Subject: Technology Collaboration for Track Machines for Railways

1) Introduction:

This Expression of Interest (EoI) seeks response from Original Equipment Manufacturers (OEMs), who are willing to be associated with BHEL through a license & technology collaboration agreement on long term basis, to enable BHEL to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, repair, service and retrofit state of the art Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle .

2) About Bharat Heavy Electricals Limited (BHEL):

BHEL is a leading state-owned company, wherein Government of India is holding 63.17% of its equity. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing organization in India, catering to the core infrastructure sectors of Indian economy viz. energy, transportation, heavy engineering industry, defense, renewable and non-conventional energy. The energy sector covers generation, transmission and distribution equipment for thermal, gas, hydro, nuclear and solar photo voltaic. BHEL has been in this business for more than 50 years and BHEL supplied equipment's account for more than 59% (approx. 190 GW) of the total thermal power generating capacity in India. BHEL is also listed on both major Indian stock exchanges. BHEL has 16 manufacturing units, 4 power sector regions, 8 service centres, 1 overseas office and 15 regional offices besides host of project sites spread all over India and abroad. The annual turnover of BHEL for the year 2019-20 was around USD 2.85 billion. BHEL's highly skilled and committed manpower of approx. 34000; state-of-the-art manufacturing facilities and latest technologies helped BHEL to deliver a consistent track record of performance since long. To position leading state-owned companies as Global Industrial giant and as recognition for their exemplary performance, Government of India categorized BHEL as "Maharatna Company" in 2013.

Our ongoing technology tie-ups with leading technology providers are GE Technology GmbH, Switzerland (for Once through Boilers and Coal Pulverisers); Siemens, Germany (for Steam Turbines, Generators and Condensers); MHI, Japan (for Pumps); MHPS, Japan (for Flue Gas Desulfurization Systems); Vogt Power International, USA (for HRSG); OTO Melara, Italy (for SRGM); ISRO, India (for space grade li Ion cells); BPE, USA (for SCR System), NANO, Korea (for SCR Catalyst); HLB Power Co. Ltd., Korea (for Gates and Dampers) and Kawasaki Heavy Industries Ltd., Japan (for Stainless Steel Metro Coaches & Bogies).

More details about the entire range of BHEL's products and operations are available at www.bhel.com.

3) BHEL's Credentials in Rail Business:

BHEL has been designing and manufacturing rolling stock for rail and urban transportation. BHEL has also been manufacturing Motors, Power electronics and Controllers for various transportation applications at its various factories.

In transportation sector, BHEL is into the manufacturing of complete electric and diesel electric locomotives and electrical assemblies/components including traction motors, traction transformers, power & auxiliary converters and controls, gear wheels etc. BHEL is a regular supplier of propulsion equipment of ACEMU/MEMU.

At Jhansi Plant, BHEL is manufacturing complete Electric Locomotives up to 6000 HP rating for mainline application of Indian Railways, Diesel Electric Locomotives from 350 HP to 3250 BHP rating. Till date, BHEL has supplied cumulatively more than 725 nos. of main line electric locomotives to Indian Railways and diesel electric locomotives for shunting operations to various industries.

BHEL's Jhansi plant has an installed capacity of 75 nos. locomotives per year. At Jhansi, BHEL has complete state-of-the-art facilities for manufacturing, fabrication and testing of bogies, loco shells, under frames and other mechanical components of locomotives. BHEL has recently developed India's first state-of-the-art WAG7 Electric Locomotive with regenerative capabilities. BHEL has also developed India's first Traction Motor for 9000HP Electric Locomotives.

Among electrical propulsion equipment, BHEL manufacture and supply traction motors, traction transformers, power converters (IGBT) & controls, auxiliary converters (IGBT) and vehicle control units for electric locomotives, diesel electric locomotives, EMUs, DEMUs & and metros trains of Indian Railways. BHEL's manufacturing range includes complete solution for ACEMU/MEMU, IGBT based 3-phase drive equipment up to 6000HP rating. BHEL has also been in the forefront of providing maintenance and spares/replacement support to Indian Railways for their locomotive fleet. BHEL has full-fledged service department located at major centres in the country.

BHEL is establishing state-of-the-art design, engineering and manufacturing facility, which is presently under progress at BHEL, Bhopal Unit, to cater the requirements of Stainless-Steel Coaches for EMUs for urban transportation and Trainsets for semi high-speed Rail transportation.

4) Scope of Cooperation

In order to meet upcoming market requirements in Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle. BHEL intends to enter into a Technology Collaboration Agreement (TCA) with a leading Original Equipment Manufacturer (OEM).

BHEL seeks Prospective Collaborators for entering into Technology Collaboration Agreement (TCA) which will provide support to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, repair, service and retrofit state of the art Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle.

The Prospective Collaborator should meet the PQR criterion (clause 5) for the offered Track Machines (Sl. No. 1 to 8 in the above para). Prospective Collaborator meeting PQR for any or all of the Track Machines listed in Sl. No. 1 to 8 in the above para may submit response.

The detailed terms and conditions for such a paid-up license agreement shall be mutually agreed upon. Indicative scope of technology transfer for Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle are given in **Annexure-1.**

The Prospective Collaborator's Experience in the field of offered Track Machines as specified in the EoI may please be provided as per **Annexure-2**.

5) Prequalification requirements (PQR)

The Prospective Collaborator shall meet the following conditions as on the date of submission of EoI wrt offered Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle:

5.1 The Prospective Collaborators should be an Original Equipment Manufacturer (OEM) for offered Track Machines (out of Sl no. 1 to 8 above) who regularly manufactures and has adequate technical knowledge and practical experience in Design, Manufacture, Supply, Commissioning and servicing of offered Track Machines:

a) to Indian Railways;

OR

b) in at least two countries' national / main line passenger carrying public railway transportation systems (Govt./Private/Metro) in addition to their country of incorporation and the supplied machines should have successfully completed minimum three years as on the date of EoI.

AND

5.2 The Prospective Collaborator is also required to meet certain financial parameters as per following:

a) Net worth {to be obtained from balance sheet} should be positive at end of last Financial Year.

b) Profitability (Earnings or Profit before tax but after interest) shall be positive in at least two financial years out of last five financial years.

Prospective Collaborator should submit the following documents in support of the above PQR at 5.1: -

a) Performance Statement in the field of offered Track Machines specified in this EoI as per **Annexure -3**.
b) Performance certificates issued by the end user for offered Track Machines, indicating minimum three years of satisfactory performance (preceding date of this EOI) in respect of main line public railway systems

The Prospective Collaborator who has procured the design from a third party shall not be eligible for claiming the experience here above.

6) Selection of Prospective Collaborator

Based on the information provided under this EoI, the Prospective Collaborators shall be shortlisted on the basis of the requirements specified in PQR (clause 5) for each type of Track Machine. The Prospective Collaborators who are shortlisted may be further evaluated on the basis of commercial proposals which shall be invited for the second stage of evaluation.

7) Brief Description of EoI Process:

The interested parties shall ensure that their response, along with details requested as per the Annexures of this EoI, is received by BHEL on or before **7th August 2020.** The response shall necessarily be accompanied with details on company background, technical features/ product catalogue, information on market share, copy of reference list, copy of annual audited financial reports for last 5 (five) years including copy of auditor's report etc.

The respondent shall submit their offer with all Annexures duly signed. In case any further information is needed, kindly feel free to contact us.

BHEL at its discretion may extend the due date for submission of EoI and the decision of BHEL in this respect would be final & binding on the respondents.

In case any amendment/corrigendum issued to this EoI, it shall be notified only at www.bhel.com

8) Schedule of EoI & contact details:

8.1 Schedule of EoI:

The schedule of EoI shall be as follows -

Sl. No.	Description	Date
1.	Issue of EoI document	17.07.2020
2.	Last date for submission of EoI response	07.08. 2020

8.2 Contact Details:

The respondent shall submit their response with all annexures duly signed to the following official:

Deputy General Manager (Technology Licensing)
Corporate Technology Management
Bharat Heavy Electricals Limited
BHEL House, Siri Fort
New Delhi – 110049, India
Phone: +91 11 66337213 / 7339
Mobile: +91 9818103430/7838293011
Fax: +91 11 26492974
Email: techeoi@bhel.in

9) Miscellaneous:

9.1. Right to accept or reject any or all Applications:

a) Notwithstanding anything contained in this EoI, BHEL reserves the right to accept or reject any Application and to annul the EoI Process and reject all Applications, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that BHEL rejects or annuls all the Applications, it may, at its discretion, invite all eligible OEMs/Suppliers to submit fresh Applications.

b) BHEL reserves the right to disqualify any Prospective Collaborator during or after completion of EoI process, if it is found there was a material misrepresentation by any such Prospective Collaborator or the Prospective Collaborator fails to provide, within the specified time, supplemental information sought by BHEL.

c) BHEL reserves the right to verify all statements, information and documents submitted by the Prospective Collaborator in response to the EoI. Any such verification or lack of such verification by BHEL shall not relieve the Prospective Collaborator of his obligations or liabilities hereunder nor will it affect any rights of BHEL.

9.2 Governing Laws & Jurisdiction

The EoI process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the EoI process.

Annexure-1

Indicative Scope of Technology Transfer

(a)	Licensing & transfer of state of the art technology relating to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, repair, service and retrofit state of the art offered Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle.
(b)	Assistance in planning & establishing the new manufacturing, testing and assembly facilities & processes/ suitable augmentation at BHEL's existing facilities/processes by way of expert advice in terms of identifying, sizing & selection of equipment / machinery required for manufacturing, their layout and foundation etc. Assistance for commissioning of the manufacturing facilities, design of special tools and dies, jigs & fixtures etc.
(c)	Transfer of applicable computer programs including Logics & Source Code (wherever applicable).
(d)	Assistance in Prototype manufacture, and complete testing at BHEL Works as per specifications of Indian or other Customers as well as providing assistance in according approvals of prototype from Customers.
(e)	Transfer of improvements/modifications/developments/up gradations to be carried out by the Prospective Collaborator during the period of TCA for taking care of new market requirements and obsolescence. Subsequent updates required due to component obsolescence or updates implemented by Prospective Collaborator due to safety consideration would also be provided.
(f)	During the field trials and regular operation if any modifications/updations are required to improve the performance/reliability of the system the same shall also be transferred/assisted to BHEL with complete know-how.
(g)	Training of BHEL engineers in the design, engineer, manufacture, assemble, quality control, test, supply, install, commission, repair, service and retrofit state of the art offered Track Machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle.
(h)	Deputation of Collaborator's experts to assist BHEL in absorbing the technology for licensed products.
(i)	Support through engineering services from Collaborator's design office / manufacturing facilities for licensed products.
(j)	Transfer of information to enable BHEL to source/procure those items, which Prospective Collaborator sources from other vendors (as these are not manufactured by the prospective Collaborator) for use in the offered Track machines for Railways viz. 1) Ballast Cleaning Machine 2) Ballast Regulating Machine 3) Tamping Machine 4) Dynamic Track Stabilizing Machine 5) Rail Grinding Machine 6) Track Relaying Train 7) Rail Borne Maintenance Vehicle 8) Utility Vehicle.

(SIGNATURE)

Annexure -2

Collaborator's Experience in the field of Track Machines

Sl. No.	Requirement	OEM's response YES/NO and remarks if any
(a)	Whether the Prospective Collaborator is an Original Equipment Manufacturer (OEM) of following Track Machines for Railways: 1) Ballast Cleaning Machine	
	2) Ballast Regulating Machine	
	3) Tamping Machine	
	4) Dynamic Track Stabilizing Machine	
	5) Rail Grinding Machine	
	6) Track Relaying Train	
	7) Rail Borne Maintenance Vehicle	
	8) Utility Vehicle.	
(b)	Whether documentary evidence to substantiate the PQR at clause 5 of this EoI wrt below offered Track Machines for Railways has been submitted by Prospective Collaborator:	
	1) Ballast Cleaning Machine	
	2) Ballast Regulating Machine	
	3) Tamping Machine	
	4) Dynamic Track Stabilizing Machine	
	5) Rail Grinding Machine	
	6) Track Relaying Train	
	7) Rail Borne Maintenance Vehicle	
	8) Utility Vehicle:	
(c)	Whether documentary evidence to substantiate the PQR at clause 5 of this EoI wrt below conditions has been submitted by Prospective Collaborator:	
	a) Positive Net worth at the end of last Financial Year.	
	b) Profitability (Earnings or Profit before tax but after interest) in at least two financial years out of last five financial years.	
(d)	Whether the Prospective Collaborator is financially stable and has sound status to meet the obligations under the contract of Indian Railways.	
(e)	Whether the Prospective Collaborator has submitted the tentative delivery timeline for following Track Machines for Railways:	

Sl. No.	Requirement	OEM's response YES/NO and remarks if any
	1) Ballast Cleaning Machine	
	2) Ballast Regulating Machine	
	3) Tamping Machine	
	4) Dynamic Track Stabilizing Machine	
	5) Rail Grinding Machine	
	6) Track Relaying Train	
	7) Rail Borne Maintenance Vehicle	
	8) Utility Vehicle.	
(f)	Whether the Prospective Collaborator confirmed the willingness to facilitate BHEL in establishing required manufacturing facilities & processes for following Track Machines for Railways: 1) Ballast Cleaning Machine	
	2) Ballast Regulating Machine	
	3) Tamping Machine	
	4) Dynamic Track Stabilizing Machine	
	5) Rail Grinding Machine	
	6) Track Relaying Train	
	7) Rail Borne Maintenance Vehicle	
	8) Utility Vehicle at BHEL.	
(g)	Whether the Prospective Collaborator suffered bankruptcy / insolvency in the last ten (10) years.	
(h)	Whether the Prospective Collaborator been debarred by Government of India/any State Government in India/Central or State Government undertaking as on the due date of submission of bid (Bidder to furnish a specific undertaking to this effect).	
(i)	Whether the Prospective Collaborator certified that no agent / middleman has been or will be engaged or any agency commission been or will be paid.	
(j)	Whether the Prospective Collaborator currently in the process of financial restructuring under Corporate Debt Restructuring Act.	
(k)	Whether details of company background, product catalogues have been enclosed.	
(l)	Whether information on market share has been enclosed.	
(m)	Whether copy of Prospective Collaborator's detailed reference list has been enclosed.	
(n)	Whether copy of Prospective Collaborator's annual audited financial reports for last 5 years has been enclosed.	

Sl. No.	Requirement	OEM's response YES/NO and remarks if any
(o)	Whether a summary of experience & references have been enclosed.	
(p)	Whether the Prospective Collaborator owns the IPRs for the technology being proposed for transfer under the Technology Collaboration Agreement (TCA) or have unencumbered right from the owner of the IPRs to sub-license the technology, if applicable. If yes, list of such IPRs to be enclosed.	
(q)	Whether the Prospective Collaborator confirm the Transfer of essential technology to BHEL to enable BHEL to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, repair, service and retrofit state of the art following Track Machines for Railways: 1) Ballast Cleaning Machine	
	2) Ballast Regulating Machine	
	3) Tamping Machine	
	4) Dynamic Track Stabilizing Machine	
	5) Rail Grinding Machine	
	6) Track Relaying Train	
	7) Rail Borne Maintenance Vehicle	
	8) Utility Vehicle.	

(SIGNATURE)

Annexure -3

PROFORMA FOR PERFORMANCE STATEMENT

(For a period of last 5 years)

Name of the Firm _____ Country of incorporation _____

Sr. No.	Order placed by	Order No. & Date	Description & ordered quantity	Value of order	Date of completion of delivery & Commissioning	Actual date of		Reasons for late delivery and commissioning, if any.	Has the equipment been satisfactorily commissioned and is it giving trouble free service in last five years?	Details of After Sales Service: - Location of Service centres, list of engineers employed
						Delivery of first machine in the order	Commissioning of first machine in the order			

(SIGNATURE)