintenance Contract of Rolling Stock for 15 years

This Price Centre comprises of all requirements / activities associated with ERTS – CMC</td><td>Yearly Payment Terms
The present tender conditions have apportioned year wise payments which increases progressively from 1.2% for 1st Year to 3.6% for 15th Year (1.2% for 1st, 2nd & 3rd Year, 1.44% for 4th Year, 1.52% for 5th, 6th & 7th year, 1.8% for 8th & 9th Year, 2.4% for 10th, 11th & 12th Year, 3% for 13th & 14th Year and 3.6% for 15th Year totalling to 30% of RS Lumpsum Price). It is highlighted that there is no coverage for additional payment during overhaul which is there for recent Metro Tenders like Bhopal Indore(BH&IN-02), Bangalore Metro (BMRCL 5RS-DM)& Indian railways Tender (IR100). Further in case of DMRC phase-IV Tender the apportionment % for Year wise CMC payment had been left open to the bidder to propose yearly payment based on bidder's maintenance schedule.
Recommendations:
For Yearly Payment
The present condition do not have coverage for additional spend during overhauls which results in cash degradation for the contractor.
In view of above, we propose:
i) Option 1 :The apportionment amount for individual Milestone number for Price Centre 'RS-CMC' shall be left open to the bidder to propose year wise payment based on Contractor's maintenance schedule.
ii) Option 2 :As an alternate option, higher payment in the years in which intermediate & major overhauls are occurring.</td><td>Tender Condition Prevails.

Also refer Addendum Sl. No. 5</td></tr>
<tr><td>382</td><td>Part-1, Section – IV
Bidding Forms</td><td>2. Schedule of Adjustment Data Table D: For Price Centre RS-CMC</td><td><table><tr><th>Code</th><th>Description</th><th>Source</th><th>Weightage</th><th>Base value and date</th></tr><tr><td>a</td><td>Non-adjustable (Fixed)</td><td>N/a</td><td>0.20</td><td></td></tr><tr><td>b</td><td>All India Consumer Price Index for Industrial Workers for Chennai (CPI-IW)</td><td>*i</td><td>0.40</td><td></td></tr><tr><td>c</td><td>Wholesale Price Index for Manufacture of Electrical Equipment (WPI-MEE)</td><td>*ii</td><td>0.20</td><td></td></tr><tr><td>d</td><td>Wholesale Price Index for Manufacture of Computer, Electronic and Optical Products (WPIMCEOP)</td><td>*iii</td><td>0.20</td><td></td></tr></table></td><td>It is highlighted that the maintenance cost contribution of computer, electronics and optical product is hardly 10% for the Comprehensive Maintenance Contract. Hence it is requested to simplify the Price adjustment formula in line with recent Indian Metro Tenders i.e. 20% fixed, 40% CPI-IW (base Year 2016) and 40% WPI for all commodities (base Year 2011-12) which also reflects the maintenance cost during the CMC period.
The present formulae is not reflecting the correct cost structure and hence may or may not cover the actual inflation in the project phase. Also, indices like WPI-MEE and WPIMCEOP are considered to be very volatile posing additional risk to contractor and employer. In view of above we propose:
The Price Adjustment during CMC as 20% fixed, 40% CPI-IW and 40% WPI for all commodities.</td><td>Tender Condition Prevails.</td></tr>
<tr><td>383</td><td>Part-2,Section – VI C
ERTS - CMC of RS and DM&P</td><td>1.8.2</td><td>The PREB team shall consist of at least 10 fully trained staff per shift who shall be strategically located throughout the network, so as to always ensure that incidents will be attended by PREB staff within 30mins of receiving a request to attend an incident.</td><td>The present CMRL Tender condition specifies the requirement to have Prompt Response and Emergency Breakdown(PREB) team of at least 10 fully trained staff per shift who shall be strategically located throughout the network, so as to always ensure that incidents will be attended by PREB staff within 30 mins of receiving a request to attend an incident.
It is highlighted that this requirement will have a severe cost impact with a minimal efficiency of the PREB team.
Typically in Metro system, trains with major fault are rescued by Train Operator to the nearest depot, Contractor then shall be liable to send staff from RS Maintenance depot (principal depot) to the respective depot for minor corrective intervention. In view of above we propose:
To remove the requirement to have at least 10 fully trained PREB staff per shift. However this requirement shall be managed by Contractor staff through the RS Maintenance depot (principal depot).</td><td>Refer Addendum Sl. No. 65</td></tr>
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