

Tele : + 91 - 11 -23382967
Fax : + 91 - 11 - 23074119
E mail : dte-as@indiancoastguard.nic.in

BY HAND/ E-MAIL
Coast Guard Headquarters
National Stadium Complex
New Delhi - 1100 01

Reply should be addressed
to the Director General

Quoting: AS-ATM/0110/ASV/RG/MRS

21' Mar 18

M/s

INVITATION OF (TECHNICAL AND COMMERCIAL) QUOTATIONS FOR PROCUREMENT OF ONE (01) IN NUMBER MECHANICAL RUNWAY SWEEPER

1. Bid(s) (**Technical and Commercial**) in separate sealed covers are invited from Indian firms only for supply of 01(One) in number **MECHANICAL RUNWAY SWEEPER (MRS)** for Indian Coast Guard Air Station Ratnagiri. Please superscribe the above-mentioned Title, RFP number and date of opening of the Bids on the sealed cover to avoid the Bids being declared invalid.

2. The address and contact number for sending bids or seeking clarifications regarding this RFP are as given below:-

The Director (Air Staff)
Coast Guard Headquarters
National Stadium Complex
New Delhi - 110 001
Telephone :-011-23382967
Fax : 011- 23074119
Email dte-as@indiancoastguard.nic.in

3. This RFP is divided into five Parts as follows:-

(a) **Part I** - Contains General Information and Instructions for the Bidders about the RFP such as the time, place of submission and opening of tenders, Validity period of tenders, etc.

(b) **Part II** - Contains essential details of the items/services required, such as the Schedule of Requirements (SOR), Technical Specifications, Delivery Period, Mode of Delivery and Consignee details.

(c) **Part III** - Contains Standard Conditions of RFP, which will form part of the Contract with the successful Bidder.

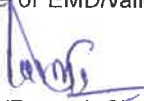
(d) **Part IV** - Contains Special Conditions applicable to this RFP and which will also form part of the Contract with the successful Bidder.

(e) **Part V** - Contains Evaluation Criteria and Format for Price Bids.

4. This RFP is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the RFP, should it become necessary at any stage.

5. You are requested to comply with all the terms and conditions mentioned in the RFP and certificate in this regard is to be endorsed on the quotes submitted by your firm. Relaxation/deviation from terms/conditions if any should be clearly brought out for consideration, however, acceptance of same will solely be at the discretion of the Indian Coast Guard.

6. EMD or valid registration certificate required for exemption of EMD should be kept in separate envelop (not in the envelop that contain Commercial/Price bids). In the absence of EMD/valid registration certificate, the Price Bids will be rejected.


(Ramesh Sharma)
Commander
JD Air Staff (ATM & SE)
for Director General

Enclosure: (i) Technical Compliance Parameters

PART I - GENERAL INFORMATION

1. **Last date and time for depositing the Bid (s).** Your sealed bids (Technical and Commercial) should reach this office latest by **1500 hrs on 13 Apr 18**. The sealed Bids (Both technical and commercial) under **Two Bid System** should be deposited/reach by the due date and time. The responsibility to ensure this lies with the Bidder
2. **Manner of depositing the Bids.** Sealed Bids should be either dropped in the Tender Box (Air Staff) kept at Reception Room at Main Gate of CGHQ, National Stadium Complex ,New Delhi-110011 or sent by registered post at the address given above so as to reach by the due date and time. Late Bids will not be considered. No responsibility will be taken for postal delay or non-delivery/non-receipt of Bid documents. Bids sent by FAX or e-mail will not be considered (unless called for by these modes due to urgency).
3. **Time and date for opening of Bids.** **1500 Hrs on 14 Apr 18** (If due to any exigency, the due date for opening of the Bids is declared a closed holiday, the Bids will be opened on the next working day at the same time or on any other day/time, as intimated by the Buyer).
4. **Location of the Tender Box.** **Reception Room, Main Gate, Coast Guard Headquarters, New Delhi-** Only those Bids that are found in the Tender Box will be opened. Bids dropped in the wrong Tender Box will be rendered invalid.
5. **Place of opening of the Bids.** **Coast Guard Headquarters, New Delhi-** The Bidders may depute their representatives, duly authorized in writing, to attend the opening of Bids on the due date and time. Rates and important commercial/technical clauses quoted by all Bidders will be read out in the presence of the representatives of all the Bidders. This event will not be postponed due to non-presence of your representative.
6. **Two Bid System.** The case is being processed on Two Bid System and, only the Technical Bids would be opened at the time and date mentioned above. Date of opening of the Commercial Bids will be intimated after acceptance of the Technical Bids. Commercial Bids of only those firms will be opened, whose Technical Bids are found compliant/suitable after Technical evaluation is done by the Buyer. Technical bids without compliance parameters as per **Enclosure-1 to this RFP** will be rejected.
7. **Forwarding of Bids.** Bids should be forwarded by Bidders under their original memo / letter pad inter alias furnishing details like TIN number, VAT/CST number, Bank address with EFT Account if applicable, etc and complete postal & e-mail address of their offices.
8. **Clarification regarding contents of the RFP.** A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify the Buyer in writing about the clarifications sought not later than 14 (fourteen) days prior to the date of opening of the Bids. Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have received the bidding documents.
9. **Pre-Bid Meeting** Pre-Bid meeting with the Vendors to clarify all aspects and contents of this RFP including technical specifications will be held at **1430 hrs on 04 Apr 18 in the Office of Principal Director (Air Staff), CGHQ, New Delhi**. Prospective bidders are to intimate details of the representative including name and address of the firm, at least four days prior to the Pre-Bid meeting for obtaining security clearance.
10. **Modification and Withdrawal of Bids.** Bidders may modify or withdraw their bids after submission, provided that the written notice of modification or withdrawal is received by the Buyer prior to the deadline prescribed for submission of Bids. A withdrawal notice may be sent by fax but it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the Buyer not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified. Withdrawal of a bid during this period will result in forfeiture of Bidder's bid security.
11. **Clarification regarding contents of the Bids.** During evaluation and comparison of Bids, the Buyer may, at his discretion, ask the bidder for clarification on his Bid. The request for clarification will be given in writing and no change in prices or substance of the Bid will be sought, offered or permitted. No post-bid clarification on the initiative of the bidder will be entertained.
12. **Rejection of Bids.** Canvassing by the Bidders in any form, unsolicited letter and post-tender correction may invoke summary rejection of the Bids with forfeiture of EMD. Conditional Bids will be rejected.

13. **Unwillingness to quote.** Blank.
14. **Validity of Bids.** The Bids should remain valid till **180 days** from the last date of submission of the Bids.
15. **Earnest Money Deposit.** Bidders are required to submit **Earnest Money Deposit (EMD) 5% of total value** of the contract in favour of "**PCDA (N), Mumbai**". The EMD may be submitted in the form of an Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the public sector banks or a private sector bank authorized to conduct government business as per Form DPM-16 (Available in MoD website and can be provided on request). EMD is to remain valid for a period of **forty-five days** beyond the final bid validity period. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of the final bid validity and latest **on or before the 30th** day after the award of the Contract. The Bid security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Security from him as called for in the Contract. EMD is not required to be submitted by those Bidders who are registered with the Central Purchase Organization (e.g. DGS&D), National Small Industries Corporation (NSIC) or any Department of MoD or MoD itself. The EMD will be forfeited if the bidder withdraws or amends, impairs or derogates from the tender in any respect within the validity period of their tender.

Part II – Essential Details of Items/Services Required

1. **Schedule of Requirements.** List of items / services required is as follows:-

Name/Type of item/services/description of stores Qty required

- (a) One (01) in number Mechanical Runway Sweeper (MRS) BS-IV emission norms compliant, with accessories as per relevant specification and two years maintenance spares for the vehicle. List of compliance parameters of MRS is placed at **Enclosure-1** to this Tender Enquiry.

2. **Technical Details.**

- (a) Specifications/drawings, as applicable
 (b) Technical details with technical parameters } Refer to table below

<u>Sr</u>	<u>Specs / Ref No</u>	<u>Description of Stores</u>	<u>Specifications</u>	<u>Denom</u>	<u>Qty</u>
(i)	---	MECHANICAL RUNWAY SWEEPER	DGAQA/GSE/141 (ICG) ISSUE-1 DATED JAN 2018	No.	01
COLOUR: Will be intimated at the time of contract negotiations					
FOR OBTAINING DETAILS OF SPEC / DRAWINGS DIRECTLY CONTACT OFFICE OF DGAQA/GSE, 'H' BLOCK, NEW DELHI – 110016, TEL: 23014922, FAX; 011-23014914					
ITEM IS TO BE SUPPLIED AS PER DGAQA SPECIFICATIONS REF NO. DGAQA/GSE/ 141(a) DATED APR 10					

3. **Requirement of Installation/Commissioning.** Mechanical Runway Sweeper (MRS) is to be commissioned at the premises of the Consignee Unit after delivery. The commissioning report is to be signed by the representatives of the Vendor and the Consignee Unit. The warranty period of the MRS shall begin from the date of successful commissioning of MRS at premises of the Consignee Unit. A copy of the commissioning report is also required to be submitted to the Payment Agency along with the bills for payment. The installation and commissioning would include:-

- (a) Requirement of Factory Acceptance Trials (FAT) – Yes.
- (b) Harbor Acceptance Trial (HAT) and Sea Acceptance Trial (SAT) – Not Applicable.
- (c) Requirement of Technical Documentation – Yes.
- (d) Nature of assistance required after completion of warranty – Yes, Spares and Parts required.
- (e) Requirement of pre-site/equipment inspection – Yes, as specified by DGAQA/GSE
- (f) Any other details, as considered necessary – Nil.

4. **Tenderers are also requested for the following:-**

- (a) The Tenderer is to quote complete equipment including chassis and super structure.
- (b) The firms are to comply with the technical specifications and parameters of MRS as per **Enclosure-1** to this Tender Enquiry and certificate this effect is to be submitted along with the Technical Bids.
- (c) Approved technical literature as per specification requirements shall be supplied by the contractor to consignee along with equipment. If the supplier fails to supply literature up to 25% supply of main equipment order, 5% payment will be withheld for non-supply of literature.
- (d) Transportation charges for delivery of MRS at destination as per Consignee Details (Part-II Para 7 of RFP) shall be included in the quotes.
- (e) Two years maintenance spares shall be quoted separately giving prices for item.
- (f) Accessories supplied shall be procured from registered sources, wherever available.
- (g) **Submission of Drawings.** Three complete sets of drawings showing Technical specifications of material, dimensions & all relevant details of General Assembly, Super structure, flow diagrams etc. will be submitted by the firm to **DGAQA/GSE within 30 days of the receipt of Supply Order** for approval as per Clause 1.2 of specification DGAQA/GSE/141(ICG) ISSUE-1 DATED JAN 2018.
- (h) **Training** Manufacturer of MRS shall impart training to the operators of the unit holding MRS, free of charge, either at OEM factory or at the Consignee's premises. The training shall be imparted to at least two operators of the unit for a period of one week. A training program will be prepared by the Coast Guard Headquarters, New Delhi in consultation with the supplier so that it is conducted just before the dispatch of equipment to user unit. The training will cover following aspects:-
- (i) Operation of equipment/MRS
- (ii) Trouble shooting
- (iii) Any other subject desired by the operator (Assembly/dismantling will be done at least five times with complete identification of all components for a duration of minimum one week.
- (j) **Interchangeability and Minimum Inventory.** The firms should ensure interchangeability amongst components assemblies, sub assemblies and parts in case of chassis as well as fabricated parts, irrespective of fabricators (In case of more than one fabricator against one order are involved).
- (k) Literature user hand Book and identification Part list is to be prepared as per JSS: 0308:2005 A copy of JSS: 0305:2005 can be obtained from Directorate of standardization, integrated Headquarters of Ministry of Defence (Navy), New Delhi on payment.
- (l) Accepted Pilot sample will be retained for guidance in QA/Production of bulk till acceptance of MRS.
- (m) Place of Quality Assurance will be the firm's premises.
- (n) The firm should quote for accessories against existing entries at **Appendix 'A'** to specification No. DGAQA/GSE/141 (ICG) ISSUE-1, DATED JAN 2018.

5. **Two-Bid System.** In respect of Two-Bid system, the Bidders are required to furnish **Clause by Clause Compliance of Specifications** bringing out clearly the deviations from specification, if any. All the deviations are to be mentioned in the compliance statement in the following format only, along with Technical Bids:-

Para of RFP/SOTR specifications item-wise	Specification of item offered	Compliance to RFP specification – whether Yes/No	In case of noncompliance, deviation from RFP/SOTR to be specified in unambiguous terms

6. **Delivery Period (DP).**

(a) **Prototype:-** The MRS, qty 01 is to be manufactured as per specifications and offered to the inspection agency within four (04) months from the date of the contract. The prototype testing would be carried out at OEM premises by a team of ICG and DGAQA.

(b) **User/Field trials of Prototype**:- The item will be checked as per the TASK Directive issued by CGHQ. The trials will be carried out at a designated consignee premises within **30 days** after issuance of Task Directive by the buyer.

(c) **Supply Status**:- The vendor is required to furnish a monthly progress report of MRS to consignee, till supplies are completed.

Note: Timely Delivery will be the essence of the supply order. The Delivery Period stipulation in the Supply Order/Purchase Order is one of the most important procurement objectives as timely availability of item is vital, particularly for the Department of Defence. The stores are considered to have been delivered only when these are handed over to the consignee after due inspection by the designated Inspecting Agency. Please note that Contract can be cancelled unilaterally by the Buyer in case items are not received within the contracted delivery period. Extension of contracted delivery period will be at the sole discretion of the Buyer, with applicability of LD clause. The schedule of delivery period is **180 days** from the date of Supply Order.

7. **Consignee details.** Officer-in-Charge / The Commanding Officer
ICGAS Ratnagiri
MIDC Area, Airport Road
Ratnagiri – 415 639
Tel.: 02352-224555
Fax: 02352-224088

Part III - Standard Conditions of RFP

The Bidder is required to give confirmation of their acceptance of the Standard Conditions of the Request for Proposal mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Buyer. Failure to do so may result in rejection of the Bid submitted by the Bidder.

1. **Law.** The Contract shall be considered and made in accordance with the laws of the Republic of India. The Contract shall be governed by and interpreted in accordance with the laws of the Republic of India.
2. **Effective Date of the supply order.** The Contract shall come into effect on the date of signatures of both the parties on the contract except when some other effective date is mutually agreed to and specifically indicated/provided in the Contract. The deliveries and supplies and performance of the services shall commence from the effective date of the contract.
3. **Arbitration.** All disputes or differences arising out of or in connection with the Supply Order shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to construction or performance, which cannot be settled amicably, may be resolved through arbitration. The standard clause of arbitration is as per Forms DPM-7, DPM-8 and DPM-9 (Available in MoD website and can be provided on request).
4. **Penalty for use of Undue influence.** The Seller undertakes that he has not given, offered or promised to give, directly or indirectly, any gift, consideration, reward, commission, fees, brokerage or inducement to any person in service of the Buyer or otherwise in procuring the Contracts or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the present Contract or any other Contract with the Government of India for showing or forbearing to show favour or disfavour to any person in relation to the present Contract or any other Contract with the Government of India. Any breach of the aforesaid undertaking by the Seller or any one employed by him or acting on his behalf (whether with or without the knowledge of the Seller) or the commission of any offence by the Seller or anyone employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1986 or any other Act enacted for the prevention of corruption shall entitle the Buyer to cancel the Contract and all or any other Contracts with the Seller and recover from the Seller the amount of any loss arising from such cancellation. A decision of the Buyer or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the Seller. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the Seller towards any officer/employee of the Buyer or to any other person in a position to influence any officer/employee of the Buyer for showing any favour in relation to this or any other contract, shall render the Seller to such liability/ penalty as the Buyer may deem proper, including but not limited to termination of the contract, imposition of penal damages, forfeiture of the Bank Guarantee and refund of the amounts paid by the Buyer.
5. **Agents / Agency Commission.** The Seller confirms and declares to the Buyer that the Seller is the original manufacturer of the stores/ referred to in this supply order and has not engaged any individual or firm, whether Indian or foreign whatsoever, to intercede, facilitate or in any way to recommend to the Government of India or any of its functionaries, whether officially or unofficially, to the award of the contract to the Seller;

nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or recommendation. The Seller agrees that if it is established at any time to the satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual/firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this contract, the Seller will be liable to refund that amount to the Buyer. The seller will also be debarred from entering into any supply Contract with the Government of India for a minimum period of five years. The Buyer will also have a right to consider cancellation of the Contract either wholly or in part, without any entitlement or compensation to the Seller who shall in such an event be liable to refund all payments made by the Buyer in terms of the Contract along with interest at the rate of 2% per annum above LIBOR rate. The Buyer will also have the right to recover any such amount from any contracts concluded earlier with the Government of India.

6. **Access to Books of Accounts.** In case it is found to the satisfaction of the Buyer that the seller has engaged an Agent or paid commission or influenced any person to obtain the contract in clauses relating to Agents/Agency Commission and penalty for use of undue influence, the Seller, on a specific request of the Buyer, shall provide necessary information/inspection of the relevant financial documents/information.
7. **Non-disclosure of Contract documents.** Except with the written consent of the Buyer/seller, other party shall not disclose the contract or any provision, specification, plan, design, pattern, sample or information thereof to any third party.
8. **Liquidated Damages.** In the event of the Seller's failure to submit the Bonds, Guarantees and Documents, supply the stores/goods and conduct trials, installation of equipment, training, etc as specified in this contract, the Buyer may, at his discretion, withhold any payment until the completion of the contract. The BUYER may also deduct from the SELLER as agreed, liquidated damages to the sum of 0.5% of the contract price of the delayed/undelivered stores/services mentioned above for every week of delay or part of a week, subject to the maximum value of the Liquidated Damages being not higher than 10% of the value of delayed stores.
9. **Termination of Contract.** The Buyer shall have the right to terminate this Contract in part or in full in any of the following cases:-
- (a) The delivery of the material is delayed for causes not attributable to Force Majeure for more than **03 months** after the scheduled date of delivery.
- (b) The Seller is declared bankrupt or becomes insolvent.
- (c) The delivery of material is delayed due to causes of Force Majeure by more than **06 months** provided Force Majeure clause is included in contract.
- (d) The Buyer has noticed that the Seller has utilised the services of any Indian/Foreign agent in getting this contract and paid any commission to such individual/company etc.
- (e) As per decision of the Arbitration Tribunal.
10. **Notices.** Any notice required or permitted by the contract shall be written in the English language and may be delivered personally or may be sent by FAX or registered pre-paid mail/airmail, addressed to the last known address of the party to whom it is sent.
11. **Transfer and Sub-letting.** The seller has no right to give, bargain, sell, assign or sublet or otherwise dispose of the contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Contract or any part thereof.
12. **Patents and other Industrial Property Rights.** The prices stated in the present Contract shall be deemed to include all amounts payable for the use of patents, copyrights, registered charges, trademarks and payments for any other industrial property rights. The Seller shall indemnify the Buyer against all claims from a third party at any time on account of the infringement of any or all the rights mentioned in the previous paragraphs, whether such claims arise in respect of manufacture or use. The Seller shall be responsible for the completion of the supplies including spares, tools, technical literature and training aggregates irrespective of the fact of infringement of the supplies, irrespective of the fact of infringement of any or all the rights mentioned above.
13. **Amendments.** No provision of present supply order shall be changed or modified in any way (including this provision) either in whole or in part except by an instrument in writing made after the date of this supply order and which expressly states to amend the present Contract.

5. **Advance Payments.** No advance payment(s) will be made by the buyer.

6. **Paying Authority.**

(a) **Indigenous Sellers** - The Principal Controller of Defence Accounts (Navy), Coast Guard Section No.1, Cooperage Road, Post Box No, 689, Mumbai-400039. The payment of bills will be made on submission of the following documents by the Seller to Coast Guard Headquarters, New Delhi for onward dispatch to the Paying Authority, The Principal Controller of Defence Accounts (Navy), Mumbai - 400 025 along with the bill:-

- i. Ink-signed copy of contingent bill / Seller's bill.
- ii. Ink-signed copy of Commercial invoice / Seller's bill.
- iii. Copy of Supply Order with U.O. number and date of IFA's concurrence, where required under delegation of powers.
- iv. CRVs in duplicate.
- v. Inspection note.
- vi. Claim for statutory and other levies to be supported with requisite documents / proof of payment such as Excise duty challan, Customs duty clearance certificate, Octroi receipt, proof of payment for EPF/ESIC contribution with nominal roll of beneficiaries, etc as applicable.
- vii. Exemption certificate for Excise duty / Customs duty, if applicable
- viii. Bank guarantee for advance, if any.
- ix. Guarantee / Warranty certificate.
- x. Performance Bank guarantee / Indemnity bond where applicable.
- xi. DP extension letter with CFA's sanction, U.O. number and date of IFA's concurrence, where required under delegation of powers, indicating whether extension is with or without LD.
- xii. Details for electronic payment viz Account holder's name, Bank name, Branch name and address, Account type, Account number, IFSC code, MICR code.
- xiii. Any other document / certificate that may be provided for in the Supply order.
- xiv. User Acceptance.
- xv. Photocopy of PBG.

7. **Risk & Expense clause.**

a. Should the stores or any installment thereof not be delivered within the time or times specified in the contract documents, or if defective delivery is made in respect of the stores or any installment thereof, the Buyer shall after granting the Seller 45 days to cure the breach, be at liberty, without prejudice to the right to recover liquidated damages as a remedy for breach of contract, to declare the contract as cancelled either wholly or to the extent of such default.

b. Should the stores or any installment thereof not perform in accordance with the specifications / parameters provided by the SELLER during the check proof tests to be done in the BUYER's country, the BUYER shall be at liberty, without prejudice to any other remedies for breach of contract, to cancel the contract wholly or to the extent of such default.

c. In case of a material breach that was not remedied within 45 days, the BUYER shall, having given the right of first refusal to the SELLER be at liberty to purchase, manufacture, or procure from any other source as he thinks fit, other stores of the same or similar description to make good:-

- i. Such default.
- ii. In the event of the contract being wholly determined the balance of the stores remaining to be delivered there under.

d. Any excess of the purchase price, cost of manufacturer, or value of any stores procured from any other supplier as the case may be, over the contract price appropriate to such default or balance shall be recoverable from the SELLER.

8. **Force Majeure clause.-**

a. Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the present contract), if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as War, Military operation, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

b. In such circumstances the time stipulated for the performance of an obligation under the present

contract is extended correspondingly for the period of time of action of these circumstances and their consequences.

c. The party for which it becomes impossible to meet obligations under this contract due to Force Majeure conditions, is to notify in written form the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from the moment of their beginning.

d. Certificate of a Chamber of Commerce (Commerce and Industry) or other competent authority or organization of the respective country shall be a sufficient proof of commencement and cessation of the above circumstances.

e. If the impossibility of complete or partial performance of an obligation lasts for more than 6 (six) months, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

9. **Specification.** The following Specification clause will form part of the contract placed on successful Bidder - The Seller guarantees to meet the **Technical specifications which can be obtained from Directorate of GSE, DGAQA, New Delhi on payment BASIS** to incorporate the modifications to the existing design configuration to meet the specific requirement of the Buyer Services as per modifications/requirements recommended after the Maintenance Evaluation Trials. All technical literature and drawings shall be amended as the modifications by the Seller before supply to the Buyer. The Seller, in consultation with the Buyer, may carry out technical up-gradation/alterations in the design, drawings and specifications due to change in manufacturing procedures, indigenisation or obsolescence. This will, however, not in any way, adversely affect the end specifications of the equipment. Changes in technical details, drawings repair and maintenance techniques along with necessary tools as a result of up-gradation/alterations will be provided to the Buyer free of cost within **30 days** of affecting such up-gradation/alterations.

10. **Interchangeability and Minimum Inventory.** The firm should ensure Interchangeability amongst components assemblies, sub assemblies and parts in case of chassis as well as fabricated parts.

11. **OEM Certificate** In case the Bidder is not the OEM, the agreement certificate with the OEM for sourcing the spares shall be mandatory. However, where OEMs do not exist, minor aggregates and spares can be sourced from authorized indigenous vendors subject to quality certification.

12. **Earliest Acceptable Year of Manufacture:** 2016 or later Life Certificate is to be enclosed with the Bill.

13. **Transportation.** MRS is required to be delivered at consignees address as mentioned in para 7 of Part-II of Contract inclusive of Packing, Forwarding, Freight charges, Transit Insurance and any other charges as applicable.

14. **Quality** : The quality of the stores delivered according to the present contracts shall correspond to the technical conditions and standards valid for the deliveries of the same stores for in Seller's country or specifications enumerated as per RFP and shall also include therein modification to the stores suggested by the Buyer. Such modifications will be mutually agreed to. The Seller confirms that the stores to be supplied under this Contract shall be new i.e. not manufactured before (Year of Contract), and shall incorporate all the latest improvements and modifications thereto.

15. **Quality Assurance** : After the Supply Order is finalized the Seller would be required to provide the Standard Acceptance Test Procedure (ATP). Buyer reserves the right to modify the ATP. Seller would be required to provide all test facilities at his premises for acceptance and inspection by Buyer/ DGAQA. The item should be of the latest manufacture, conforming to the current production standard and having 100% defined life at the time of delivery.

16. **Quality Assurance Authority:** The designated Inspection Authority for MRS is:- DGAQA/GSE or his authorised representative. Tele: 011- 23014922, FAX: 011-23014914. The mode of Inspection will be Departmental Inspection.

17. **Pre-Dispatch Inspection.** The following Pre-dispatch Inspection clause will form part of the Contract placed on successful Bidder:-

(a) The Buyer's representative will carry out Pre-Dispatch Inspection (PDI) of the Stores/equipment in order to check their compliance with specifications in accordance with its usual standard procedures. Upon successful completion of such PDI, the Seller and Buyer will issue and sign a Certificate of Conformity as per the specimen at From DPM-21 (Available in MoD website and can be given on request.

(b) The Seller shall intimate the Buyer at least **forty five (45) days** before the scheduled date of PDI. The Buyer will send his authorized representative(s) to attend the PDI.

(c) The Buyer reserves the right not to attend the PDI or to request for postponement of the beginning of the PDI by a maximum of **fifteen (15) days** from the date fixed for such PDI in order to allow his representative(s) to attend such tests, in which cases he shall inform in writing the Seller within 15 days before the date of the beginning of the PDI. Should the buyer request for such postponement, liquidated damages, if any, shall not apply. In case the Buyer informs the Seller within the period mentioned hereinabove that he cannot attend the PDI or in case the Buyer does not come at the postponed date requested by him for performance of the PDI as mentioned above, the Seller shall be entitled to carry out said tests alone as scheduled. The Certificate of Conformity and the Acceptance Test Report will be signed by the Seller's QA representative alone and such documents bearing the sole signature of the Seller's QA representative shall have the same value and effect as if they have been signed by both the parties. In case Buyer does not elect to attend the PDI, the Buyer shall intimate the Seller in writing that it writing that it does not wish to attend the PDI.

(d) The Seller shall provide all reasonable facilities, access and assistance to the Buyer's representative for safety and convenience in the performance of their duties in the Seller's country.

(e) All costs associated with the stay of the Buyer's Representative(s) in the country where the PDI is to be carried out, including travel expenses, boarding and lodging, accommodation, daily expenses, shall be borne by the Buyer.

(f) The Seller shall provide Acceptance Test Procedure to the Buyer's QA Agency within one month from the signing of the Contract.

18. **Joint Receipt Inspection.** The following Joint Receipt Inspection clause will form part of the contract placed on successful Bidder:-

(a) The Parties agree that the Joint Receipt Inspection (JRI) of delivered goods shall be conducted on arrival in India at location to be nominated by the Buyer. JRI shall be completed within 90 days arrival of good at the Port Consignee. JRI will consist of:-

(i) Quantitative checking to verify that the quantities for the delivered goods correspond to the quantities defined in this contract and the invoices.

(ii) Completed functional checking of the stores/equipment as per specifications in the contract and as per procedures and tests laid down by Buyer but functional checking of spares shall not be done.

(b) JRI will be carried out by the Buyer's representative(s). The Buyer will invite the Seller with a prior notice of a minimum of **fifteen (15) days** to attend the JRI for the delivered goods. The Seller shall have the right not to attend the JRI. The Bio Data of the Seller's representative will need to be communicated **fifteen (15) days** prior to the dispatch of goods to the Buyer for obtaining necessary security clearance in accordance with the rules applicable in the Buyer's country.

(c) Upon completion of each JRI, JRI proceedings and Acceptance Certificate will be signed by both the parties. In case the Seller's representative is not present, the JRI proceedings and Acceptance Certificate shall be signed by the Buyer's representative only and the same shall be binding on the Seller. Copy of JRI proceedings and Acceptance Certificate shall be dispatched to the Seller within **30 days** of completion of the JRI. In case of deficiencies in quantity and quality or defects, details of these shall be recorded in the JRI proceedings, Acceptance Certificate shall not be issued, and claims raised as per the Article on Claims in the contract. In case of claims Acceptance Certificate shall be issued by Buyer's representative after all claims raised during JRI are settled. If the Buyer does not perform the JRI as mentioned above for reasons exclusively attributable to him, the JRI in India shall be deemed to have been performed and the stores/equipment fully accepted.

19. **Franking clause.**

a. **Franking Clause in the case of Acceptance of Goods** "The fact that the goods have been inspected after the delivery period and passed by the Inspecting Officer will not have the effect of keeping the contract alive. The goods are being passed without prejudice to the rights of the Buyer under the terms and conditions of the supply order.

b. **Franking Clause in the case of Rejection of Goods** "The fact that the goods have been inspected after the delivery and rejected by the Inspecting Officer will not bind the Buyer in any manner. The goods

are being rejected without prejudice to the rights of the Buyer under the terms and conditions of the contract.

20. **Claims.** The following Claims clause will form part of the Contract placed on successful Bidder :-

a. The claims may be presented either: (i) on quantity of the stores, where the quantity does not correspond to the quantity shown in the Packing List/Insufficiency in packing, or (ii) on quality of the stores, where quality does not correspond to the quality mentioned in the contract.

b. The quantity claims for deficiency of quantity shall be presented within 45 days of supply of items and acceptance of vehicles. The quantity claim shall be submitted to the Seller as per Form DPM-22 (Available in MoD website and can be given on request).

c. The quality claims for defects or deficiencies in quality noticed during acceptance/Receipt be presented within 45 days of completion of acceptance of vehicles. Quality claims shall be presented for defects or deficiencies in quality noticed during warranty period earliest but not later than 45 days after expiry of the guarantee period. The quality claims shall be submitted to the Seller as per Form DPM-23 (Available in MoD website and can be given on request).

d. The description and quantity of the stores are to be furnished to the Seller along with concrete reasons for making the claims. Copies of all the justifying documents shall be enclosed to the presented claim. The Seller will settle the claims within 45 days from the date of the receipt of the claim at the Seller's office, subject to acceptance of the claim by the Seller. In case no response is received during this period the claim will be deemed to have been accepted.

e. The Seller shall collect the defective or rejected vehicles from the location nominated by the Buyer and deliver the repaired or replaced goods at the same location under Seller's arrangement.

f. Claims may also be settled by reduction of cost of vehicles under claim from bonds submitted by the Seller or payment of claim amount by Seller through demand draft drawn on an Indian Bank, in favour of Principal Controller/Controller of Defence Accounts concerned.

g. The quality claims will be raised solely by the Buyer and without any certification/countersignature by the Seller's representative stationed in India.

21. **Warranty.** The following warranty will form part of the contract:-

a. Except as otherwise provided in the invitation tender, the Seller hereby declares that the goods, stores articles sold/supplied to the Buyer under this Supply Order shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained/mentioned in Supply Order. The Seller hereby guarantees that the said goods/stores/articles would continue to conform to the description and quality aforesaid for a period of **24 months from the date of commissioning of Mechanical Runway Sweeper** notwithstanding the fact that the Buyer may have inspected and/or approved the said goods/stores/articles, if during the aforesaid period of 24 months the said vehicles be discovered not to conform to the description and quality aforesaid not giving satisfactory performance or have deteriorated, and the decision of the Buyer in that behalf shall be final and binding on the Seller and the Buyer shall be entitled to call upon the Seller to rectify the goods/stores/articles or such portion thereof as is found to be defective by the Buyer within a reasonable period, or such specified period as may be allowed by the Buyer in his discretion on application made thereof by the Seller, and in such an event, the above period shall apply to the goods/stores/articles rectified from the date of rectification mentioned in warranty thereof, otherwise the Seller shall pay to the Buyer such compensation as may arise by reason of the breach of the warranty therein contained.

b. Guarantee that they will supply spare parts, if and when required on agreed basis for an agreed price. The agreed basis could be and including but without any limitation an agreed discount on the published catalogue or an agreed percentage of profit on the landed cost.

c. Warranty to the effect that before going out of production for the spare parts they will give adequate advance notice to the Buyer of the equipment so that the latter may undertake the balance of the lifetime requirements.

d. Warranty to the effect that they will make available the blue prints of drawings of the spares if and when required in connection with the main equipment.

22. **Product Support.** The following Product Support clause will form part of the contract placed on successful Bidder:-

(a) The Seller agrees to provide Product Support for the stores, assemblies/subassemblies, fitment items and consumables, Special Maintenance Tools (SMT)/Special Test Equipment (STE) subcontracted from other agencies/manufacturer by the Seller for a maximum period of **15 years including warranty period after the delivery of Mechanical Runway Sweeper.**

(b) In the event of any obsolescence during the above mentioned period of product support in respect of nay component or sub-system, mutual consultation between the Seller and Buyer will be undertaken to arrive at an acceptable solution including additional cost, if any.

(c) Any improvement/modification/up gradation being undertaken by the Seller or their sub suppliers on the stores/equipment being purchased under the Contract will be communicated by the Seller to the Buyer and, if required by Buyer, these will be carried out by the Seller at Buyer's cost.

23. **Sufficiency Clause.** In the event of consumption of spares exceeding the quantities recommended by the manufacturer for 02 years maintenance period, the firm should be committed to supply the additional spares free of cost.

24. **Consignee's Right of Rejection.** Notwithstanding the fact that an item may have been inspected prior to dispatch, the consignee will have the right to reject it, in whole or part, if it is observed that the item supplied does not conform to the specifications or has been damaged. Such rejection will be communicated to the supplier within 90 days of the item reaching the consignee's premise. If an item is rejected, the supplier is required to replace the item within a period determined by the supplier, which should not be less than **45 days**, filing which he shall make financial restitution base don't he order value. However, in all such cases the provisions contained in the International Chamber of Commerce Publication, INCOTERM 2000, including that regarding change of the right of property, as amended from time to time, will be considered as foreign contracts are governed by international laws.

25. **Air Lift.** The following Airlift clause will form part of the contract placed successful Bidder – Should the Buyer intended to airlift all or some of the stores, the Seller shall pack the stores accordingly on receipt of an intimation to that effect from the Buyer. Such deliveries will be agreed upon will in advance and paid for as may be mutually agreed.

26. **Packing and Marking.** The following Packing and Marking clause will form part of the contract placed on successful Bidder:-

(a) The Seller shall prove packing and preservation of the equipment and spares/ goods contracted so as to ensure their safety against damage in conditions of land, sea and air transportation, transshipment, storage and weather hazards during transportation, subject to proper cargo handling. The Seller shall ensure that the stores are packed in containers, which are made sufficiently strong, and with seasoned wood. The packing cases should have hooks for lifting by crane/ fork lift truck. Tags with proper marking shall be fastened to the special equipment, which cannot be packed.

(b) The packing of the equipment and spares/ goods shall conform to the requirements of specifications and standards in force in the territory of the Seller's country.

(c) Each spare, tool and accessory shall be packed in separate cartons. A label in English shall be pasted on the carton indicating the under mentioned details of the items contained in the carton. A tag in English with said information shall also be attached to six samples of the item. If quantity contracted is less than six then tag shall be affixed to complete quantity contracted of the item. The cartons shall then be packed in packing cases as required.

- (i) Part Number
- (ii) Nomenclature
- (iii) Contract annex number
- (iv) Annex serial number
- (v) Quality contracted

(d) One copy of the packing list in English shall be inserted in each cargo package and the full set of the packing lists shall be placed in Case No.1, painted in a yellow colour.

- (e) The Seller shall mark each package with indelible paint in the English language as follows:-
 - (i) EXPORT
 - (ii) Contract No _____
 - (iii) Consignee _____
 - (iv) Port/ airport of destination _____
 - (v) Ultimate consignee _____

- (vi) SELLER _____
- (vii) Package No. _____
- (viii) Gross/ Net Weight _____
- (ix) Overall dimensions/ Volume _____
- (x) The Seller's marking _____

(f) If necessary, each package shall be marked with warning inscriptions : <TOP>, " Do not turn over", category of cargo etc.

(g) Should any special equipment be returned to the Seller by the Buyer, the latter shall provide normal packing, which protects the equipment and spares/ goods from the damage of deterioration during transportation by land, air or sea. In this case the Buyer shall finalize the marking with the Seller.

27. Engineering Support Package (ESP) Clause. The following ESP clause will form part of the Contract placed on successful Bidder:-

(a) **Repair Philosophy.** The Engineering Support Philosophy shall conform to the repair philosophy as follows:

(i) **Unit Level Repairs.** These are repairs carried out within the unit holding this equipment with tools generally held within the unit or supplied by the manufacturer with each equipment or as per scaling of 1:10 or any other scaling recommended by the manufacturer as per population held in the unit. These pertain to cleaning, lubrication, minor repair and replacement of components and minor assemblies that can be carried in field without any sophisticated tools or test equipment. For carrying out such repairs, the manufacturer is required to provide the following:-

1. Table of tools and equipment (TOTE) with each equipment including operators manual.
2. Scaling of special tools and spares as mentioned above including maintenance manual.

28. Manufacturers Recommended List of Spares (MRLS). Based on the explanation given above, Bidders are requested to provide MRLS to sustain the equipment for a period of **05 years** for various levels of repair as per format given at **Form DPM-19** (Available in MoD website and can be given on request). Bidders will be required to provide these both with Technical and Commercial proposals. While with the commercial proposal, the actual costs of each component/spare will be provided, in the case of Technical Proposal these will be reflected as Low Cost/ Medium Cost/High Cost. **The cost column is to be left blank in the Technical Proposal.** A guideline for this purpose is as under:-

- (a) **Low Cost.** Less than 2 % of the unit cost of the equipment/sub system.
- (b) **Medium Cost.** 2 to 10% of the unit cost of the equipment/sub system.
- (c) **High Cost.** Greater than 10 % of the unit cost of equipment/subsystem.

NOTE: If the complete equipment comprises a number of different sub systems, for example, it is coming mounted on a vehicle or is provided with a stand for mounting or is inclusive of a generator or an air conditioner or has a sight, the MRLS must be provided separately for each such sub system.

29. Technical Literature. Two complete sets of the following documents per Mechanical Runway Sweeper to the consignee unit along with the delivery of the MRS :-

- (a) Maintenance Manual (bilingual in English and Hindi).
- (b) Operators Manual (bilingual in English and Hindi).
- (c) Warranty Certificate for each unit.
- (d) Illustrated Part Catalogue.
- (e) CD(s)/DVD(s) containing Maintenance Manual, Operators Manual and Illustrated Parts Catalogue in Adobe Acrobat format with links for quick access to various maintenance as well as operational aspects and for quick access to spares inventory identification/management.

(f) **An additional set containing a copy of documents each at serial (a) to (e) above is to be dispatched to Directorate of Air Staff, Coast Guard Headquarters , National Stadium Complex, New Delhi - 110001.**

30. **Price Variation (PV) Clause.** The following PV clause will form part of the contract placed on successful Bidder (Note – DGS&D) Manual provides Standardized Price Variation Clauses. Any of those clauses could be considered for inclusion. A sample clause is indicated below):-

(a) The formula for Price Variation should ordinarily include a fixed element, a material element and a labour element. The figures representing the material element and the labour element should reflect the corresponding proportion of input costs, while the fixed element may range from 10 to 25 %. That portion of the price represented by the fixed element, will not be subject to variation. The portions of the price represented by the material element and labour element along will attract Price Variation. The formula for price variation will thus be:-

$$P1 = P0 \{ F + a [M1 / M0] + b [L1/L0] - P0 \}$$

Where P1 is then adjustment amount payable to the supplier (a minus figure will indicate a reduction in the Contract Price).

P0 is the Contract Price at the base level.

F is the Fixed element not subject to Price Variation.

a is the assigned percentage to the material element in the Contract Price.

b is the assigned percentage to the labour element in the Contract Price.

L0 and L1 are the wage indices at the base month and year and at the month and year of calculation respectively.

M0 and M1 are the material indices at the base month and year and at the month and year of calculation respectively.

If more than one major item of material is involved, the material element can be broken up into two or three components such as Mx, My, Mz. Where price variation clause has to be provided for services (with insignificant inputs of materials) as for example, in getting Technical Assistance normally paid in the form of per diem rates, the price variation formula should have only two elements, viz. A high fixed element and a labour element. The fixed element can in such cases be 50 % or more, depending on the mark-up by the supplier of the Per Diem rate vis-a-vis the wage rates.

(b) Following conditions would be applicable to Price Adjustment :-

- (i) Base dates shall be due dates of opening of price bids.
- (ii) Date of adjustment shall be mid point of manufacture.
- (iii) No price increase is allowed beyond original DP unless the delay is attributable to the Buyer.
- (iv) Total adjustment will be subject to maximum ceiling ____ %.

No price adjustment shall be payable on the portion of contract price paid to the Seller as an advance payment.

PART V - EVALUATION CRITERIA & PRICE BID ISSUES

1. **Evaluation Criteria:** - The broad guidelines for evaluation of Bids will be as follows:-

(a) Only those Bids will be evaluated which are found to be fulfilling all the eligibility and qualifying requirements of the RFP, both technically and commercially.

(b) In respect of Two-Bid system, the technical Bids forwarded by the Bidders will be evaluated by the Buyer with reference to the technical characteristics of the equipment as mentioned in the RFP. The compliance of Technical Bids would be determined on the basis of the parameters specified in the RFP. The Price Bids of only those Bidders will be opened whose Technical Bids would clear the technical evaluation.

(c) The Lowest Bid will be decided item wise based upon the lowest price quoted by the particular Bidder as per the Price Format given at Para 2 below. The consideration of taxes and duties in evaluation process will be as follows:

(d) In cases where only indigenous Bidders are competing, all taxes and duties (including those for which exemption certificates are issued) quoted by the Bidders will be considered. The ultimate cost to the Buyer would be the deciding factor for ranking of Bids.

(e) **Blank.**

(f) The Bidders are required to spell out the rates of Customs duty, Excise duty, VAT, Service Tax, etc in unambiguous terms; otherwise their offers will be loaded with the maximum rates of duties and taxes for the purpose of comparison of prices. If reimbursement of Customs duty / Excise Duty / VAT is intended as extra, over the quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duties will be entailed after the opening of tenders. If a Bidder chooses to quote a price inclusive of any duty and does not confirm inclusive of such duty so included is firm and final, he should clearly indicate the rate of such duty and quantum of excise duty included in the price. Failure to do so may result in ignoring of such offers summarily. If a Bidder is exempted from payment of Customs duty / Excise Duty / VAT duty upto any value of supplies from them, they should clearly state that no excise duty will be charged by them up to the limit of exemption which they may have. If any concession is available in regard to rate/quantum of Customs duty / Excise Duty / VAT, it should be brought out clearly. Stipulations like, excise duty was presently not applicable but the same will be charged if it becomes leviable later on, will not be accepted unless in such cases it is clearly stated by a Bidder that excise duty will not be charged by him even if the same becomes applicable later on. In respect of the Bidders who fail to comply with this requirement, their quoted prices shall be loaded with the quantum of excise duty which is normally applicable on the item in question for the purpose of comparing their prices with other Bidders. The same logic applies to Customs duty and VAT also.

(g) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the total price will be corrected. If there is a discrepancy between words and figures, the amount in words will prevail for calculation of price.

(h) Any other criteria as applicable to suit a particular case.

(j) **Blank**

(k) The Lowest Acceptable Bid will be considered further for placement of contract / Supply Order after complete clarification and price negotiations as decided by the Buyer. The Buyer will have the right to award contracts to different Bidders for being lowest in particular items. The Buyer also reserves the right to do Apportionment of Quantity, if it is convinced that Lowest Bidder is not in a position to supply full quantity in stipulated time.

(l) **Blank**

2. **Price Bid Format:-** The Price Bid Format is given below and Bidder are required to fill this up correctly with full details, as required under Part-II of RFP(the format indicated below is only as an illustration).. This format should be filled up with items/requirements as mentioned in Part II of RFP :-

Basic cost of the item:-

(a)	Item(s)	Item	Unit	Price	Qty	Total
	(i)	A				
	(ii)	B				
	(iii)	C				
	(iv)	Total of Basic Price(s)				

- (b) Accessories – NA
- (c) Installation. Commissioning – NA
- (d) Training – NA
- (e) Technical Literature – NA
- (f) Tools – NA
- (g) AMC – NA
- (h) Any Other requirement

3. **Additional information in Price Bid on Taxes and duties**

(a) Is Excise Duty Extra?

(b) If yes, mention the following:-

- (i) Total value of item on which Excise Duty is leviable:
 - (ii) Rate of Excise duty (item-wise if different ED is applicable):
 - (iii) Surcharge on Excise duty, if applicable?
 - (iv) Total value of excise duty payable:
- (c) Is Excise Duty Exemption (EDE) required?
- (d) If yes, then mention and enclose the following:
- (i) Excise notification number under which EDE can be given:
- (e) Is VAT extra?
- (f) If yes, then mention the following:-
- (i) Total value on which VAT is leviable:
 - (ii) Rate of VAT:
 - (iii) Total value of VAT leviable:
- (g). Is Service Tax extra?
- (h) If yes, then mention the following:-
- (i) Total value of Services on which Service Tax leviable:
 - (ii) Rate of service Tax livable:
 - (iii) Total value of Service Tax leviable:
- (j) Is Custom Duty Exemption (CDE) required: NA
- (k) If yes, then mention the following:- NA
- (i) Custom notification number under which CDE can be given (Enclose a copy)
 - (ii) CIF value of stores to be imported:
 - (iii) Rate of Customs Duty payable:
 - (iv) Total amount of Customs Duty payable:
- (l) Octroi/Entry taxes:
- (m) Any other Taxes / Duties / Overheads / Other costs:

**MECHANICAL RUNWAY SWEEPER – TECHNICAL COMPLIANCE MATRIX
REF DGAQA/GSE/141 (ICG) ISSUE-1 DATED JAN 2018**

**SPECIFICATIONS/DRAWINGS AND TECHNICAL DETAILS WITH TECHNICAL
PARAMETERS**

SI No.	Clause No.	Essential QRs	Technically Complied/ Not Complied	Remarks
1	4	<p><u>DESIGN & CONSTRUCTION</u></p> <p>4.1 Climatic condition, the Mechanical Runway Sweeper shall be designed/ constructed for operation in the following environmental condition:-</p> <p>(i) Operation : Outdoor</p> <p>(ii) Temperature Range : -05°C to 55 C</p> <p>(iii) Relative Humidity: Upto 100%</p> <p>(iv) Wind Velocity : 100 Km/hr</p> <p>(v) Altitude : 3000 m above sea level</p> <p>(vi) Rain : From light drizzling to heavy rain</p> <p>(vii) Salt Fog: Suitable for operation under seawater condition.</p> <p>4.2 The Mechanical Runway Sweeper should be a high-speed diesel operated, Truck Mounted Vehicle. Auxiliary Engine operated suction arrangement shall be provided so that dirt particles sucked up are deposited in the container by means of centrifugal force. The Exhaust Air should be cleaned by Bag Filters which are cleaned continuously by Reverse Jet Compressed Air during sweeping operation.</p> <p>4.3 <u>Cabin</u> The cabin shall be provided by chassis OEM only of (BS-IV) emission norms. The cabin shall be ergonomics and have all safety features.</p> <p>(a) It shall be of all metal welded or riveted construction.</p> <p>(b) All rivet and bolt holes shall be drilled (not punched).</p> <p>(c) The structural member of the frame shall be all of 1.6 mm MS Sheet pressed section construction suitably mounted on the chassis with resilient mounting to provide adequate cushion.</p> <p>(d) The exterior/ interior paneling shall be made of 1.25 mm thick cold rolled MS sheets.</p> <p>(e) The roof shall be made out of 1.25 mm thick MS Sheet.</p> <p>(f) The roof shall be adequately insulated against heat with layers of thermo coal with a minimum thickness of not less than 25 mm.</p> <p>(g) The outside of the cab shall be provided with drain channels for rain water drainage on the sides adjacent to the roof.</p> <p>(h) The cab shall be provided with hinged doors on either side, fitted with slam type locks with double catch plates. The hinges, door locks and window regulators shall be of heavy duty and of reputed make. Each door shall be provided with regulating windows with safety glasses, and of adequate size.</p> <p>(i) The cab shall be provided with seating accommodation for two persons including the driver. The seat shall be made of steel tubes. The seats and the back rests shall be upholstered with latex foam rubber cushions or other approved materials and covered with foam rexin of superior quality.</p> <p>(j) The driver seat shall be built on suspension principle and shall be of adjustable type. The adjustment lever with handle is</p>		

	<p>to be provided at a convenient place for ease of operation. The driver's seat shall have a minimum horizontal (Forward & back ward) travel of 100 mm each from the center position and a vertical adjustment of 100 mm. Built-in shock absorber/ coil springs shall be provided to reduce road shocks. Thus enabling the driver to have smooth and comfortable floating ride free of fatigue.</p> <p>(k) The cabin shall have internal sun visors on both sides, seat belts lap type and two fire extinguishers complete with mounting (Type DCP 1 kg).</p> <p>(l) Sufficient space shall be provided in the vehicle cab to allow the mounting of RT communication set. Model I COM 200 VHF RadioSet to be supplied by manufacturer</p> <p>(m) There shall be enough headroom for the driver and co-driver inside the cab. (1.6 Meters minimum length)</p> <p>n) The interior of the cab shall be well ventilated for free circulation of air.the cab must be provided with two air blower.</p> <p>o) Steps shall be provided at appropriate places on either side for the crew to easily step into the cab. Steps should be provided with aluminium chequered plate of 3 mm thickness.</p> <p>p) The wind shield shall have 5.5 mm thick glazed laminated safety glass, the glasses provided on the rear bulk head, side/window/door glasses shall be 5.0 mm thick and laminated safety glass type.</p> <p>q) The cab shall be fitted with adjustable rear view mirrors 150x100mm at appropriate places.</p> <p>r) The vehicle cab is fully glazed and sound proof providing good all round vision. The facilities inside the cab are consistent with the intended use of the vehicle. Seating for driver/operator are of sprung construction for comfort.</p> <p>s) Exhaust noise suppressed, not exceeding 85dB inside driver's cab.</p> <p>t) The clearance between the cabin and equipment portion of the mechanical runway sweeper shall not be less than 75mm.</p> <p>u) The cab shall be so designed that engines/accessories are easily accessible for maintenance.</p> <p>v) All the joints in the cabin, windows, doors etc shall be dust proof.</p> <p>w) All the windows and doors shall be designed in such a manner so as to be completely rattle proof.</p> <p>x) Electrically operated heavy duty wiper motors with 350mm long blade shall be provided on the Windscreen on both sides.</p>		
	<p>4.4 TECHNICAL SPECIFICATION</p>		
	<p>4.4.1 PRODUCT STANDARD – The Runway Vacuum Sweeper shall as a minimum be in the accordance with the requirement of this specification and shall be the manufacturer's commercial product. The chassis and auxiliary engine will be procured by the MRS manufacturer.</p>		
	<p>4.4.2 MATERIALS</p> <p>(a) Material used shall be free from defects, which would adversely affect the performance and maintainability of individual components or the overall assembly. Material not specified herein shall be of the same quality used for intended purpose in commercial practice unless otherwise specified herein. All equipment, materials and articles incorporated during the fabrication by this specification are new and fabricated.</p> <p>(b) The different raw materials like MS sheet, angles and other bought out components like pressure gauges, V Belts, fasteners, V Belt Pulley, hoses, castors etc. shall confirm to the relevant IS / BS 5 specifications.</p> <p>(c) All bearings shall be of SKF or standard reputed makes.</p>		

	<p>(d) The Hydraulic pumps, motors and other accessories like pressure control valves, flow control valves, Pilot Check Valves etc. shall be of either Vickers or Danfoss or standard reputed make. The Hydraulic Pump shall be Pressure Compensating Variable Displacement Axial Piston Pump. The Hydraulic Control Functions are to be regulated through Electrical Controlled Load Independent Proportional Valves.</p> <p>(e) The pneumatic system compressor shall be of reputed make complying with relevant IS/BS/SAE specifications.</p> <p>(f) All hydraulic and pneumatic cylinders, hoses air tank etc shall be subjected to proof pressure test as per the standard practice.</p> <p>(g) The fuel and hydraulic oil tanks shall be subjected to an internal pressure test of 1.2 atmospheres and no leakage shall be permitted.</p> <p>(h) The sheet metal parts and other components which are exposed to atmosphere will be subjected to salt spray test on the discretion of DGAQA. The sheet metal parts shall undergo process of degreasing & pickling and phosphating before painting. The paint schemes is as follows:-</p> <p>(i) Two coats of polyurethane primer.</p> <p>(ii) Three coats of polyurethane enamel.</p> <p>NOTE: (i) The paint should be suitable for continuous operation under sea weather conditions.</p> <p>(ii) ALL MOJOR COMPONENTS STRICTLY TO BE AS PER APPENDIX 'A' TO HIS SPECIFICATION.</p>		
	<p>4.4.3 SAFETY</p> <p>(a) The Runway Vacuum Sweeper shall be safe to operate and maintain. All parts which are subjected to high operational temperatures or which are energized electrically shall be insulated, fully enclosed or guarded when such parts are exposed to contact with personnel or otherwise creates a hazard. Exhaust or discharge from Vacuum Sweeper shall be directed, so that they do not endanger personnel. Nonfunctional sharp edges, projecting points and excess length of fastening devices shall be avoided. Protective devices shall not impair the operating functions. Warning sign shall be displayed on or near components containing hidden hazards.</p> <p>(b) STABILITY: The height of the center of gravity of the load shall not be greater then 95% of the distance between outer wall of the supporting Tyres measured at the out side of their contact with the ground.</p>		
	<p>4.4.4 EASE OF MAINTENANCE</p> <p>The Runway Vacuum Sweeper shall be so designed and constructed that normal adjustments, repair and overhaul can be readily accomplished by means of general purpose tools with minimum removal/ disturbance of other elements of the unit. Ease of maintenance provision shall ensure operation clearances for facilitating maintenance and servicing. Where possible, intricate locking devices, controls and threaded fastening that can be easily over torqued by operated shall be avoided. Cover plates that must be removed for component adjustment after parts removal shall be equipped with substantially quick removal fasteners.</p>		
	<p>4.4.5 LEADING PARTICULARS (Technical Details) The vehicle in general should conform to the following overall dimensions and weights specified.</p> <p>A) Dimensions:</p>		

		<p>(i) Overall Length : 8000 mm (max) (ii) Overall Width : 2500 mm (max) (iii) Overall Height: 3500 mm (max) [without rotating warning beems]</p> <p>B) Weight: (i) Gross Weight : 16000 kg (max) (ii) Payload : 5000 kg (max)</p> <p>C) Wheel base : 4500 mm (max) D) Cleaning Width : 2200 mm (max) E) Ground Clearance : 150 mm (min) F) Sweeping Capacity (i) The sweeping capacity shall not be less than 90,000 meter²/hour at a speed of not less than 40 Km/hr (ii) Sweeping Speed 5 - 40 km/h</p> <p>G) <u>Dirt Container Capacity:-</u> Volume of dirt container : 5 Cu. M. (Net Min)</p> <p>H) <u>Sweeping System</u> (i) The road sweeper should be capable to sweep in Dry Mode without spraying water. The machine should have efficient mechanical cyclonic separators and Bag Filters, which are cleaned continuously during the sweeping operation through reverse compressed air jet purging through solenoid valve. The machine should be equipped with central brush and Vacuum Suction Head. The operation of Lowering and rising of Central Brush should be carried out from operator's cabin. The brush should be adjustable for pressure and wear as inclination. Brush should be operated with independent Hydraulic drives. The rotational speed of the sweeping brushes can be adjusted from the driver's cabin for effective sweeping at an infinitely variable speed range of 0 to 500 rpm of main brush with reference to vehicle speed of 40 kmph by operating an electrical lever on driver control panel. ii) The machines should be provided with suitable speed reduction units (Intermediate Gear Box) in the Truck, wherein; the sweeping is carried out at low speeds between 5 to 40 Km/Hr while the truck is in 3rd Gear. This facility is important for optimum fuel consumption as well as to prevent damage to Engine, gearbox and clutch of Truck. iii) The sweeping machine should have provision of air blower both sides, which will be used to clean in inaccessible area of fallen leaves and mowed down grass. The flow of air from side blowers shall be regulated by Electro pneumatic valves. The control knobs for these valves should be provided on control panel in Drivers cabin.</p> <p>I) <u>Dust Control System:</u> i) It should comprise of Two stage Filtration System with built in Cyclonic Separator for collection of large dust particles and special PTFE coated bag filters with continuous Cleaning System during sweeping operation by reverse compressed air jet purging. Complete control should be PLC(Programmable Logic controller) operated. ii) It should have provision for compressed Air for Cleaning Bag Filters provided through inbuilt Air compressor. The Machine should be capable of undertaking sweeping jobs without any water spray on the brushes or on the road i.e. the equipment should have Dry Sweeping capabilities. However, water spray system with</p>		
--	--	--	--	--

minimum 800 Litres capacity in Stainless Steel Tank and Piping should be provided for optional use.

iii) The exhaust from the equipment exhauster should be absolutely clean and within the pollution control norms of 100 Mg/M³, when the machine is carrying-out sweeping in Dry Mode, i.e. without spraying any water.

J) Magnetic Attachment:

Magnetic Attachment for picking up of metal pieces should also be provided in rear. The lowering and lifting of Magnetic Attachment should be done from the Driver's Cabin. The Magnet should be able to cover a pick-up width of minimum 2 Mtrs.

K) Spray Water System:

Water tank shall be manufactured with Stainless Steel material.

Water tank Volume : 800 ltrs.

Water Pump : - Working Pressure : 4 Bar
 - Delivery : 20 Ltr/Min.
 - Spray jets on top of Sweeping Brushes.

Water tank level indicator on outside of the container containing inlet and outlet should be of IS / BS standard. The water spray should be switched ON/OFF from Driver's Cabin.

L) Environmental Conditions:

The Runway Sweeper shall be capable of operating satisfactory in the following conditions:

- a) Ambient temperature: -5°C to + 55°C
- b) Relative Humidity upto 100%
- c) Airfield altitude from sea level upto 3500 M.

Note :- The Runway sweeper should be able to work continuously in saline atmosphere.

M) Mobility:

When fully equipped, the Sweeper shall attain the following performance on dry level, concrete surface.

- i) Highway travel speed : 60 KM/Hr.
- ii) Turning radius : Not more than 10 M.
- iii) Ground Level clearance : 150 mm (min.)

N) Equipment Parameters:

Sweeping Speed : 5 to 40 KMPH
 Sweeping Width : 2200 mm (Approx) Max
 Theoretical working performance: 90000 Sq. M/H

4.4.6 MANUFACTURING AND CONSTRUCTION

A) COMPONENTS AND PARTS - The components/parts exposed to atmosphere may be subjected to 'Salt spray test' on the discretion of DGAQA officer.

Sl.No	Item	Qty
i)	Automotive Chassis	01
ii)	Chassis Cabin	01
iii)	Instrument & Control Panel	As reqd.

iv)	Auxiliary Engine	01
v)	Vacuum System	01
vi)	Hydraulic System	01
vii)	Pneumatic System	01
viii)	Spray Water Unit	01
ix)	Electrical / Lighting	As reqd.
x)	Equipment / Magnetic attachment	As reqd.

B) CHASSIS

The complete Vacuum System including all components and accessories shall be mounted upon a commercial automotive chassis as specified herein. The *Chassis* of (BS-IV) emission norms should meet environment conditions as specified in para 4.1 and also CPCB norms. The automotive chassis shall be manufacturer's current standard commercial model of 4x2 drive. It shall be Twin Axle 16Ton GVW (Minimum) with Six-wheels four rear and two front. The wheel base dimensions shall be suitable for proper load distribution when sweeper is being operated both as a cleaning unit on paved surface and when traveling on road. The wheel base should not be more than 4500 mm.

i) **ENGINE**

The engine shall be reputed make and dully approved by competent authority. The engine should be four stroke cycle, diesel type engine having not less than six cylinders. It shall develop the necessary brake horse power and torque required.

ii) **ENGINE LUBRICATING SYSTEM**

The engine lubricating system shall provide adequate lubrication under all operating conditions and shall be equipped with an oil pump and an oil filter of the size recommended by the engine manufacturer. The engine shall perform satisfactorily when operated on the type and grades of lubricating oil specified by the manufacturers.

iii) **ENGINE AIR FILTER**

Engine Air Filter should be oil bath type.

iv) **EXHAUST SYSTEM**

The Chassis shall be equipped with an efficient muffler and exhaust system. The muffler and tail pipe shall be so designed to avoid undue increase in back pressure. The tail pipe shall be so positioned that exhaust gases are not directed to the ground.

v) **FUEL TANK**

The fuel tank shall have sufficient capacity for uninterrupted operation for a period of 8 hours and have a suitable design including baffles. Mounting of the tank shall be in such a manner that it will not be damaged or distort the chassis frame. The fuel tank will also not be affected by heat from the engine exhaust pipe or muffler.

vi) **FUEL SYSTEM**

The fuel system shall be manufacturer's standard with

	<p>a Fuel Filter with Filtering Element of suitable material for fuel filtration.</p> <p>vii) <u>TRANSMISSION</u> Clutch - Single Plate Dry Type Gear Box - Five-Speed Synchronesh</p> <p>viii) <u>BRAKE SYSTEM</u> Air Pressure Diaphragm operated with Dual Line Arrangement with following requirement: - (a) Drum Type front a rear (b) Service Brake - Pneumatic with two independent circuits. (c) Emergency Brake -Build up into service brake. (d) Parking-Manual brake, Hand operated air actuated. (e) Engine stop to be provided.</p> <p>ix) <u>WHEEL RIMS AND TYRES</u> (a) 2 Nos in front and 4 Nos. in rear. Tyre Size - Front - 10 x 20 -16 PR Nylon Rear - 10 x 20 - 16 PR Nylon (b) A spare wheel shall be provided.</p> <p>x) <u>ELECTRICAL SYSTEM</u> (a) 12V/24V Negative Earth with two pole wiring and separate MRS operating fuse box. (b) Circuit Breaker:- All electric circuits shall be provided by reset circuit breakers of the automatic trip type to provide for over load current protected . Circuit Breaker shall be readily assessable and protected against excessive heat, water spray and physical damage.</p> <p>xi) <u>INSTRUMENTS AND CONTROLS</u> The Equipment Operation and Automation including Instrumentation will be through Programmable Logic Controller based System. The instrument panel should be provided in Driver cabin and should be adjustable so that controls can be operated by Driver and co-driver both.</p> <p>xii) <u>STEERING</u> (a) Power assisted steering to the front axle by normal automotive steering wheel in operators Cab shall be provided. The steering unit shall be of cam and roller type. (b) Manual steering shall be available in the event of power steering system failure.</p> <p>xiii) <u>LIGHTINGS</u> The vehicle shall be equipped with clearance lights, stop lights, directional signals, fog lights wiper dual speed and following in addition shall confirms:- (a) Two sealed beam headlamps with high/low beam. (b) A red rotating beacon shall be installed on top of the vehicle. (c) 4 directional signals lights shall be of the self-canceling type with visual and audible indicator. (d) Cab dome light. (e) Two search lights not less then 200 Watts capacity (adjustable) (f) An electric horn actuated by a button in the hub of steering wheel.</p>		
--	--	--	--

		<p>(g) Parking brake release warning light</p> <p>(h) All gauges and instruments shall be marked with red and green lines on sections as appropriate to indicate normal operating condition.</p> <p>(i) Inspection lamp with suitable length of cable chord to be provided.</p>														
		<p>4.4.7 AUXILIARY ENGINE:</p> <p>The Auxiliary engine shall be of current standards, commercial, compression ignition four stroke cycle, multi cylinder diesel type and shall be the same make and model as the engine fitted in prime mover. The engine shall develop the necessary BHP and torque required to drive the vacuum fan and all required engine accessories .The auxiliary engine should be equipped with 12V/24V electrical system. The engine shall be mounted in a readily accessible location to permit preventive and routine field maintenance without removal of the engine or major component from chassis. The engine should be of reputed make and dully approved by the competent authority.</p>														
		<p>4.4.8 SWEEPING AND SUCTION (VACUUM SYSTEM)</p> <p>The Sweeping Machine should be capable to sweep in Dry Mode without spraying water. The machines should have efficient Mechanical Separators and Bag Filters, which are cleaned continuously by Reverse Compressed Air Jet Purging during the sweeping operation.</p> <p>The machine should be equipped with Central Brush, and tiltable Vacuum Suction Head, Hood cover containing aux. engine, hyd systems items etc with noise suppressor lining, vacuum suction hood and dirt container. Aux engine will be mounted on chassis.</p>														
		<p>4.5 SWEEPING TEST</p> <p>All sweeping tests shall be performed within an ambient temperature range of -5°C to +55°C. The requirement of each individual sweeping test specified herewith shall be met by one pass of the sweeper over the test area.</p> <p>A) Stone Pick-up Test Ten stones approximately spherical in shape and 40 to 50 MM Diameter shall be placed on a level concrete pavement in straight line, each at 410 MM interval. The sweeper shall pass over the line of stones at 20 KMPH in a direction normal to the lines. The sweeper shall pick-up and retain all the stones.</p> <p>B) Steel Object Pick-up Test The stone pick-up test shall be repeated except that solid steel objects of 25 MM diameter and 75 MM long shall be used. The objects shall be laid on their sides in different directions.</p> <p>C) Sand & Gravel Pick-up Test Dry sand having a grain size of between 1.5 MM and 2.5 MM shall be used for this test. The gradation of the peagravel shall be such that 100 percent passes the 100 screen size. The test material shall be uniformly spread over a paved area of 2200 MM wide and 6000 MM long. The sweeper shall meet the pick-up requirements specified in Table – I.</p> <p>TABLE-I-SAND AND GRAVEL PICK-UP REQUIREMENTS</p> <table border="1"> <thead> <tr> <th>SPEED KMPH</th> <th>TEST MATERIAL</th> <th>DENSITY OF DRY SAND KG/SQM</th> <th>PICK-UP PERCEN T</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>SAND</td> <td>1.15</td> <td>98</td> </tr> <tr> <td>25</td> <td>SAND</td> <td>1.15</td> <td>90</td> </tr> </tbody> </table>	SPEED KMPH	TEST MATERIAL	DENSITY OF DRY SAND KG/SQM	PICK-UP PERCEN T	5	SAND	1.15	98	25	SAND	1.15	90		
SPEED KMPH	TEST MATERIAL	DENSITY OF DRY SAND KG/SQM	PICK-UP PERCEN T													
5	SAND	1.15	98													
25	SAND	1.15	90													

		<table border="1"> <tbody> <tr> <td>40</td> <td>SAND</td> <td>1.15</td> <td>70</td> </tr> <tr> <td>5</td> <td>SAND</td> <td>2.3</td> <td>98</td> </tr> <tr> <td>25</td> <td>SAND</td> <td>2.3</td> <td>75</td> </tr> <tr> <td>40</td> <td>SAND</td> <td>2.3</td> <td>60</td> </tr> <tr> <td>5</td> <td>PEA GRAVEL</td> <td>2.3</td> <td>98</td> </tr> <tr> <td>25</td> <td>PEA GRAVEL</td> <td>2.3</td> <td>90</td> </tr> <tr> <td>40</td> <td>PEA GRAVEL</td> <td>2.3</td> <td>80</td> </tr> </tbody> </table> <p>D) Miscellaneous Objects Pick-up Test – (i) The items listed below shall be placed on a level concrete pavement with item placed at 300 MM intervals in line. The sweeper shall pass over the contaminated area at 25 KMPH and shall pick-up and retain not less than 90 percent of the articles. Seven each of the following items shall be used for this test :- Sheet Aluminum, 50MM², 3MM Thick Finishing Nails, 50 MM Long Ball Bearings, 10 MM Diameter Flat Washers, 10 MM inside diameter Bolts 5 MM diameter and 50 MM long Hexagon nuts 10 MM nominal thread size Aluminum rivets, 5 MM diameter and 25 MM long Safety Wire (Crumpled) 300 MM long (ii) MISCELLANEOUS: Other material like stone chips, grass, sharbs wood pieces, bricks pieces etc available at road side must also be tested at an speed of 25 kmp and shall pickup not less than 90%.</p> <p>E) CRACK CLEANING TEST : A pavement crack on joint approximately 10mm wide ,10mm deep and 2200mm long shall be filled with sand of specific grade .The sweeper shall meet pick up requirements specified in table below when traveling in a direction normal to the crack:-</p> <table border="1"> <tbody> <tr> <td>(a)</td> <td>Speed (Kmph)</td> <td>5</td> <td>25</td> </tr> <tr> <td>(b)</td> <td>Pick up (Percent)</td> <td>95</td> <td>90</td> </tr> </tbody> </table>	40	SAND	1.15	70	5	SAND	2.3	98	25	SAND	2.3	75	40	SAND	2.3	60	5	PEA GRAVEL	2.3	98	25	PEA GRAVEL	2.3	90	40	PEA GRAVEL	2.3	80	(a)	Speed (Kmph)	5	25	(b)	Pick up (Percent)	95	90		
40	SAND	1.15	70																																					
5	SAND	2.3	98																																					
25	SAND	2.3	75																																					
40	SAND	2.3	60																																					
5	PEA GRAVEL	2.3	98																																					
25	PEA GRAVEL	2.3	90																																					
40	PEA GRAVEL	2.3	80																																					
(a)	Speed (Kmph)	5	25																																					
(b)	Pick up (Percent)	95	90																																					
2	5.0	<p>MARKING</p> <p>The following information shall be printed on an anodized plates and fixed on control panel:-</p> <ul style="list-style-type: none"> (i) Chassis No. (ii) Engine No. (iii) Aux. Engine No. (iv) Supply Order No. (v) Serial No. with year of manufacture (vi) Specification No. (vii) Manufacturer's name and address (viii) Designed & developed by DGAQA. 																																						
3	6.0	<p>WARRANTY</p> <p>The store supplied against the specification shall be deemed to be and warranty of the contractor against defective design, material, process, performance for a period of not less than 18 months from the date of receipt of the stores by the consignee in satisfactory condition.</p> <p>During the period, if any of the store is found to be defective by the consignee, a defect report should be raised to all concerned. Any defective item during the period of warranty must be replaced immediately by the supplier. Spare parts must be made available by the manufacturer / supplier for at least next 10 years from the date of supply of main equipment.</p>																																						

4	7.0	<p align="center"><u>TECHNICAL DOCUMENTATION</u></p> <p>(A) Each Mechanical Runway Sweeper shall be supplied with following literatures in the booklet form:-</p> <p>i) <u>Operator's Handbook</u> : Operating Instruction with trouble shooting</p> <p>ii) <u>Maintenance Manual</u> : Covering maintenance procedure including servicing schedule, fault diagnosis techniques, the recommend period between maintenance and any special instruction covering all aspects of the vehicle.</p> <p>iii) Electrical wiring diagram</p> <p>iv) Hydraulic Diagram</p> <p>v) Pneumatic Circuit Diagram</p> <p>vi) Lubricating charts</p> <p>vii) <u>Workshop Repair Manual</u> : Covering repair procedure and techniques upto overhaul phase on all aspects of vehicle. It should contain sufficient Information to permit disassembly, inspection, repair, testing and re-assembly and shall be illustrated with drawings/photographs on exploded views.</p> <p>B) Spare parts catalogue with exploded view of all components along with price list.</p> <p>C) All the documents shall be printed on good quality paper and suitably binded in booklet form.</p> <p>D) Two copies of each document should be handed over to DGAQA and two copies to Consignee along with one copy each in respect of operator's handbook covering operating instructions including trouble shooting in a booklet binded form to be supplied with each equipment (MRS).</p> <p>E) Inspection Report : Firm has to prepare the Pre-Inspection report giving all the details of the each component as per the Bill of Material. Report must consist of source of supply, broad specification, acceptance criteria, acceptance authority, acceptance certificate, approved drawing Stage Inspection Report, Internal Inspection Report, Performance Report, Environmental Report , major deviation, if any.</p>		
		<p><u>7.1 Inspection</u></p> <p>The supplier must ensure the following prior to offering of the Stores for inspection.</p> <p>i) Validity of the sufficient delivery period (at least 20% time of production).</p> <p>ii) Approval/provisional clearance of the drawing from AHSP,</p> <p>iii) Availability of in house testing records and copy of the same to be forwarded to Inspecting Agency.</p>		
5	8.1	<p><u>QUALITY ASSURANCE</u></p> <p><u>Prototype Clause</u></p> <p>i) Prototype clause is applicable to all the suppliers .The manufacturer is required to provide the equipment for trial evaluation in India on "No cost no commitment basis" Govt. of India reserved the right to reject the technical bid if the bidder is failed to comply the above requirement.</p> <p>ii) User's Trial shall be conducted on the prototype. It is supplier's responsibility to position the prototype at designated place free of cost. The place for prototype may be different than the actual consignee indicated in the Supply Order. All the feasible modifications/changes suggested by the User during prototype evaluation shall be carried out on the prototype sample without any extra cost. All the design/drawing shall be sealed by AHSP after evaluation of prototype. One copy of all the drawings shall be retained by the AHSP.</p>		

	<p>(iii) Bulk Production' Clearance shall be accorded only after successful User's Trial and implementation of all the modification by the Supplier in the <u>prototype</u>.</p>		
	<p>8.2 Offering of the Stores for Inspection The supplier must ensure the following prior to offering of the Stores for inspection.</p> <p>i) Validity of the sufficient delivery period at least 20% time of production.</p> <p>ii) Approval/provisional clearance of the drawing from AHSP.</p> <p>iii) Availability of in-house testing records and copy of the same to be forwarded to Inspecting Agency following offering letter.</p> <p>iv) List of Deviation of concession during the in house concession /testing /stage inspection.</p> <p>v) Calibration Status of Measuring equipment for critical equipment.</p> <p>vi) Raw Material Certificate</p> <p>vii) Physical Inspection/dimensional report.</p> <p>viii) Final Assembly/inspection /Performance Test.</p> <p>ix) Environmental Certificate.</p> <p>x) Design Calculation, if any</p>		
	<p>8.2.1 i) The contractor/manufacturer shall be fully responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the supplier may use his own, or any other facility for the performance of the inspection requirements specified herein unless disapproved by the Inspecting Authority.</p> <p>ii) Access to Manufacturer's Works :- During the currency of the contract, the Inspecting Officer shall have free access to the manufacturer's works and to examine any process, stage assembly and the finished product.</p>		
	<p>8.3 (i) Test Facility: The contraction shall provide all necessary test facilities including fuel and oil etc for conducting type tests, acceptance tests and user trials.</p> <p>(ii) The Mechanical Runway Sweeper shall be subjected to Inspection during all stages of manufacture at the discretion of the <u>inspecting officer</u>.</p>		
	<p>8.4 CLASSIFICATION OF TEST: The MRS shall be subjected to various tests under the following classification of tests:</p> <p>(a) Type Tests</p> <p>(b) Acceptance Tests</p> <p>Note:</p> <p>(i) Tests to be carried out on paved non-concrete surface.</p> <p>(ii) The performance tests shall be carried out by various materials.</p> <p>(iii) The MRS should meet the performance requirements specified in the specification.</p> <p>(iv) Through out the tests there should be no evidence of undue wear/damage or overheating of components. Any leakage of oil noticed shall be capable of being stopped by the application of the standard tools</p> <p>(v) Should at any time during the tests, the MRS fails to satisfy the performance requirements, the cause is to be investigated, involving stripping and dismantling as may be necessary and fault rectified. The tests are to be repeated to the satisfaction of the Inspecting Officer. Additional Tests, if required, may be carried out by the inspecting officer. Details of all such occurrences are to be recorded in the manufacturer's report of the tests.</p> <p>(vi) The following parameters shall be recorded in the performances Test sheet while carrying out the tests on the</p>		

	<p>MRS.</p> <p>(a) Auxiliary Engine R.P.M.</p> <p>(b) Brush RPM.</p> <p>(c) Starting temperature of the chassis and auxiliary engine.</p> <p>(d) Vacuum to be recorded inside the cabin gauge and out side gauge at rear.</p>		
	<p>8.5 Endurance Test: In addition to general performance "each production" mechanical runway sweeper shall be subjected to an Endurance Test. This test shall be carried out for not less than 10 hours. After successful completion of the 10 hour endurance test, it will be subjected to a sweeping test as per clause 4.5.</p> <p>(a) The advance sample (Proto-type) sample sweeper, if so stipulated in the order shall be operated as a pavement cleaning unit with the vacuum fan operating at not less than rated speed for 10 hours. The speed of the sweeper may be varied from 5 kmph to 40 kmph. At least 75 percent of the total time credited to the endurance testing shall be for periods of not less than 4 hours continuous operation. No period of operation of less than 30 minutes duration shall be credited to the endurance Test. At the conclusion of the endurance test, the sweeper shall meet the sweeping requirements of this will apply to first contract on each supplier or on introduction of new models.</p> <p>(b) The Proto-type sample should also be tested for performance test in extreme climatic condition during user's trial.</p>		
	<p>8.5.1 The following tests shall be carried out as type test on the prototype sample:</p> <p>(a) Visual Examination :- This will cover dimensional checks, material conformity checks, testing quality of welding, workmanship and finish accessibility for maintenance and servicing operation, identity of materials of components as per approved bill of materials.</p> <p>(b) Component Actuation Tests : A cycle of 50 actuation tests of the Hydraulic and Pneumatic Cylinders as installed in the MRS is to be carried out.</p> <p>(c) Hydraulic Testing :- This will cover such items operated by Hydraulic pressure such as hydraulic jacks, hydraulic pipe lines. Hydraulic system shall be exercised at least 50 times each prior to commencement of sweeping test to ensure system reliability.</p> <p>(d) Pneumatic System Checks :- The various components of the pneumatic system shall be exercised at least 50 times each prior to the commencement of the sweeping test to ensure system reliability.</p> <p>(e) Sweeping Test as per clause 4.5.</p> <p>(f) Endurance Test as per clause 8.5</p> <p>(g) Road running trials : The prototype mechanical runway sweeper shall be subjected to the road trials as follows:-</p> <p>I. Unladen condition : 25 km distance at 70 kmph including negotiation of gradients as recommended by the chassis manufacturer.</p> <p>II. Laden condition (with dirt container loaded with 2400 Kg of stone, sand and steel objects) for 100 km distance at 60 kmph including exploitation on gradients as recommended by the chassis manufacturer.</p> <p>8.6 ACCEPTANCE TESTS FOR BULK STORES (MRS)</p> <p>(a) The bulk produced stores shall be subjected to the tests listed at 8.5.1 (a) to (g) except tests at f & g.</p> <p>(b) The equipment shall also be subjected to inspection</p>		

		<p>during all the stages of its manufacturing at the discretion of inspection authority. If 20% of inspection checks found defective or incorrect, the whole delivery may be rejected without further examination/checks. These tests are as under;</p> <p>(I) Vacuum test : Vacuum test to be carried out after fully closing of dust container and to be noted from casing gauge and outside gauge fitted at rear door. There should not be any leakage.</p> <p>(II) Alignment test: This check to be carried out on the blower getting drive from engine.</p> <p>(III) Dynamic balancing: This shall be applicable to the blower before its fitting inside the blower casing.</p> <p>(IV) Installation check: This will cover all the components of the MRS security/soundness of installation and the layout of the system.</p> <p>(V) Dimensional check: cabin, hood and other sub assy/assy. Like dust container ,water tank etc.</p> <p>(VI) Electrical system check: this include the serviceability of all the system.</p> <p>(VII) Exterior and interior finish: The quality and workmanship of the welding work, finishing/painting carried out etc shall be inspected.</p> <p>(VIII) Weighting of MRS: The MRS shall be weighted in unladen condition for FAW, RAW, GVW.</p>		
6	9.0	<u>INFORMATION TO BE FURNISHED BY MANUFACTURER IN TECH BID</u>		
		<p>9.1 <u>TECHNICAL DETAILS AND DOCUMENTATION</u> Following Technical details to be provided by the Bidder: - <u>RUNWAY SWEEPING MACHINE</u> a) Sweeping Width b) Sweeping Speed c) Sweeping Capacity per hour d) Central Brush Diameter and Length e) Dust Hopper Capacity f) Water Tank Capacity g) Filter System The Bidder should provide complete details of the Filter System, i.e. type of Bag Filters Media, Bag Filter Area and Bag Filter Cleaning Arrangement on a continuous basis. i) Auxiliary Engine Make, Type and Capacity j) Air Compressor Make, Type and Capacity k) Air blower l) Pick-up Width of the Magnet m) Hydraulics Pump make and Capacity Motor Details n) Operational Control Details o) Intermediate Gear Box provided or not. p) Facility for controlling Rotation speed of sweeping brush from Driver's Cabin. q) Chassis Details Make and Model Engine Details GVW Brake System</p>		
		<p>9.2 <u>Detail to be furnished along with the quotation</u> The technical bid must be accompanied with the following otherwise if shall be treated as invalid:- (i) Para wise compliance with regard to governing specification.</p>		

		<p>(ii) Remark in para wise "NOTED" shall not be considered.</p> <p>(iii) "NOTED" can be used only where change of earlier specified remark is amended due to advancement of technology etc.</p> <p>(iv) It must be clearly indicated "AGREED", "NOT AGREED", "COMPLIED".</p> <p>(v) Wherever not agreed detailed reason must be furnished.</p> <p>(vi) Deviation/concession at any para with respect of raw material, process, design, inspection, testing must be clarified.</p> <p>(vii) Supplier must ensure that all the drawings and details indicated in the specification are collected from DGAQA, prior to quotation. Supplier should also ensure that he has purchased the correct technical specification prior to particular tender enquiry. Receipt for purchase of specification may please be endorsed to the technical bid.</p> <p>(viii) Hydraulic/Pneumatic Flow diagram along with Bill of material/make of components.</p> <p>(ix) Electrical / Electronic propose circuit diagram.</p> <p>(x) Salient design features of the equipment.</p> <p>(xi) List of major assemblies/sub-assemblies including make</p> <p>(xii) Percentage of import content in the total equipment.</p> <p>(xiii) Proposed QA plan for the in-house activities during development/production of the store.</p> <p>(xiv) Spare Part List for 10 years for maintenance of the equipment.</p> <p>(xv) List of standard tools & accessories supplied free along with the equipment.</p> <p>(xvi) The quotation of cab in case chassis is supplied by the indenter without cabin shall also be submitted.</p> <p>(xvii) No correspondence shall be entertained once the technical bids are submitted.</p> <p>(xviii) The bids must be forwarded in two separate sealed covers, Cover-1 will be containing the Technical Bid and Cover-2 will be containing the Price Bid. Both the Bids covers will be sealed, with clear mention on the envelopes – TECHNICAL – UNPRICED BID and PRICE BID. The Price Bid of only Technically qualified and accepted Bidders will be opened.</p> <p>Note : Technical bids including detailed drawings and design of all systems & sub assemblies and the capability of the bidders to manufacture and supply the MRS strictly as per the specification will be evaluated thoroughly by a Technical evaluation committee. Technical bid not recommended by the TEC will be summarily rejected and their price bids will not be opened.</p>		
7	10.	<p>TRAINING/FAMILIARIZATION: The supplier be required to provide free of charge in the maintenance and operating aspects and its equipment as follows:</p> <p>(i) Local Training: In the country, training/course on the maintenance on operation shall be provided for a period not less than 5 days. All materials, instructional aid and other training requirements which are integrated to the comprehensive assimilation of instruction shall be borne by the manufacturer.</p>		
8	11.	<p>PAINT WORK FINISH AND MARKING</p> <p>(i) All materials subject to corrosive and weathering effects of salt or other atmospheric conditions shall be suitably protected. The driver's cabin, wheel walls and all exposed underside chassis and under carriage shall be rust proof. All metal parts shall be conditional, prime coated and protected.</p> <p>(ii) Vehicle surface shall be treated and painted as per user requirement which will be advised during the time of</p>		

9	12.	<p>contract negotiation.</p> <p>CONCLUSION</p> <p>The raw materials components, equipments purchase parts shall be of best commercially available quality complying with national and international standard and interchangeability. As far as feasible approved materials, parts shall be used.</p> <p>The manufacturer is free to suggest any modification, which in his opinion may result in better quality/improved performance. Such suggestion are welcome & due weightage will be given.</p> <p style="text-align: center;">DIRECTORATE GENERAL OF AERONAUTICAL QUALITY ASSURANCE MINISTRY OF DEFENCE "H" BLOCK HUTMENTS NEW DELHI - 110 011</p>																																																																																																	
<p>BILL OF MATERIAL OF MAJOR COMPONENTS APPENDIX 'A'</p>																																																																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S.LO</th> <th style="width: 35%;">DESCRIPTION</th> <th style="width: 35%;">MAKE</th> <th style="width: 10%;">QTY</th> <th style="width: 15%;"></th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>AUTO MOTIVE CHASSIS</td> <td>ASHOKE LEYLAND : CG1613 OR TATA: LPT 1613 TC</td> <td>1</td> <td></td> </tr> <tr> <td>2.</td> <td>DRIVER SEAT</td> <td>ASHOKE LEYLAND / TATA</td> <td>1</td> <td></td> </tr> <tr> <td>3.</td> <td>CO- DRIVER SEAT</td> <td>ASHOKE LEYLAND / TATA</td> <td>1</td> <td></td> </tr> <tr> <td>4.</td> <td>COLD STARTING KIT</td> <td>ISO 9000 CERTIFIED FIRM</td> <td>2</td> <td></td> </tr> <tr> <td>5.</td> <td>CHASSIS CABIN</td> <td>APPROVED DESIGNED</td> <td>1</td> <td></td> </tr> <tr> <td>6.</td> <td>AUXILIARY ENGINE 6 CYLINDERS, DIESEL MIN 92 HP AT 1500 RPM</td> <td>ASHOK LEYLAND / TATA / CUMMINS</td> <td>1</td> <td></td> </tr> <tr> <td>7.</td> <td>SILENCER</td> <td>SMG/ ISO 9000 CERTIFIED FIRM MAKE</td> <td>1</td> <td></td> </tr> <tr> <td>8.</td> <td>BLOWER FOR DRIVER CABIN</td> <td>APPROVED DESIGNED / ISO 9000 CERTIFIED FIRM MAKE</td> <td>2</td> <td></td> </tr> <tr> <td>9.</td> <td>CENTRIFUGAL BLOWER SUITABLE TO CREATE DESIRED VACUUM FOR MRS</td> <td>INDIGENOUS APPROVED DESIGNED / ISO 9000 CERTIFIED FIRM MAKE</td> <td>1</td> <td></td> </tr> <tr> <td>10.</td> <td>FASTENERS</td> <td>TVS / UNBRAKO</td> <td>AS REQ.</td> <td></td> </tr> <tr> <td>11.</td> <td>FILTERS PTFE COATED NON WOVEN TYPE</td> <td>IMPORTED / APPROVED MAKE</td> <td>5 SETS</td> <td></td> </tr> <tr> <td>12.</td> <td>AIR COMPRESSOR WORKING PRESSURE 12 KG/CM**2 700 LPM AT 1050 RPM</td> <td>ELGI / KIRLOSKAR</td> <td>1</td> <td></td> </tr> <tr> <td>13.</td> <td>MAIN HYDRAULIC PUMP</td> <td>VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE</td> <td>1</td> <td></td> </tr> <tr> <td>14.</td> <td>AUXILIARY PTO PUMP</td> <td>VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE</td> <td>1</td> <td></td> </tr> <tr> <td>15.</td> <td>HYDRAULIC MOTORS</td> <td>VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE</td> <td>3</td> <td></td> </tr> <tr> <td>16.</td> <td>HYDRAULIC CYLINDERS</td> <td>WIPRO / DENTAL HYDRAULIC</td> <td>AS REQ.</td> <td></td> </tr> <tr> <td>17.</td> <td>SOLENOID VALVE</td> <td>ASCO/ LUTHRA/ISO 9000 CERTIFIED FIRM MAKE</td> <td>AS REQ.</td> <td></td> </tr> <tr> <td>18.</td> <td>HYDRAULIC HOSES</td> <td>SUPER SEAL/ SONI/ MARKWELL/ISO 9000</td> <td>AS REQ.</td> <td></td> </tr> </tbody> </table>					S.LO	DESCRIPTION	MAKE	QTY		1.	AUTO MOTIVE CHASSIS	ASHOKE LEYLAND : CG1613 OR TATA: LPT 1613 TC	1		2.	DRIVER SEAT	ASHOKE LEYLAND / TATA	1		3.	CO- DRIVER SEAT	ASHOKE LEYLAND / TATA	1		4.	COLD STARTING KIT	ISO 9000 CERTIFIED FIRM	2		5.	CHASSIS CABIN	APPROVED DESIGNED	1		6.	AUXILIARY ENGINE 6 CYLINDERS, DIESEL MIN 92 HP AT 1500 RPM	ASHOK LEYLAND / TATA / CUMMINS	1		7.	SILENCER	SMG/ ISO 9000 CERTIFIED FIRM MAKE	1		8.	BLOWER FOR DRIVER CABIN	APPROVED DESIGNED / ISO 9000 CERTIFIED FIRM MAKE	2		9.	CENTRIFUGAL BLOWER SUITABLE TO CREATE DESIRED VACUUM FOR MRS	INDIGENOUS APPROVED DESIGNED / ISO 9000 CERTIFIED FIRM MAKE	1		10.	FASTENERS	TVS / UNBRAKO	AS REQ.		11.	FILTERS PTFE COATED NON WOVEN TYPE	IMPORTED / APPROVED MAKE	5 SETS		12.	AIR COMPRESSOR WORKING PRESSURE 12 KG/CM**2 700 LPM AT 1050 RPM	ELGI / KIRLOSKAR	1		13.	MAIN HYDRAULIC PUMP	VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE	1		14.	AUXILIARY PTO PUMP	VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE	1		15.	HYDRAULIC MOTORS	VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE	3		16.	HYDRAULIC CYLINDERS	WIPRO / DENTAL HYDRAULIC	AS REQ.		17.	SOLENOID VALVE	ASCO/ LUTHRA/ISO 9000 CERTIFIED FIRM MAKE	AS REQ.		18.	HYDRAULIC HOSES	SUPER SEAL/ SONI/ MARKWELL/ISO 9000	AS REQ.	
S.LO	DESCRIPTION	MAKE	QTY																																																																																																
1.	AUTO MOTIVE CHASSIS	ASHOKE LEYLAND : CG1613 OR TATA: LPT 1613 TC	1																																																																																																
2.	DRIVER SEAT	ASHOKE LEYLAND / TATA	1																																																																																																
3.	CO- DRIVER SEAT	ASHOKE LEYLAND / TATA	1																																																																																																
4.	COLD STARTING KIT	ISO 9000 CERTIFIED FIRM	2																																																																																																
5.	CHASSIS CABIN	APPROVED DESIGNED	1																																																																																																
6.	AUXILIARY ENGINE 6 CYLINDERS, DIESEL MIN 92 HP AT 1500 RPM	ASHOK LEYLAND / TATA / CUMMINS	1																																																																																																
7.	SILENCER	SMG/ ISO 9000 CERTIFIED FIRM MAKE	1																																																																																																
8.	BLOWER FOR DRIVER CABIN	APPROVED DESIGNED / ISO 9000 CERTIFIED FIRM MAKE	2																																																																																																
9.	CENTRIFUGAL BLOWER SUITABLE TO CREATE DESIRED VACUUM FOR MRS	INDIGENOUS APPROVED DESIGNED / ISO 9000 CERTIFIED FIRM MAKE	1																																																																																																
10.	FASTENERS	TVS / UNBRAKO	AS REQ.																																																																																																
11.	FILTERS PTFE COATED NON WOVEN TYPE	IMPORTED / APPROVED MAKE	5 SETS																																																																																																
12.	AIR COMPRESSOR WORKING PRESSURE 12 KG/CM**2 700 LPM AT 1050 RPM	ELGI / KIRLOSKAR	1																																																																																																
13.	MAIN HYDRAULIC PUMP	VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE	1																																																																																																
14.	AUXILIARY PTO PUMP	VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE	1																																																																																																
15.	HYDRAULIC MOTORS	VIKERS / DENFOSS/ISO 9000 CERTIFIED FIRM MAKE	3																																																																																																
16.	HYDRAULIC CYLINDERS	WIPRO / DENTAL HYDRAULIC	AS REQ.																																																																																																
17.	SOLENOID VALVE	ASCO/ LUTHRA/ISO 9000 CERTIFIED FIRM MAKE	AS REQ.																																																																																																
18.	HYDRAULIC HOSES	SUPER SEAL/ SONI/ MARKWELL/ISO 9000	AS REQ.																																																																																																

		CERTIFIED FIRM MAKE	
19.	PNEUMATIC CYLINDERS	SMG/ ISO 9000 CERTIFIED FIRM	1
20.	WATER PUMP	ISO 9000 CERTIFIED FIRM MAKE	1
21.	FRL UNIT	ISO 9000 CERTIFIED FIRM MAKE	1
22.	PLC	ALLEN BRADLY / ISO 9000 CERTIFIED FIRM MAKE	1
23.	SELECTOR SWITCH /	DELEX / INDICATORS/ CONTROL	1 SET
24.	INDICATORS GAUGES	PRECOL	
25.	LIGHTS	LUCAS	AS REQ.
26.	MAGNETIC ATTACHMENT	INDIGENOUS APPROVED DESIGNED/ ISO 9000 CERTIFIED FIRM	1
27.	GEARS OF INTERMEDIATE TRANSMISSION GEAR BOX	ISO 9000 CERTIFIED FIRM	1
28.	OIL SEALS	FENNER / SUPER SEAL/ DMCO	AS REQ.
29.	V BELTS	FENNER / ISO 9000 CERTIFIED FIRM	AS REQ.
30.	FUSES	MICO	AS REQ.
31.	WONDERING HOSE AIR BLOWER	DUTRAN / ISO 9000 CERTIFIED FIRM Firm s approved design	1 2
32.	VALVES	VIKERS/ YUKEN/HI-TECH/ISO 9000 CERTIFIED FIRM MAKE	AS REQ.
33.	VACUUM GAUGE	H GURU / FI BACK / ISO 9000 CERTIFIED FIRM MAKE	1
34.	RADIO SET VHF ³	MODEL I COM 200	1