



DELHI METRO RAIL CORPORATION LTD.

(A joint venture of Govt. of India & Govt of Delhi)

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No. DMRC/CO/ST/PUR/YBD/M&P/138

Dated- 20/03/15

ADDENDUM- 2

Sub- Addendum to tender document for tender no. DMRC/CO/ST/PUR/YBD/M&P/138 due on 30/03/15 for supply of Wayside Hot Axle Box Detection System.

Some of the prospective bidders have sought the clarifications against the above subject tender. The following is here by clarified as follows:

S. No.	Tender Clause Ref.	Query	Comments
1.	Eligibility Criteria Clause 1	Will the authorized representative company of the manufacturer be the party for all commercial and taxation purposes?	Authorized representative of the proven manufacturer means authorized channel partner/dealer/distributor of the proven manufacturing company.
2.	Taxation	Is this tender eligible for custom duties or any other tax/duties exemption?	If order will be placed on FOB or C&F basis then custom clearance shall be arranged by DMRC and DMRC shall avail the concessional custom duty on project import. If any bidder quotes on FOR destination basis and if the material is import then it shall be the responsibility of the supplier for payment of custom duty and custom clearance in India. In such case bidder can avail the concessional custom duty by registering the contract with custom authorities for availing the concessional custom duty. All necessary documents required for project registration shall be provided by DMRC.
3.	Technical General	Is the configuration on hot axle box detector for single track or double track?	The configuration on hot axle box detector is for single track, which should be able to function for both direction movements of trains.
4.	Technical Specification Clause 3.9(b), Pg. 8/27	Will we be allowed to use hollow sleepers to mount the scanners?	Use of special sleepers can be permitted, subject to the cost of such sleepers being borne by the bidder and DMRC engineers getting convinced that such sleepers will not affect train operations, safety or track repairs. Otherwise equipment mounting will have to be done on the available sleepers.
5.	Technical Specification Clause 2.9(b), Pg. 6/27	As per Clause 2.9(b), detection of axle box temperature is -10°C to 150°C, whereas it is 0°C to 150°C in Clause 6.3(b) on Pg. 13/27. What is the	Clause 2.9 (b) states that the range of thermal imaging of the axle box shall be -10°C to 150°C. Clause 6.3 (b) states that the system should be able to detect that system should be able to detect axle box temperature from

		correct range?	0°C to 150°C. The equipment is supposed to detect -10°C to 150°C temperatures.
6.	Technical Specification Clause 2.9 (d), Pg. 6/27	As per Clause 2.9 (d), the repetition accuracy is ± 1 K at 30°C, whereas it is ± 1 K at 70°C as per Clause 6.3 (d) on Pg. 13/27. What is the correct accuracy?	Clauses 2.9 (d) and 2.9 (e) read together state that repetition accuracy should be ± 1 K for temperatures up to 30°C and ± 2 K or better for temperatures over 30°C. This is the repetition accuracy that is required as per tender specification.
7.	General	Indicate the location of the central unit.	The temperatures and other information gathered by the detectors will have to be directed to the central unit having data storage and display terminal facility, and also and alarms. This facility will be located in the depot, or at station, or at any other convenient point where the rolling stock maintenance/operations staff is available.
8.	Technical Specification Clause 4.1.14, Pg. 10/27	Length of the train, between 1 st and last axle, is to be measured with an accuracy of $\pm 3\%$. Should we consider train speed as constant for this measurement?	As per Clause 4.1.14, the length of the train shall be determined with a $\pm 3\%$ or better accuracy, with a resolution of 1 m. This accuracy shall apply for all speeds of the trains, up to a maximum speed of 100 km/h. The train speed can vary as it passes the HABD/HWD detector equipment, which is clear from Clause 4.1.13. Train speed cannot be considered to be constant.
9.	Technical Specification Clause 7.5 (d), Pg. 17/27	Ambient temperature is mentioned as 40°C up to 70°C. Confirm if it is -40°C to 70°C.	Clause 2.18(a) mentions the environment conditions for sensor modules, where working range is specified as -30°C to 70°C. Also, Clause 2.18 (b) states that extended working range shall be possible on request.
10.	Technical Specification Clause 9.5, Pg. 19/27	Confirm if the requirement of generating a periodic summary report refers to the central unit.	The periodic reports of the HABD and/or HWD are expected to be generated at the central unit. These reports will be in addition to the real-time instantaneous alarms received at the central unit in case of any danger. The standard daily, weekly, monthly and yearly reports, indicating alarms detected and all other important parameters and/or dedications made from the collected data, can be generated automatically, or at any time off-line by the operator. Clause 9.5 mentions this requirement in a generalized manner.
11.	Technical Specification Clause 10.4.1, Pg. 20/27	Elaborate/clarify the software requirements.	Clause 10.4.1 relates to any future change in the configuration of the HABD/HWD system, wherein we can add or reduce the number of units in the HABD/HWD system supplied under this tender. It should be possible to expand/reduce the system size without any need of software change. Provided data storage and

			other capacities should be able to accommodate at least 50% increase in system size.
12.	Appendix 1 Clause 2.1 (a), Pg. 25/27	Alarm types are mentioned as "Magnetic fields, vibration or wheel flat". Is it a mistype? Alarm types related to temperature measurements should be "hot alarm", "warm alarm", "differential alarm" etc. Clarify?	Alarm type "magnetic fields, vibration or wheel flat" refers to the kind of input signals the sensing device is expected to encounter. The nature of alarm trigger input signal are mentioned in a generalized manner; other types of signals can also be sensed, depending on the parameter being monitored. As such, the nature of the alarms is covered in Clause 3 of Appendix 1.

In addition to above, the following amendment is being carried out in above-mentioned subject tender.

S.N.	Ref./ Clause	How presently reads	Should read as (Deletions and additions are shown in "red bold")
1.	1.4	The HABD system is planned to be installed in Line2 on Main Line near Khyber Pass depot of DMRC in Underground system. Line-2 is a Broad gauge Line with operation of Metro Trains supplied by Ms Bombardier Transportation and by Ms Hyundai Rotem. If any data is required and asked for by the bidder, before making an offer, it shall be provided by DMRC.	The HABD system is planned to be installed in any one of the Up or Down track of Line2 on Main Line near Khyber Pass depot of DMRC in Underground system. Line-2 is a Broad gauge Line with operation of Metro Trains supplied by Ms Bombardier Transportation and by Ms Hyundai Rotem. The system should be able to fully function for any direction of movement of the trains at all speeds, up to a maximum of 100 kmph, on the track it is installed on. If any data is required and asked for by the bidder, before making an offer, it shall be provided by DMRC.
2.	1.5	The scope of the HABD system shall include a robust electronic data collection system which measures and identifies hot and damaged axle box bearings and hot wheels. Hot axle box bearings or defective axle box bearings cause damage to the wheels and axles and could lead to catastrophic failures and accidents including derailment to the rolling stock.	The scope of the HABD system shall include a robust electronic data collection system which measures and identifies hot and damaged axle box bearings. Hot axle box bearings or defective axle box bearings cause damage to the wheels and axles and could lead to catastrophic failures and accidents including derailment to the rolling stock. Also, a hot wheel detector (HWD) should be quoted as optional, which if ordered, should be got integrated with the HABD system being supplied.
3.	2.10	The range of thermal imaging of the wheels shall be as follows:	The range of thermal imaging of the wheels and/or brake disks (for the optional HWD) shall be as follows:
4.	4.1.2 (last paragraph)	Where Hot Wheel Detector Sensors are installed: (a) Shall generate alarms based on an absolute temperature threshold. (b) Shall generate alarms based on ambient temperature.	Where Hot Wheel Detector Sensors (optional item) are installed: (a) Shall generate alarms based on an absolute temperature threshold. (b) Shall generate alarms based on ambient temperature.

		<p>(c) Shall generate alarms based on temperature difference on bearings on same axle.</p> <p>(d) Shall generate alarms based on temperature of Axle Box w.r.t. average temperatures of all Axle Boxes of Train on that side of Axle Box.</p> <p>(e) Shall generate alarms based on difference of Maximum and Minimum temperatures of Axle Boxes on that side of the train.</p> <p>(f) The alarm thresholds shall be configurable.</p>	<p>(c) Shall generate alarms based on temperature difference on bearings on same axle.</p> <p>(d) Shall generate alarms based on temperature of Wheel and/or Disk Brake w.r.t. average temperatures of all Wheels/Disk Brakes of Train on that side of Wheels/Disk Brakes.</p> <p>(e) Shall generate alarms based on difference of Maximum and Minimum temperatures of Wheels and/or Disk Brakes on that side of the train.</p> <p>(f) The alarm thresholds shall be configurable.</p>
5.	4.1.4	It should be possible to monitor both tracks on a double-track line from a single housing.	Although under this tender the HABD is to be installed on one track only, in future it should be possible to monitor both tracks on a double-track line from a single housing.
6.	4.1.18(g)	Maximum temperature of each bearing, each wheel, and each disk brake.	Maximum temperature of each bearing (also of each wheel, and each disk brake in case of HWD) .
7.	4.2	Wheel Sensors	Wheel Sensors (for optional HWD)
8.	6.3(b)	Detection of axle box temperature from 0 degrees C up to 150 degrees C.	Detection of axle box temperature from 0 - 10 degrees C up to 150 degrees C.
9.	6.3(d)	Having repetition accuracy of +2K. (+/-1K at 70 degrees, +/-2K at temperature over 30 degrees).	Having repetition accuracy of better than +/- 2K. (+/-1K at up to 30 degrees, +/-2K at temperature over 30 degrees) .
10.	6.8	Able to raise the alarms as based on the conditions specified in para 4.1.2 and as detailed below:	Able to raise the alarms as based on the conditions specified in para 4.1.2 and as detailed below (for Wheels/Disk Brakes also for HWD) :
11.	7.5(d)	Ambient temperature: 40°C up to 70°C.	Surrounding temperature: 40 -30°C up to 70°C.
12.	Appendix 1-Alarms Clause 2.1(a)	Alarm type (Magnetic fields, Vibration, or Wheel Flat).	Alarm Trigger Input Signal type (Can be Temperature , Magnetic fields, Vibration, Pressure, Sound etc. depending on the parameter being monitored).

Please submit your offer accordingly.

All other terms and conditions of the tender will remain same.

(Navneet Kumar)
Dy. Controller of Stores