

Government of India
Ministry of Railways
Research Designs & Standards Organisation (RDSO)
Manak Nagar, Lucknow (INDIA) – 226011
(Notification No. RDSO-MCONDT(TEST)/3/2024, dated: 09.01.2025)
for
‘EXPRESSION OF INTEREST (Open ended)’

Ministry of Railways, Research Designs and Standards Organisation (RDSO), Lucknow, INDIA is inviting the proposal from the firms for the work as detailed below:

SN	Name of Work	Contact Person
1.	Development of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service.	Name: Smt. Sunita Designation: Director/M&C-II Mob: 9794863209 Email: mncndt@gmail.com

The EOI is for Development of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service. All interested eligible firm of Phased Array Ultrasonic Single Rail Tester and Double Rail tester for manufacturing and supply to Indian Railways network, under prevailing and envisaged operating conditions.

The term “firm” means an OEM (Original Equipment Manufacturing).

The firms, who have required experience and capabilities in the above fields, having necessary accreditation for such work and are interested in carrying out above work, are requested to see the FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) on RDSO website (<https://rdso.indianrailways.gov.in/>). The interested firms may download the referred FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) from the URLs as detailed in **Annexure-C**.

In case of any clarification/ difficulty, the firm may contact the concerned Director of Metallurgical & Chemical (M&C) Directorate whose contact details are indicated above on any working day.

The Interested firms may submit their willingness for undertaking the above work in prescribed format attached herewith.

The firms are requested to submit the proposal and requisite details in the prescribed format to Director/M&C-II, M&C Directorate, Manak Nagar, Lucknow-226011 (INDIA) directly or on mail id- **mncndt@gmail.com**.

SUNITA
Digitally signed
by SUNITA
Date: 2025.01.09
11:31:55 +05'30'

(Smt. Sunita)
Director/M&C-II,
For Director General (M&C)
RDSO, Lucknow

Instructions/Guidelines for the firms submitting proposals against this 'Expression of Interest' (EOI)

1. DISCLAIMER:

Indian Railways reserves the right not to proceed with the process or at a later stage to change the process as per the requirements of Indian Railways. It also reserves the right to decline to discuss the process further with any party submitting the proposal.

The proposal submitted should satisfy the FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) described in as given in **Annexure-C**.

The intending participants will furnish proposals at their own cost and no claims, whatsoever; in this reference, will be entertained by the Indian Railways.

2. PURPOSE OF INVITING EOI:

The purpose of this EOI is to Develop of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service.

With the above objective, Indian Railways seeking to give opportunity to manufacture and supply the equipment to Indian Railway network.

3. GENERAL INSTRUCTIONS FOR SUBMITTING PROPOSALS TO THE EOI:

3.1 Eligibility criteria:

The proposal is for Development of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service not meeting the FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) laid down requirements shall be summarily rejected without further consideration.

The eligible firm shall provide the details of manufacturing and supply of similar equipment phased Array Ultrasonic testers and its performance for the previous three years and current ongoing year on any of the World Railway/any industries in the following format.

Year	Name of the Railway/any other industries where Phased Array ultrasonic Tester used	No. of Phased Array ultrasonic Tester	*Performance of Phased Array ultrasonic Tester
2021-22			
2022-23			
2023-24			
2024-25 (till current month)			

Above details regarding work experience should be duly certified by the competent /authorized officials of the concerned/respective Railway network.

*Performance of Phased Array Ultrasonic Tester can be attached as separate documents while submitting the EOI proposal. The firm may furnish other documents such as lab reports, field reports etc detailing features /capabilities of their systems.

3.2 Technical details to be provided by the firm: Technical details, as per FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) given in **Annexure-C**, shall be submitted by the firm along with their proposals. Incomplete proposals shall be summarily rejected.

The details submitted by the firm shall be scrutinized by RDSO. The deficiency, as observed in the proposal during technical scrutiny or additional information needed as considered necessary, will be advised to the firm. The additional information should be made available by the firm within 04 weeks of intimation. Letters will be issued to the firms on the firm's e-mail as advised by them in their submitted proposal.

3.3 Submission by firms: The firm shall ensure the submission in the format given in **Annexure-B**.

The submission by the firms shall be made to Director/M&C-II, RDSO, M&C Directorate, Manak Nagar, Lucknow (INDIA) - 226011 in the enclosed Format for "Letter of Response at **Annexure B**". In the proposal submitted, the firms should mention RDSO's Notice No. RDSO-MCONDT(TEST)/3/2024, dated: 09.01.2025.

The firms must furnish the application form & details in duplicate as required in the enclosed Format for "Letter of Response" at **Annexure-B** and details stipulated in **Annexure-C**. All pages of the documents should be signed with the firm's stamp.

The firm shall legally indemnify the Ministry of Railways against any possible claims/legal/other disputes at present or which may arise in future from any other party in connection with the intellectual property rights of the design or any other documents submitted by the firm or any other patent rights.

RDSO reserves all the rights of this exercise. In case of any doubt/dispute, the decision of RDSO shall be final.

3.4 SELECTION CRITERIA:

The firms meeting the eligibility criteria will be shortlisted by RDSO for undertaking comments and suggestion for Development of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service based on the following criteria:

SN	Item
1	FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) described in as given in Annexure-C .
2	FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) for STR Annexure-C .
3	Experience and expertise in the field of manufacturing of Phased Array Ultrasonic testing equipment.
4	Performance of the Phased Array Ultrasonic tester for the previous three years and current ongoing year.

SUNIT
A
(Smt. Sunita)
Director/M&C-II,
For Director General (M&C)
RDSO, Lucknow

Digitally signed
by SUNITA
Date: 2025.01.09
11:32:20 +05'30'

FORMAT FOR LETTER OF RESPONSE

Respondents Ref No.:**Date:**

Director/M&C-II
M&C Lab
Building: M&C Lab
Research Designs & Standards Organization (RDSO)
Ministry of Railways, Manak Nagar
Lucknow (INDIA), Pin - 226011

Dear Sir,

Subject: RESPONSE TO EOI FOR PARTICIPATION —————

1. We, the undersigned, offer the following information in response to the 'Expression of Interest' sought by you vide your Notification No. RDSO-MC0NDT(TEST)/3/2024, dated: 09.01.2025.
2. We are duly authorized to represent and act on behalf of _____ (hereinafter the "respondent").
3. We have examined and have no reservations to the EOI Document including Addenda No(s)_____.
4. We are attaching with this letter, the copies of original documents defining: -
 - a. The Respondent's legal status;
 - b. Its principal place of business;
 - c. Its place of incorporation (if respondents are corporations); or its place of registration (if respondents are cooperative institutions, partnerships or individually owned firms);
 - d. Self-certified financial statements of the last three years, clearly indicating the financial turnover and net worth.
 - e. Copies of any market research, business studies, feasibility reports and the like sponsored by the respondent, relevant to the project under consideration
5. We shall assist the Ministry of Railways (MoR) and/or its authorized representatives to obtain further clarification from us, if needed.

RDSO and/or its authorized representatives may contact the following nodal persons for further information on any aspects of the Response:

S.No.	Contact Name	Address	Mobile/ Telephone	E-Mail

6. This application is made in the full understanding that:

- a. The EOI is for Development of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service.
- b. RDSO reserves the right to consider or not to consider any or all applications, cancel the EOI without any obligation to inform the respondent about the grounds of the same.
- c. We confirm that we are interested in participating in development of the project.

7. We certify that our turnover and net worth in the last three years is as under:

Financial Year	Turn over	Net worth

8. In response to the EOI, we hereby submit the following details annexed to this application -

- 8.1 Details of various items being manufactured/consultancy undertaken.
- 8.2 Details of customer(s) and supplies made in the field of item under EOI or similar item.
- 8.3 Details of manpower with their qualification, experience & expertise for the Phased Array Ultrasonic tester.
- 8.4 Details of performance, as detailed in **Annexure-A**.
- 8.5 Complete details of the Phased Array Ultrasonic testers as per **Annexure-C** of this EOI.
- 8.6 Details of Intellectual Property Rights (IPR) held, patent filed/held and MoU/agreement signed. For all issues, relevant Indian Laws will be applicable.
- 8.7 Details of ISO/equivalent certification, if any.
- 8.8 Documents in proof of Eligibility criteria. The work experiences are duly certified by the competent /authorized officials of the concerned Railway network.
- 8.9 Undertaking as per **Annexure-D**

9. The undersigned declare that the statements made, and the information provided in the duly completed application, are complete, true, and correct in every detail. We also understand that in the event of any information furnished by us being found later on to be incorrect or any material information having been suppressed, RDSO may delete our name from the list of qualified Respondents. We further understand that RDSO will give first preference to the applicants considered relevant for the purpose

Yours sincerely,
(Signature)

NAME:

In the Capacity of duly authorized to sign the
response for and on behalf of

Date:

FUNCTIONAL REQUIREMENT SPECIFICATION (FRS)

NAME OF WORK: Development of Specification and Schedule of Technical Requirement (STR) for Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service.

FUNCTIONAL REQUIREMENT FOR DEVELOPMENT OF SPECIFICATION:

- (i) Detection of defects such as Transverse and horizontal crack, half-moon defect, bolt hole crack etc during service in Railway Track in head, web and foot region.
- (ii) The defect representation shall be in the forms of A-Scan, B-Scan & S- Scan and its related test parameters for better analysis.
- (iii) Facility to display of decoupling between probes and probing surface.
- (iv) Scanning facility: by Normal (0°) and Angular angle of steering shall be from 36 to 76 degrees minimum.
- (v) Frequency of probes should be between 2 to 5 Hz.
- (vi) Facility to identification of signal with respective probe.
- (vii) Real time recording and storage facility for minimum 50 Track Kilometre (TKM).
- (viii) GPS Location having the accuracy of GPS receiver shall be as follows Horizontal (CEP) ≤ 3 m RMS (2σ) ≤ 5 m.
- (ix) The equipment shall be fitted with Trolley for Single Rail Scanning / Double Rail Scanning together with Odometer having accuracy 0.1% per km and also have format for display km9999m9999 (4 digits have been provided for 'm' also because of Km longer/shorter than 1000 m existing on Indian railway).
- (x) The odometer shall have facility to correct reading automatically during backward movement.
- (xi) Procedure for calibration and sensitivity setting.
- (xii) Daily test report shall provide a summary of the day's testing • Date and time of testing (should come in auto mode and non-editable) • Model and Sl. No. of equipment (should come in auto mode and non-editable) • Name of operator : • Railway & Division : • Block section : • Rail Rolling mark: • Rail Number or Weld Number : • Line- Single line/UP/DN/SL/NL3L/4L • Chainage of start and finish of USFD testing • Section of Rail tested • Horizontal movement (in case A-Scan in %) : • Amplitude (in case A-Scan in %) : • Classification of defect: • Previous classification: • Approx. size of defect (in case of B-Scan in mm) : • Location of defect (H/W/F) : • Depth of defect from Rail Table or any other reference point (in mm) : • Surface distance from probe to defect (in mm): • Other relevant details (as per request of Zonal Railways).
- (xiii) The Equipment shall withstand bumps, vibrations and Tropicalisation and Humidity Test as per National/International Standards.
- (xiv) The Equipment shall pass the radiated susceptibility and power frequency magnetic field immunity test as per National/International Standards.
- (xv) The Equipment shall pass degrees of protection provided by enclosures for electrical equipment as per national/ International Standards.
- (xvi) Testing Trolley for the Equipment:
 - (a) The trolley shall be fabricated using light weight and strong material e.g. fiber glass, aluminum alloy, carbon fiber, etc. and shall move on track freely.
 - (b) The trolley shall run on single rail or Double Rail as applicable and adjustable arrangement for mounting and fixing Equipment for convenient position and angle to facilitate easy and strain free visibility of the screen to the operator.
 - (c) The trolley shall be provided with a pair of wear resistant insulated replaceable wheel to suit 60 kg (UIC 60/60E1), 52 kg and 90R etc. Rail sections profiles with a possibility of accommodating a variation of 10 mm in the width of rail head.

- (d) The dimensions of the trolley shall be such as to accommodate all sets of probes preferably within the wheel base. The centre-to-centre distance of wheels shall be kept minimum required for proper positioning and operation of the probes and easy maneuverability of the trolley. In case of wheel probes, its assembly shall be placed within the wheel base. Strong Guide roller of sufficient length may be provided for alignment of trolley.
 - (e) The probe holders and carrier brackets should be strong enough and shall be of aluminum alloy or stainless steel or chrome plated steel. Each carrier shall have adjustable screws. Each assembly shall be capable of self-alignment so as to ensure efficient contact of probe on the rail table. Suitable and sturdy device shall be provided for raising and lowering of the probe assemblies with conveniently placed control levers near the trolley handle. The probe cables should be fixed properly.
 - (f) There shall be suitable and sturdy arrangement to keep the alignment of the probe assembly at their desired location in order to ensure scanning of rail. Probe assembly should be braced on two points in trolley to avoid probe assembly's longitudinal and lateral movement while testing.
 - (g) The water circulating system should be sturdy in nature and all water circulating pipes should be rigidly fixed. The watering system shall consist of sturdy container of minimum 07 litres capacity (in case of Single Rail tester) and minimum 07 litres capacity each Rail (in case of Double Rail Tester) and connected to controlled water supply nozzles placed adjacent to each probe assembly and provided with independent regulators and main cock. There should be provision of wire brush with supply of couplant from it, before probe unit for proper cleaning and better spreading of couplant.
 - (h) The total weight of rail tester (trolley with probes and its assemblies, digital ultrasonic flaw detector, battery and empty water container) shall not exceed 26Kg in case of Single Rail tester and 80 kg in case of Double Rail Tester.
- (xvii) Assessment parameters of equipment.
- (xviii) Any other requirement arises during development of specification.

SUNIT
A

Digitally signed
by SUNITA
Date: 2025.01.09
11:32:57 +05'30'

FUNCTIONAL REQUIREMENT SPECIFICATION (FRS) FOR SCHEDULE OF TECHNICAL REQUIREMENT (STR)

- 1. Scope:** This Schedule of Technical Requirement (STR) is to assess the manufacturing capability of the vendors for new registration/approval of Phased Array Ultrasonic System for testing of Railway Track by Single Rail Tester and Double Rail tester in service.
- 2. GENERAL INFRASTRUCTURE & MANUFACTURING DETAILS:** Manufacturer should have adequate covered accommodation for Storing raw material finished items awaiting dispatch and arranging Inspection. Manufacturer should have the system to ensure that the final product conforms to the RDSO Specification.
The "Make in India" Policy of Government of India shall be applicable.

2.1 Machinery & Plant (M&P)

2.2 Manufacturer should have the facility for repair.

2.3 Manufacturer shall attend to the complaints immediately and implement remedial action over Indian Railways

2.4 Manufacturer should have adequate facility to test the raw materials as well as the finished product.

3. TESTING FACILITIES

4. QUALITY CONTROL REQUIREMENTS

- (i) The firm should have acquired ISO 9001: 2015 certification for the product for which an approval is sought and the product should be broadly covered in the scope of the certification for manufacture and supply.
- (ii) Quality manual of the firm for ISO 9001: 2015 should clearly indicate at any stage the control over manufacturing and testing of the said product.
- (iii) A system of easy traceability of the product from raw material stage to finished product stage should be available.
- (iv) The Quality Assurance Plan (QAP) of the product prepared as per RDSO ISO guidelines should be available.
- (v) Manufacturer should have well trained staff under the Supervision of qualified staff with experience in the field.
- (vi) System should exist for documentation of the following:
 - a. Incoming raw material with Test Certificate (TC) reference of supplier as well as internal test and audit checking from outside agency & product data sheet, wherever required.
 - b. Ensure that details regarding the test results of various stages in production and routine testing are available.
 - c. Ensure that a system exists for calibration of testing & measuring equipment and record is maintained.
 - d. Calibration of test equipment: All the test equipment shall be periodically checked and calibrated.
 - e. The frequency of calibration shall be once in a year.

5. MINIMUM AREA REQUIRED FOR MANUFACTURING SET-UP

6. LEGAL REQUIREMENT: As per the RDSO's ISO Apex documents.

7. ANY OTHER REQUIREMENT

Digitally signed
by SUNITA
Date: 2025.01.09
11:33:18 +05'30'

(Smt. Sunita)
Director/M&C-II,
For Director General (M&C)
RDSO, Lucknow

(To be submitted on non-judicial stamp paper of Rs 100 and duly notarized & witnessed)

UNDERTAKING

I, son of aged about Years resident of do hereby solemnly affirm as under

1. That the deponent is the Authorised signatory of (*Name of the Sole Proprietorship Concern/ Partnership Firm/ Registered Company/ Joint Venture*).

2. That the deponent declares on behalf of (*Name of the Sole Proprietorship Concern/ Partnership Firm/ Registered Company/ Joint Venture*) that:

a) In regard to matters relating to the security and integrity of the country, no charge sheet has been filed by an agency of the Government / conviction by a Court of Law for an offense committed by the ----- (name of the entity) or by any sister concern of the -- ----- (name of the entity) would result in disqualification.

b) In regard to matters other than the security and integrity of the country, ----- (name of the entity) has not been convicted by a Court of Law or indicted / passed any adverse order by a regulatory authority against it or it's any sister concern which relates to a grave offense, or would constitute disqualification. Grave offense is defined to be of such a nature that it outrages the moral sense of the community.

DEPONENT

VERIFICATION

I declare that the contents of para 1 to 2 above are true as per my knowledge and nothing has been hidden

DEPONENT