MUMBAI METRO RAIL CORPORATION LIMITED

Mumbai Metro Line-3 Project

IFB No: MM3-CBS-DEQ-9-01

Design, Manufacture, Supply, Installation, Testing & Commissioning and Comprehensive Maintenance Service of Lot I: CNC Under Floor Wheel Lathe, and Lot II: Battery Operated Shunter

Response to Bidders' Queries (SET-1)

Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bid Document Clause Description	Bidder's Query /Clarification	MMRC Response
1	Part 1 Section III	2.4.2.a	12 of 16	A minimum number of eight similar[ii] Contracts (Design, Manufacture, Supply, Installation, Testing & Commissioning) for the respective lot that has been satisfactorily and substantially [iii] completed for Metro/Railway/MRT systems as a prime Contractor, viz, OEM (single entity or JV member) [iv] between 1st January 2013 and the latest Bid submission date	It may be clarified whether mention of "Contracts" refer to only 8 nos. of similar machines satisfactorily and substantially completed.	**Please refer to Addendum No. 1, Sr. No. 1**
2	Part 1 Section IV-B			The Bidder shall quote their prices in lump sum that is by including all kinds of tax liabilities.	Being a foreign well established source of shunter manufacturer, worldwide and in India too, We request to kindly consider delivery terms as on CIF – Mumbai Basis. As it is not possible to pay taxes / duties in INR for a foreign source.	**Bid documents conditions prevail.**
3	Part 2 Section VI A	2.8.3	7 of 104	The effective use of such IT platform requires availability of front end of web-based system at all requisite locations i.e. with Employer's offices, Project Manager's offices, Contractor's end , major sub-contractor's end, design consultant's ends, etc., with certain definite User's rights. Data uploading by Various authorized and trained users is key to effective implementation of the IT system. Employer has recognized this aspect, and the Contractors are required to consider in their proposal the cost of IT staff for data uploading.	We request you to kindly delete this requirement, as it is impractical to load the M&P costs on this account, Unless there is a separate provision for quoting such rates in the price schedule. Moreover, all the cost of license fees associated with such Requirements should be borne by Mumbai Metro and not by the bidders. Hence, we request you to kindly amend the clause.	IT Requirement of the Employer is an intrinsic part of the Contract as is applicable to all contracts of the Project. Hence, the request for deletion of the Clause is not accepted. However, the Clause 2.8.1 is amended for simplification. **Please refer to Addendum No. 1, Sr. No. 2, 3 & 4**
4	Part 2 Section VI-B	2.5.2	4 of 59	**Reliability:** a) Equipment Failures: The Equipment shall not have more than 3 Failures per year.	This is impossible for any manufacturer to commit under the Indian working conditions. Ideally it should be 2 failures per month. This is practical. Hence, we request you to kindly amend the same.	**Bid documents conditions prevail.**
5	Part 2 Section VI-B	3.1	9 of 59	**Fully Automatic Operation:** h) Automatic measuring of wear and machining of brake discs.	This can be complied, but please note that Machining of Brake Discs is never carried out practically in India in every metro. Normally the Brake Discs are replaced when they are found worn out beyond limit. Moreover, this requirement increases the cost of the machine considerably. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**

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6	Part 2 Section VI-B	3.4	11 of 59	**The Wheel Lathe should be able to fulfil the following requirement:** a) The Under - Floor Wheel Lathe is required for re-profiling of wheels and machining of brake discs of Metro trains of Mumbai Metro Line 3.	This can be complied, but please note that Machining of Brake Discs is never carried out practically in India in every metro. Normally the Brake Discs are replaced when they are found worn out beyond limit. Moreover, this requirement increases the cost of the machine considerably. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
7	Part 2 Section VI-B	3.4	11 of 59	**The Wheel Lathe should be able to fulfill the following requirement:** b) The use of Wheel Lathe may not be restricted to Cars of Metro trains only and may be used for turning / re-profiling wheels of other rail vehicles also like Catenary Maintenance Vehicle, wagons etc. with gross load not more than 62 tons for which detailed parameters can be intimated during design stage.	This can be possible, but please note that will be restricted to Vehicles with a max.Axle Load of 17T. Kindly confirm.	It is clarified that any vehicle required to be sent to underfloor Wheel Lathe for wheel profiling shall have an axle load of less than or equal to 17 Tons.
8	Part 2 Section VI-B	3.5	12 of 59	**Operating Requirements:** c) The Wheel Lathe shall be capable of measuring the wear in brake discs and machining wheel mounted brake discs or axle mounted brake discs in situ and othewise.For this, exact and complete arrangement shall be provided during detailed design stage. The tenderer shall describe details of machining procedure for brake disc machining of both the faces of discs.	This can be complied, but please note that Machining of Brake Discs is never carried out practically in India in every metro. Normally the Brake Discs are replaced when they are found worn out beyond limit. Moreover, this requirement increases the cost of the machine considerably. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
9	Part 2 Section VI-B	3.6.2	13 of 59	The Wheel Lathe shall have the capacity of machining of Brake discs of one axle in less than one hour considering removal of maximum 3-4 mm material form brake discs with a surface finish as mentioned in clause no 3.13.2	This can be complied, but please note that Machining of Brake Discs is never carried out practically in India in every metro. Normally the Brake Discs are replaced when they are found worn out beyond limit. Moreover, this requirement increases the cost of the machine considerably. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**

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10	Part 2 Section VI-B	3.7.2	13 of 59	**Machine Control:** All functions of the Wheel Lathe shall be controlled from a single centralised ergonomically designed control panel through both soft keys and push buttons. The control panel/operator pendant shall allow a full and clear view of the cutting points and the drive rollers to the operator. The control panel shall be preferably pendent type and shall not be floor mounted. Independent machining controls one on either side shall be provided on each wheel. The CNC controller shall be of the latest series from M/s Siemens of equivalent. Details of CNC controller shall be described in offer.	This can be complied, but please note that Machining of Brake Discs is never carried out practically in India in every metro. Normally the Brake Discs are replaced when they are found worn out beyond limit. Moreover, this requirement increases the cost of the machine considerably. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
11	Part 2 Section VI-B	3.12.1 (b)	16 of 59	The additional mechanical installation shall make it possible to simultaneously re-profile two wheels of a given axle, dress the inner sides of the wheels, machining of inner and outer sides of brake discs on wheels or brake discs mounted on axle.	This can be complied, but please note that Machining of Brake Discs is never carried out practically in India in every metro. Normally the Brake Discs are replaced when they are found worn out beyond limit. Moreover, this requirement increases the cost of the machine considerably. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
12	Part 2 Section VI-B	5.1.6	40 of 59	**Maintenance Spares:** a) The Contractor shall keep stock, duly accounted, of all spares including unit exchange subassemblies, consumables, lubricants etc., though not specifically listed but are necessary for proper functioning of the Equipment, at site in possession of the Employer.	Please note that, this clause is too stringent to comply and additionally will lead to complications and high costs. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
13	Part 2 Section VI-B	5.1.6	41 of 59	**Maintenance Spares:** d) The Contractor shall, based on the consumption figures of the items in every half-yearly period, increase the stock of spares to be stocked in the Depot in accordance with the above limits. These items shall have to be drawn duly accounted for usage (maintenance of the Equipment) from the Depot Manager.	Please note that, this clause is too stringent to comply and additionally will lead to complications and high costs. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**

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14	Part 2 Section VI-B	5.1.6	41 of 59	**Maintenance Spares**: g) If any spares or consumables owned by the Employer are available, the Contractor shall make use of the same, if so called for by the Employer. The stock of such items utilised by the Contractor shall be replenished in new condition by the Contractor in every quarter along with quarterly replenishments of the consumed materials. Failure in replenishing the stocks, utilised by the Contractor, shall invite a penalty as given in Clause 14, Section X, Part 3.	Please note that, this clause is too stringent to comply and additionally will lead to complications and high costs. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
15	Part 2 Section VI-B	5.1.6	41 of 59	**Maintenance Spares:** h) Where the Contractor replaces parts or components of the Facilities, the replacement parts or components shall become the property of the Employer after replacement. The replaced parts or components shall remain the property of Employer.	Please note that, this clause is too stringent to comply and additionally will lead to complications and high costs. Hence, we request you to kindly delete this requirement.	**Bid documents conditions prevail.**
16	Part 2 Section VI-B	2.5.2	4 of 59	**Reliability:** a) Equipment Failures: The Equipment shall not have more than 3 Failures per year.	Considering the terms defined for Failures and Faults, we feel that this condition can be complied. However, the failures and faults will be counted only if they are caused by Bad Design, Bad Manufacturing or Bad Maintenance of the Machine and not by Force Majeure, Act of God,Bad Workmanship and Faulty Operation of Machine. Hence, we request you to kindly clarify the same.	Please see Clause no 2.5.2 (b). Section VI-B, Part 2 for the necessary clarifications. **Bid documents conditions prevail.**
17	Part 2 Section VI-B	2.5.4	5 of 59	**Maintainability:** Type of Maintenance | Response Time | MTTR Minor Maintenance * | 6 hours | 12 hours Major Maintenance * | 24 hours | 48 hours	Please note that a repair can be Stated as Minor or Major only after attending the same. Therefore, the response time to attend both the repairs shall be same. Therefore, we suggest that Response time to attend the Minor Repair shall be amended to 24 Hours and MTTR should be amended accordingly. Hence, we request you to kindly amend the clause.	**Please refer to Addendum No. 1, Sr. No. 6**
18	Part 2 Section VI-B	3.1	9 of 59	**Fully Automatic Operation:** h) Automatic measuring of wear and machining of brake discs.	Automatic Machining of Brake Disc can be complied, however automatic measuring of wear of brake disc is not possible without human intervention. Hence, we request you to kindly delete this requirement	**Please refer to Addendum No. 1, Sr. No. 7**

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Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bid Document Clause Description	Bidder's Query /Clarification	MMRC Response
19	Part 2 Section VI-B	5.1.6	40 of 59	**Maintenance Spares:** a) The Contractor shall keep stock, duly accounted, of all spares including unit exchange subassemblies, consumables, lubricants etc. though not specifically listed but are necessary for proper functioning of the Equipment, at site in possession of the Employer. b) The stock of spares and consumables should be adequate for next 6 months requirements. All materials expected to last more than next 6 months but up to next three years are required to be kept in stock for a minimum one number or set.	Please note that, stocking of spares, consumables and unit exchange subassemblies for a life cycle period of 6 months to three years will unnecessarily increase the cost of the machine. Therefore, we suggest that stocking of spares and consumables without unit exchange subassemblies for a life cycle period of 6 months to 2 years is more practical. Hence, we request you to kindly review and amend this requirement.	**Bid documents conditions prevail.**
20	Part 2 Section VI-B	2.4.1	3 of 59	a) Width of Car: 3200mm	It may be clarified that width of car is covered in maximum moving dimension/ kinematic envelope of rolling stock as per drg. No. 3 Section XI, Part-4	It is clarified that the width of car is within the maximum moving dimensions / Kinematic envelope of Rolling Stock as per drg. No. 3 Section XI, Part-4.
21	Part 2 Section VI-B	3.1	9 of 59	j) Automatic placement of car bogie on the Wheel Lathe after synchronisation of Shunter with Wheel Lathe	It is experienced that wheel set is brought to the machine by shunter in manual mode due to typical nature of operation & safety requirements. Automatic placement can be unsafe. This may be clarified	**Bid documents conditions prevail.** Bidders shall suitably design the Equipment for all possible hazards.
22	Part 2 Section VI-B	3.3.1	10 of 59	b) Equipment shall incorporate means of adjustment in order to allow for building movement and concrete beam deflections. The maximum expected movement of any section of any building will be ± 25mm vertically, ± 25mm longitudinally and ± 25mm laterally.	This clause has no relevance to Under Floor Wheel Lathe machine. Hence, needs to be deleted.	**Please refer to Addendum No. 1, Sr. No. 8**
23	Part 2 Section VI-B	3.6.2	13 of 59	The Wheel Lathe shall have the capacity of machining of brake discs of one axle in less than one hour considering removal of maximum 3-4 mm material from brake discs with a surface finish as mentioned in clause no 3.13.2	Kindly clarify whether this includes measuring time (approx. 10 mins) or not.	It is clarified that it includes the measuring time. **Bid documents conditions prevail.**
24	Part 2 Section VI-B	4.2	31 of 59	a) Design, Manufacture, Supply, Testing & Commissioning of two (02) numbers of Battery operated Shunter of Capacity 50kN at Aarey Metro Depot of Mumbai Metro Line 3. The scope of supply shall include all equipment and accessories required to make the Equipment fully functional as per the Employer's Requirements, Section VI A and VI B. The Shunter shall comply with the configurations of Rolling Stock and Track profile as indicated in Clause 2.4.1.	Kindly clarify the purpose of 2 shunters. Also, Shunter capacity of 50 kN should be replaced by continuous draw bar pull force of 50kN as the required force of 50kN should be of continuous pull in nature.	It is clearly mentioned in clause 4.3 b), indicating continuous draw bar pull of 50kN. **Bid documents conditions prevail.**

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25	Part 2 Section VI-B	4.6	33 of 59	**Design of Coupler Adaptor:** a) A suitable coupler adopter, compatible with the Metro Car coupler, shall be provided at both ends of the Shunter for coupling the railcars. It shall be designed for pulling, pushing or braking rated loads at all track conditions prevalent at this location. Coupler height shall be adjustable by hydraulic/mechanical mechanism from driver desks well as through remote control and after the tractor has stopped, it shall be possible to position the coupler head at the same height as that of car.	Kindly specify the type of Coupler proposed in the rolling stock	Automatic Coupler is proposed to be fitted on the Rolling Stock. However the Contractor shall have to interface with Rolling Stock Contractor for design of coupler as per Section VI-A, Appendix 5, Indicative Interface Sheet N4.
26	Part 2 Section VI-B	4.3	31 of 59	**Design Consideration:** b) The Shunter shall be capable of generating a continuous draw bar pull of 50 kN while pulling 8-car train load of maximum weight 350 tons on a level track with a minimum curve radius of 100 mts in wet condition and shall be driven by Electric motors controlled through VVVF drives.	Considering the given Track conditions of 0% gradient and min. curve radius of 100 meters, the draw bar pull required to haul 350 tons shall be max. 32kN. A Shunter with 50 kN draw bar pull will be an over designed shunter for the given hauling & track conditions. Hence, we request you to kindly amend this clause.	It is confirmed that the Shunter shall have a capacity of 50kN draw bar pull. **Bid documents conditions prevail.**
27	Part 2 Section VI-B	4.4	33 of 59	**Operative Requirements of Shunter:** c) The braking distances of the Shunter with and without load shall not exceed 3.5 meters on a dry level track with 8 coupled railcars after the application of brake from a speed of 3 kmph. Braking system shall be hydraulically actuated & controlled by a foot pedal or a button on the remote-control unit.	In our design, we have electromagnetic disc brakes controlled by a foot pedal with no negative effect on the required braking distances. Hence, we request you to kindly permit the same	**Please refer to Addendum No. 1, Sr. No. 9**
28	Part 2 Section VI-B	4.10	35 of 59	**Instrument Control Panels:** b) Panel shall be provided ..... •Indication for engine temperature.	Please note that, Engine overheating phenomenon is not observed in Battery Operated Shunters. Therefore, we kindly request you to delete this requirement.	**Please refer to Addendum No. 1, Sr. No. 10.**
29	Part 2 Section VI-B	4.12	35 of 59	**Battery and Battery Charger:** b) The Shunter shall have a battery capacity for at least forty (40) kms travelling without load or for at least nine (09) kms travelling with load of 8-car train without passenger load.	It is impossible to achieve 40 kms travelling distance under unloaded condition. Since, these shunters are mainly suitable for within depot application, approx. 20 kms travelling distance can be achieved under unloaded condition. Hence we request you to kindly amend the clause.	**Please refer to Addendum No. 1, Sr. No. 11.**

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30	Part 2 Section VI-B	4.14.1	36 of 59	**Wheel:** The proposed life of rail wheels of the Shunter shall not be less than 20 years. In case of rubber wheels, the proposed life shall not be less than 10 years after Operational Acceptance.	Please note that, the life of rubber or metal wheels depend upon the usage. However, as a standard, Rubber Tyres with 5 years life and metals wheels with 10 Years life is practical. Hence, we request you to kindly amend the clause.	**Please refer to Addendum No. 1, Sr. No. 12.**
31	Part 2 Section VI-B	4.3	32 of 59	g) It shall have a dismountable roof mounted cabin providing all round visibility. The cabin shall have sufficient inside height for the operator to enter and work comfortably. It shall be well illuminated, have at least two (02) lockable doors, safety glass and screen vipers. The cabin itself shall have several grips for the operator to hold on.	We would like to submit that all machines are produced for their purpose having different design aspects and no. of doors is part of it. We request to kindly allow machines even with one lockable door which is also a proven design in Metro systems, also in India. Please confirm.	**Please refer to Addendum No. 1, Sr. No. 13.**
32	Part 2 Section VI- B	4.3	32 of 59	i) The height of the Shunter (with cabin) shall not be more than 2500 mm above top of rail. The width of the Shunter shall be as less as feasible and, in any case, less than 2800 mm.	We manufacture and have supplied shunters worldwide and in India too in the same category / capacity. The maximum height for our shunter is 2650mm and we believe that this does not affect / restrict the performance of shunter. We request kindly allow 2650 mm as maximum height for the cabin.	**Please refer to Addendum No. 1, Sr. No. 14.**
33	Part 2 Section VI-B	4.4	33 of 59	d) Emergency stop buttons shall be provided in all four corners of the vehicle	Our design provides emergency buttons in all the four sides in middle / with established & proven design for easy access, instead in corners. Please confirm if it is acceptable.	**Please refer to Addendum No. 1, Sr. No. 15.**
34	Part 2 Section VI-B	4.17, 4.18	37 of 59	Standards, Protection and Safety	Our machines are produced as per European Standards. Please confirm if it is fine and acceptable.	It is clarified that European standards are acceptable as stated in Clause 4.17 and 4.18, Section VI-B, Part 2 of the Bidding Documents.

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