



**INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR-721302, INDIA**

No. IITKGP/ID/BM/18-19/NDT/EQ/01

Date: 21.01.2019

Sub: Invitation to tender for supply of Equipment

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible Indian manufacturers/suppliers or foreign manufacturers through their direct Indian agents for the supply of **several equipment** as per the Annexure-I for the **Ranbir and Chitra Gupta School of Infrastructure Design and Management**, Indian Institute of Technology, Kharagpur, India.

Interested vendors, who have adequate credential for supply of this item, are requested to send their sealed bids under a Two-Bid System of the Equipment with their Detailed Technical Specifications given at Annexure-I, General Terms & Conditions given at Annexure-II, Annexure-III and Annexure-IV. In addition, the vendor must submit a signed “declaration” form as given in Annexure-V.

Earnest money of **Rs. 50,000/-** is to be deposited in the form of Account payee Demand Draft/Bank Guarantee Certificate in favour of The Registrar, IIT Kharagpur, payable at Kharagpur. Any bid that is not accompanied with an EMD shall be summarily rejected. Earnest money deposited will be forfeited if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. No interest will be paid on the earnest money of the unsuccessful bidders.

The tender to be sent in a sealed packet, containing two separate sealed envelopes (one each for **Technical Bid and Price Bid**) along with Earnest Money Deposit duly superscripted **IITKGP/ID/BM/18-19/NDT/EQ/01, Dated 21.01.2019** to **The Head, Ranbir and Chitra Gupta School of Infrastructure Design and Management, Indian Institute of Technology Kharagpur – 721 302, West Bengal, India.**

Tender should reach the addressee not later than the “Last date and Time” mentioned in the table below:

Tender Notice No.	IITKGP/ID/BM/18-19/NDT/EQ/01 dt. 21.01.2019
Price of Tender Document	Nil
Last Date and Time for Submitting the tender document	15.02.2019 at 12:00 Hrs (Indian time)
Time & date of Opening of Technical Bids	15.02.2019 at 12:30 Hrs (Indian time)
Place of Opening the tender	Ranbir and Chitra Gupta School of Infrastructure Design and Management, Indian Institute of Technology Kharagpur – 721 302, West Bengal, India
Address for Communication	As stated above
Contact Telephone no	+91- 3222 - 282234
Email	bhargab@infra.iitkgp.ac.in

The technical bid will be evaluated first and price bids will be opened only in respect of those OEMs/Vendors, who are found technically qualified after evaluation of Technical bids.

**Head of the School
Ranbir and Chitra Gupta School of Infrastructure Design and Management
IIT Kharagpur**

Copyto:

1. PIC, IIC- with a request to upload the tender document in the institute website, CPP Portal
2. Notice Board

Detailed Technical Specifications for Various Equipment

Various equipment to be supplied are summarized below.

Sl. No.	Item and Specification	Quantity
1	Rebound Hammer	1
2	Ultrasonic Pulse Velocity (UPV) test instrument with Pulse Echo Transducer	1
3	Profometer Rebar Locator & Cover meter	1
4	Profoscope Plus Rebar Locator & Cover meter	1
5	Resistivity Meter	1
6	Air Permeability Tester	1
7	Moisture Meter	1
8	Portable Ground Penetrating Radar (GPR)	1
9	Dowel-SCAN	1
10	Light Weight Deflectometer (LWD)	1
11	Roughometer	1
12	Air and Water Permeability Apparatus	1
13	Impact Echo Test Set-up	1
14	Portable Core Cutter	1
15	Acoustic Emission Test set-up	1
16	Infrared camera and Halogen Lamp	1

The bidder should submit DESCRIPTIVE CATALOGUE/ BROCHURE of various Items. All items should be from REPUTED MANUFACTURERS. The technical and financial bid must include the NAME OF THE MANUFACTURER and MODEL NUMBER for each item to be supplied. A company/firm may quote for any number of items among the 16 items included in the list.

The detailed features and specifications for each item are mentioned below:

Sl. No.	Product Features and Specifications
1.	<p>Rebound Hammer</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Comprehensive app for measuring, reporting and analysis • Powered by flight-safe AAA batteries • Dual displays: analog and backlit digital • Create custom curves or databases for desired mixes • Automatically detects and corrects for impact angle <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Impact Energy: 2.2 Nm (approx.) • Range: 10 to 70 N/mm² (1'450 to 10'152 psi) • Memory: 2,000 measurement series or higher
2.	<p>Ultrasonic Pulse Velocity (UPV) test instrument with Pulse Echo Transducer</p> <p><u>Features of UPV:</u></p> <ul style="list-style-type: none"> • Pulse Velocity determination, Quality Assessment & Uniformity, Curing Status evaluation, etc. • Various measurement modes including Line Scan, Area Scan, Data Logging, compressive strength correlations and E-modulus measurement

	<ul style="list-style-type: none"> • Automatic surface velocity calculation according to standards <p><u>Features of Pulse Echo:</u></p> <ul style="list-style-type: none"> • Pulse Velocity determination, Area Scan, A-Scan, B-Scan, Distance • Thickness measurement from single side • Location of delaminations, voids, honeycombs & hollow pipes • Location of pipes and tendon ducts beyond the rebar layers • Assessment of Fiber-reinforced Concrete <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 7" color touchscreen unit (800 x 480 pixels) (Approx.)with dual core processor • Bandwidth: 20 to 500 kHz • Measuring Resolution: 0.1 us • Pulse Voltage of UPV / PE: 100 to 450 Vpp / ± 50 to ± 200 V • Receiver Gain: 1 to 10'000x (0 to 80 dB) • Nominal Transducer Frequency: 24 – 500 kHz • Internal 8 GB flash memory or higher • Up to 15 m depending on concrete quality with UPV • Up to 1 m depending on concrete quality with Pulse Echo • Can connect various transducers with Frequencies of 50 kHz (approx.), 150 kHz (approx.), 250 kHz (approx.), 50 kHz Exponential (approx.), 500 kHz (approx.) and 250 kHz Shear Wave (approx.)
<p>3</p>	<p>Profometer Rebar Locator & Cover meter</p> <p><u>Features of Rebar Locator:</u></p> <ul style="list-style-type: none"> • Highest cover measurement accuracy ever through Artificial Intelligence (AI) feature • Complete, 2D and 3D imaging of rebar layout, Full 2D rebar visualization with detailed cover, rebar size and spacing data for fast reporting • For on-site testing of reinforced structures, Locating rebars when drilling, coring and for preliminary non-destructive investigations • Also for conformity check of new buildings and investigations on unknown structures. <p><u>Features of Corrosion Analyzer:</u></p> <ul style="list-style-type: none"> • For assessing of service life of actual reinforced concrete elements • For on-site mapping of the corrosion potential • Flexible features to enable the mapping of any irregular geometry • Improved digital filtering to remove the effect of external noise (civil and industrial power sources) <p><u>Specifications of Rebar Locator:</u></p> <ul style="list-style-type: none"> • 7" color touchscreen unit (800 x 480 pixels) (minimum) with dual core processor • Cover Measuring Range / Accuracy: Up to 185 mm / ± 1 to 4 mm depending on cover • Path Measuring Accuracy on smooth Surfaces: 0.5 to 1.0 % of measured length • Diameter Measuring Range: 60 mm (approx.) • Diameter Measuring Accuracy: ± 1 rebar size • Internal 8 GB flash memory (minimum) <p><u>Specifications of Corrosion Analyzer:</u></p> <ul style="list-style-type: none"> • Measures: Corrosion potential [mV] • Measuring range / Accuracy: -999 to +999 mV / ±1 mV • Necessary Software for data analysis
<p>4</p>	<p>Profoscope Plus Rebar Locator & Cover meter</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Design for single handed operation for location of rebars and cover determination • Locate rebars and live wires before drilling, cutting and coring • 1-Layer Neighboring Rebar Correction • Real-time visualization of the rebars beneath the instrument • Identify the mid-point between rebars as well as the orientation of rebars <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Cover Measuring range: Up to 185 mm (Approx.)

	<ul style="list-style-type: none"> • Memory: 49'500 measurements (Approx.) • Pixel graphic LCD • Cover Measuring Range / Accuracy: Up to 185 mm / ± 1 to 4 mm depending on cover • Diameter Measuring Range: 60 mm (approx.) • Diameter Measuring Accuracy: ± 1 rebar size • Necessary Software to download, edit and present the data
5	<p>Resistivity Meter</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Corrosion rate estimation • Concrete resistance to aggressive agents • Concrete homogeneity and Curing conditions • Checking fiber distribution in a steel fiber reinforced concrete • Current flow indication and poor contact indication <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Measures: Electrical Resistivity from ± 0.2 to ± 2 kΩcm (depending on resistivity range) • Measure range: 1 to approx. 1000 kΩcm (depending on probe spacing) • Probe with spacing of 50 mm or 35 mm (approx.) • Memory: 500 measured values • Pixel graphic LCD • Software to view and manipulate the data on PC and to allow variable contact spacing
6	<p>Air Permeability Tester</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Rapid assessment of air permeability • Concrete resistance to aggressive agents • Effectiveness of coatings • Assessment of fire damaged structures <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Measures: Permeability coefficient kT [10-16m²] • LCD 128 x 128 graphic (Approx.) • Memory: 200 measured values (Approx.) • Connectivity: RS 232 or optional adapter to USB
7	<p>Moisture Meter</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Two independent sensor channels to measure ambient & concrete characteristics simultaneously. • Measure relative humidity, temperature & calculate psychrometric parameters like dew / frost point etc. for both probes and indicate difference between the values measured by the two probes • Trend indicators for each parameter • Tests on Wet-concrete too is possible with add-on sleeve • Record data over a period of time for traceable information <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Measuring range / Accuracy: 0...100 % RH & -40...+85 °C / ± 1.5 % RH / ± 0.3 K • Dimensions: \varnothing 5 mm (\varnothing 0.2") • Highly integrated sensor with only 5 mm / 0.3" diameter • Memory: 10,000 readings (Approx.) • Pixel graphic LCD with Backlight
8	<p>Portable Ground Penetrating Radar (GPR)</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Quality assessment of Concrete Structures • Conformity check of new buildings and Investigation of unknown structures • Locate rebars and live wires before drilling, cutting and coring • Spot check of rebar cover

	<ul style="list-style-type: none"> • Complete, 2D and 3D imaging of rebar layout • Thickness measurement from a single side • Investigation of pavement and bridge decks • Necessary Software <p><u>Specification:</u></p> <ul style="list-style-type: none"> • Measuring principle: Stepped Frequency Continuous Wave GPR • Frequency range: 0.2 to 4.0 GHz • Maximum peak power: -10 dB • Maximum depth range: 70 cm / 28 inch (dry concrete)
9	<p>Dowel-SCAN</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Approximately ten sensors and a laser to guide the unit along the joint with great accuracy and repeatability. • Calculation of dowel bar positions immediately after the measurement • Measurement of a joint across several lanes within 1 minute, enables evaluation of huge number of joints per day • Signal recording by simply moving the device over the concrete pavement • Measuring independently of the degree of cure of concrete • Measuring before and immediately after the cutting of the joint • Measuring even on wet pavement and fresh concrete, as soon as a person can walk on it • Can be applied in Concrete road construction (highways), Airport Runway construction, Container areas in the harbor and other reinforced concrete surfaces - such as motorway service areas, bus stops, and roundabouts. <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Side shift Translation: maximum 80 mm • Horizontal skew / Vertical tilt: maximum 40 mm • Battery: Lithium-ion battery pack 14.8 V / 6.8 Ah / 100 Wh • Convenient Analysis Software • Unit Weight: 25 kg (approx.)
10	<p>Light Weight Deflectometer (LWD)</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • For use on Natural soil and earthwork materials • To measure Compaction degree of the excavated and reused often mixed materials • To measure Bearing capacity of subsoil and foundation layers – subbase and base course • To measure the Surface bearing capacity • Necessary Software to estimate E-modulus for up to 4 layer structures <p><u>Specification:</u></p> <p><u>Dimensions:</u></p> <ul style="list-style-type: none"> • Height: 1.50 meters (approx.) • Weight: < 20 kg (standard equipment) & < 30 kg (incl. all weights) (Approx.) • Drop weight & Max drop height: 10, 15 or 20 kg & 85 cms • Guide rod Diameter: 22 mm stainless steel 316 (Approx.) <p><u>Load Characteristics</u></p> <ul style="list-style-type: none"> • Load plates: D 100, 200 or 300 mm • Load range: 1- 20 kN • Load pulse duration: 15 - 30 ms • Load pulse shape: Essentially half sine • Load pulse rise time: Approx. 8 - 15 ms <p><u>Load Cell</u></p> <ul style="list-style-type: none"> • Load cell accuracy & resolution: 1% & ± 0.1 kN (1 KPa) • Frequency range : 0-400 Hz <p><u>Deflector Sensor</u></p> <ul style="list-style-type: none"> • Sensor type: Seismic Velocity Transducer

	<ul style="list-style-type: none"> • Number of geophones: 1-3 • Geophone accuracy & resolution: Better than $\pm 2\%$ & 1 micron • Geophone range: 1-2200 microns • Frequency range: 0.2 300 Hz <p>Data Acquisition System</p> <ul style="list-style-type: none"> • Time history (real time): On all geophones and load cell • Resolution: 16 BIT on all analogue channels (load, geophones) • Sampling: 16 kHz, simultaneous sampling (load, geophones) • Power supply (including Bluetooth): 4 x AA batteries 1.5 volt rechargeable • GPS connection: Bluetooth • Operating System: MS Windows • Sampling function: 10-650 ms
11	<p>Roughometer</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Complies with ASTM E1926 • Accurate & repeatable outputs regardless of vehicle type, suspension & passenger loads • Integrated GPS for location data with on-screen display of satellite tracking status • Outputs in International Roughness Index (IRI) or NAASRA counts and BI values • Axle-mount inertial sensor (non- contact) useful to determine road profile & roughness • Can be installed into most common passenger and light commercial vehicles • Fast and simple download of data, to laptop or computer, using the USB connection • Multi-format reports available as detailed tables, graphs, GPS maps, CSV files, suitable for use in spreadsheet • Can be used for both sealed and unsealed roads • Can operate at variable speeds, optimal 40 to 60 Km/h (25 to 40 mph) depending on road condition <p><u>Specification:</u></p> <ul style="list-style-type: none"> • Roughness units measured: IRI (International Roughness Index), BI Units & NAASRA counts (Australian) • Data Sampling Interval: 50mm (2 inches) • Roughness Resolution: 0.1 IRI • Survey Speed: 40 to 60 kms per hour • Data Storage Capacity: 10000 kms or higher • Inertial Sensor: Single Sensor mounted on inside of rear wheel on driver's side • Roughometer Processing Software • Distance Measurement: Wheel mounted DMI • Distance Accuracy: 0.1% • GPS Position Accuracy: ± 3 to 15 meter accuracy • GPS update rate: 1 second • Communication: USB Cable adaptor • Power Source: 12 V DC from Vehicle Cigarette Lighter point or direct connection with Vehicle Battery
12	<p>Air and Water Permeability Apparatus</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Air permeability related to carbonation in concrete and sulphur dioxide and hydrogen sulphide penetration in building materials • Water permeability for freeze-thaw deterioration, salt scaling and chloride penetration of submerged structures • Water absorption related to the intake of water borne salts and other aggressive liquids by capillary suction in building materials <p><u>Specification:</u></p> <p>Pressure transducer:</p> <ul style="list-style-type: none"> • Capacity: 1 bar. • Overload without damage: $2 \times$ rated range. • Pressure transducer accuracy: $\pm 1\%$ span. • Operating temperature: 0-50 ° C. • Operating voltage: 5 volt DC. • Excitation voltage: 5 volt DC. • Warm up time: 30 second. <p>Range of Performance Properties:</p>

	<ul style="list-style-type: none"> • Air Permeability Index : 0 to 4 Ln/Min (approx.) • Absolute maximum rate of flow: 1 mL/min. (approx.) • Resolution in water flow : 1 micro L • General: • Reservoir capacity: 100 ml. • Battery capacity: 2.0 AH (minimum) • External supply: 15 volt
13	<p>Impact Echo Test Set-up</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • To determine the condition and thickness of concrete, masonry, wood, stone etc. structures • To detect voids, honeycombs, cracks etc. within plain, reinforced, post-tensioned concrete or other materials in terms of their depth, location and extent within the material • To predict the early age strength of concrete • The system should include Impactors, Hand-Held Transducer, Dual-Head Transducer, Data Acquisition system, Notebook Computer, analysis Software, Cables, Serial/ USB Port Cable, Battery Charger, DC Power supply, carrying case • Number/Type of Transducers: Should have three transducers including two cylindrical or two pistol grip or one of each, plus a dual-head transducer <p><u>Specification:</u></p> <ul style="list-style-type: none"> • Impactors: should have a set of 10 hardened steel spheres on spring rods • Hand-Held Transducer Units: should be cylindrical in shape and pistol grip • Dual-Head Transducer should be included • Controls – Manual or by trigger switch • Power requirement: 10 Volt Internal Battery (approx.) for cylindrical and pistol grip • Interface: Serial/USB Port Cable • Battery Charger: Input 90-264 v AC, output 12v DC. • DC Power Supply: Input 6-24 v DC, output 12v DC • BNC Cables • Data Acquisition System Channel: 2 Channel Sampling Speed: 2 MHz on each of two channels (approx.) Resolution: 14 bit Necessary Software
14	<p>Portable Core Cutter</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • Portable Carriage fixed to motor carriage lock and Integrated type Drill rig <p><u>Specification:</u></p> <ul style="list-style-type: none"> • Drilling range: 40 – 160 mm (approx.) • Maximum Drill bit length: 550 mm (approx.) • Core Bit diameter: 50 & 100 mm diameter (approx.) • Weight (drilling system) of complete system: 20 kg (approx..) • Load speed: 450 rpm (approx.) • Power: 2.5 Kw (approx.) • Nominal current: 12 A (approx.) • Nominal voltage / frequency standard: 230 V / 50 Hz (approx.) • Cooling: Air cooling • PRCD protection switch • Suitable generator
15	<p>Acoustic Emission Test set-up</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • To detect the initiation and propagation of cracks, and location and extent of cracks within concrete and cementitious materials • To detect the slip between concrete and steel reinforcement • To detect debonding and delamination of fibers in fiber reinforced concrete <p><u>Specification:</u></p> <p>AE Sensors (low frequency)</p>

	<ul style="list-style-type: none"> • Peak Resistivity, Ref V/(m/s) :85db • Operating Frequency : 5-30 kHz • Resonant Frequency :20 kHz • Directionality:+/-1.5 db • Temperature Range : -45° to 1500°C • Shock Limit: 500 g • Dimensions: 30 mm OD x 40 mm H (approx.) • Weight: 150 grams (approx.) • Case Material: Stainless Steel • Face Material: Ceramic • Connector: BNC <p>No. of AE sensors to be supplied alongwith the set-up: 4</p> <p>Pre-amplifier (Electrical Specifications)</p> <ul style="list-style-type: none"> • Gain Selectable: 20/40/60 dB + 0.5% dB • Input Impedance: 10KΩ // 15pF • Power Required: 18-28V DC • Operating Current: 30mA (With AST Installed); 28mA (Without AST Installed) • Dynamic Range: 80 dB (Utilizing an R15 Sensor); 90dB (50Ω Input) • Temperature: -40° C to +65° C <p>No. of Pre-amplifier to be supplied alongwith the set-up: 4</p> <p>Data Acquisition System</p> <ul style="list-style-type: none"> • 8 fully differential high-impedance inputs • 20 MHz bandwidth • Flexible 12 and 14-bit resolution • 256 MS deep memory (minimum) • Should reject common-mode noise • Interface for intelligent probes and clamps • Low-voltage probe for millivolts to 50 V • 1000 V CAT III probe for high-voltage applications • Up to 100 000 waveforms per second update rate • Serial bus decoding • Mask limit testing • Advanced math and filtering • Measurements with statistics • USB 3.0 connected and powered
16	<p>Infrared camera and Halogen Lamp</p> <p><u>Features:</u></p> <ul style="list-style-type: none"> • To detect and condition assessment like the internal voids, delamination, cracks, moisture ingress in concrete, masonry structures and other materials through surface temperature measurements <p><u>Specification for Infrared (IR) Camera:</u></p> <ul style="list-style-type: none"> • IR resolution: At least 320 × 240 pixels or Better • IR resolution in MSX Mode or Equivalent Mode: At least 320 × 240 pixels or Better • IR resolution in Ultra-Max Mode: At least 640 x 480 pixels or Better (It should be presentable in CSV file) • Thermal sensitivity/NETD: <30 mK @ +30°C (+86°F) or Better (Below 30 mK) • Accuracy: ±1°C (±1.8°F) or ±1% of reading for limited temperature range (+5°C to +120°C) & ±2°C (±3.6°F) or ±2% of reading beyond above range • Object temperature range: -20°C to +1200°C in Steps or Higher • Image Frequency (Full Window): At least 60 Hz or Better • Field of view (FOV) with 25° Lens: At least 25° × 19° or Better • Spatial resolution (IFOV) with 25° Lens: At least 1.39 mrad or Better • Field of view (FOV) with 6° Lens: At least 6° × 4.5° or Better • Spatial resolution (IFOV) with 6° Lens: At least 0.33 mrad or Better • Minimum focusing distance: 0.4 m • Focus: Automatic (one shot) or manual

- Digital zoom: 2×, 4× and 8×
- Spectral range: 7.5 μm –13 μm
- Sensor Type: UFPA micro bolometer
- Sensor Pitch: 25μm
- Display: Touch screen, 3.5 in. LCD, 320 × 240 pixels or Better
- Battery Type: Rechargeable Li ion battery with Battery operating time - Approx. 4 hours at +25°C or Better
- Operating temperature range: -15°C to +50°C
- Storage temperature range: At least –40°C to +60°C or Better
- Difference Temperature: Delta temperature between measurement functions or reference temperature
- Emissivity correction: Variable from 0.01 to 1.0 or selected from materials list
- Humidity (operating & storage): 30/24 h 95% relative humidity at 25°C to 40°C
- Magnetic field: Test level 5 for continuous field
- Shock: 25g
- Vibration: 2g
- Encapsulation: IP 54
- Image storage: Standard JPEG, including digital photo and measurement data, on memory card
- Image storage mode: Simultaneous storage of thermal and digital photo in same JPEG file & Optional to store digital photo as a separate JPEG file or other Format
- Report generation: Instant Report (*.pdf file) in camera including IR and visual images & Separate PC software with extensive report generation
- Other features: Radiometric (.seq) IR video streaming - Full dynamic to PC using USB or LAN
- Non-radiometric IR video streaming in Laptop- MPEG-4 using Wi-Fi & Uncompressed colored video using USB
- Camera Should have Software Compatibility for Analysing with Atlas SDK for .NET & Atlas SDK for MATLAB
- Software capable of :
 - (i) Streaming online Radiometric Thermal Video Image in PC (.seq Format) for Analysing online & off line
 - (ii) Software with MS Word Compatibility to generate report
- Built-in digital camera- 3.1 Mega pixels (2048 × 1536 pixels) or Better with LED light/Flash
- Laser Pointer
- Interfaces - USB-mini, USB-A, Bluetooth, Wi-Fi, composite video colored video or More

Specification for Halogen Lamp:

- 2 Heat Source modulated 2.5 kW @ 230V (1.7kW @ 115V) Halogen Lamps with Reflector and Filter.
- The Halogen lamps will be used for IR-NDT and should form a functional unit with the IR-NDT software and the IRX-Box for the control of the thermal excitation source. The lamps will be operated normally with 230 V AC. According to the adjustments in the IR-NDT software, the IRX-box will generate a voltage signal of 0-10 V, which will be supplied to the power electronics integrated inside of the lamp.
- Power output of the lamps can be controlled from 0% to 100%.
- An integrated ventilator to prevent the lamps from overheating during long measuring cycles.
- Power Cord
- Reflector
- Filter with brackets
- 2 bulbs (230 V or 115 V)
- 1 Control Cable from IR camera

GENERAL TERMS AND CONDITIONS

- 1) ***Last Date of Submission of Sealed Bids (both technical and price bids, separately): 15.02.2019 up to 12.00 Hrs.***

The Technical bids will be opened on 15.02.2019 at 12.30 Hrs. in the Office of Ranbir & Chitra Gupta School of Infrastructure Design and Management, I.I.T. Kharagpur, India.

- 2) ***Payment Terms & Performance Bank Guarantee (PBG): 90% payment will be made on submission of shipping documents and balance 10% payment will be made on installation, commissioning and submission of PBG for performance period if the payment is made by LC, otherwise 90% will be released after receipt of stores, successful installation and satisfactory certificate from the Head concerned and balance 10% will be made after submission of PBG for the performance period. The security deposit so retained may be refunded on submission of Bank Guarantee towards Performance Guarantee valid for 5 years throughout comprehensive warranty period plus sixty days drawn on any commercial bank.***

No advance/mobilization support, is payable against supply of stores.

In the event of failure to deliver the stores beyond the specified date, liquidated damages @ 1% per month or part thereof in respect of the value of stores will be deducted, subject to a maximum of 5%; alternately the order will be cancelled and the undelivered stores purchased from elsewhere at the risk and expense of the vendor.

- 3) ***Warranty/Guarantee & On-site skill support: Five years onsite comprehensive OEM warranty from the date of successful installation and commissioning. The firm has to guarantee supply of spares for a minimum period of 10 years. The OEMs/Authorized Distributors and Dealers must attach certificate about their after sales and service facilities with Technical Bids, escalation support for on-call service or station engineer etc.***
- 4) ***Earnest Money Deposit (EMD): An amount of Rs. 50,000/- (Rupees fifty thousand only) in the form of Demand Draft/Bank Guarantee drawn in favour of The Registrar, IIT Kharagpur, payable at Kharagpur.***

E.M.D. should be enclosed separately in an envelope and stapled with the Technical Bid document superscribing EMD. The validity of the EMD should be 3 (three) months from the date of issue. Any bid without EMD will summarily be rejected. No interest is payable on EMD. EMD will be refunded to the unsuccessful bidder after finalization of the tender process. No interest is payable on Security Deposit. Security Deposit shall be forfeited if the selected vendor after award of contract, fails to execute the same.

- 5) ***Delivery of Stores: The store items are to be supplied within 30 days from the date of receipt of the Purchase Order or from opening of LC whichever is later.***
- 6) ***Tender Fee: NIL***

Note: Exemption of Earnest Money Deposit (EMD) will be considered as per Government of India rule.

7) Price :

PRICE may be quoted either in INR or in foreign currency.

Where tenderer intends to quote in Indian Rupees (INR), the price should be quoted “FOR IIT Kharagpur “ basis. The price should be all inclusive including GST.

IIT Kharagpur is registered DSIR, Govt. of India. GST rate for scientific goods is 5% as per the Notification No. 47/2017-Integrated Tax (Rate) dated 14th November, 2017. Necessary certificate in this regard will be issued as per requirement and on request of the successful bidder.

Where tenderer intends to quote in foreign currency FCA/FOB source port price by Air/Sea to be quoted. In case of comparison between FOR IIT Kharagpur (quoted in INR) and FOB/FCA price (quoted in foreign currency) 20% will be added on FOB/FCA price after conversion to INR.

IIT Kharagpur is registered DSIR, Govt. of India and eligible for exemption for payment of Customs Duties in Terms of Government of India Notification No.51/96-Customs dated 23.07.96. Necessary certificate in this regard will be issued as per requirement and on request of the successful bidder.

(i) Agency Commission, if any will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances.

(ii) The unit prices should be for the same unit as indicated in the Schedule to tender enquiry and not for any other unit.

(iii) Prices quoted should be for supply, installation and commissioning at I.I.T. Kharagpur.

(iv) Discount, if any, should be indicated separately/prominently.

(v) Offers should normally be on fixed and firm price basis. Any clause making price variation will not be acceptable.

8) Bid: *Technical Bid and Price Bid should be submitted in two separate sealed envelopes quoting IITKGP/ID/BM/18-19/NDT/EQ/01, Dated 21.01.2019 on the top of the envelope. Tender Fee and EMD should be enclosed with the Technical Bid documents, in separate sealed envelopes, stapled with the packet containing Technical Bid documents. The OEMs may either bid directly or Country/Regional/State Distributors /Dealers/Vendors, to quote authorized with valid authorization certificate, capability to sale and service of the products.*

9) Acceptance of Tender: *The Authority of IIT Kharagpur does not bind itself to accept the lowest priced bid and reserves the right to reject any or the entire tender bids received without assigning any reason thereof.*

10) *The addendum/corrigendum if any shall be published on Institute’s Website i.e. www.iitkgp.ac.in and on CPP Portal.*

11) *The Bidders are requested to submit the bids after issue of clarifications only considering the changes made if any. Bidders are totally responsible for incorporating/complying the changes/amendments issued if any, in their bid.*

12) Extra Features: *If the bidder provides any other extra features on the Hardware or Software which are not mentioned in the tender product specifications, then that shall be highlighted in clear terms, with documentary evidence/literature.*

- 13) **Compliance List:** *The proposal should be properly indexed and a compliance list against the technical specifications should be provided.*
- 14) **Service:** *Response to ensure quality of services, the deputed Engineer from the OEM/Vendor shall have a minimum of 2 years of experience in the relevant field and must be in the payroll of the OEM/Vendor.*
- 15) **Installation and Commissioning:** *Free of cost at IIT, Kharagpur. The OEM must ensure timely installation of the equipment with necessary support to the indenters, as per details and lists to be made available by the Stores & Purchase Section or the indenting Departments/Centres/Schools.*
- 16) **Validity of licenses:** *Software's licensing price or policy (if any) shall be clearly mentioned.*
- a) *All licenses should be perpetual*
 - b) *All the accessories shall be from the same OEM*
- 15) *The OEM should be an ISO-9000 and ISO-14001 certified company with due credits to energy conservation and green earth compliance.*
- 16) **Relevant documents of the OEM shall be enclosed, along with the Technical Bid. Any explanation on this account shall be supported with documentary evidence from the principals.**
- 17) **Conditional Offer** *will not be accepted.*
- 18) **Period of Validity:** *Bids shall remain valid for acceptance for a period of 90 days from the date of opening of the price bid.*
- 19) *The benefit of any downward price revision (revision on account of budget/financial policy, tax revision, EPZ etc.) is to be given to IIT Kharagpur by the selected OEM/vendor.*
- 20) **Past Performance of the Vendors will be judged at the time of Technical Evaluation.**
- 21) **The Institute does not bind** *itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee of the Institute.*
- 22) **Bidders should** *enclose the following documents:*
- i. *Certificate of Registration / Trade License*
 - ii. *Attested copy of PAN card and GST registration papers*
 - iii. *Name and address of past satisfactory supplies to whom such items/stores have been supplied should be mentioned in the technical bid.*
 - iv. *A copy of agency agreement entered into with the principal, if applicable, indicating the nature of after sales services of Indian agent, precise relationship and mutual interest in the business.*
 - v. *Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration should be provided.*
 - vi. **Proforma Price Bid (without mentioning the price rate) may be attached with technical bids**
 - vii. **Port of Shipment and Country of origin:** *Should be mentioned in the quotation.*

viii. **Purchase order to be placed on: Should be mentioned in the quotation with full address.**

23) **All tenders are to be handed over in a sealed box in the Office of Ranbir & Chitra Gupta School of Infrastructure Design and Management, IIT Kharagpur-721302. The bids (technical and price bids) once submitted shall be the property of the Institute and shall not be returned to the vendor in future. For speed post, the Postal Address is “The Head, Ranbir & Chitra Gupta School of Infrastructure Design and Management, IIT Kharagpur-721302”**

24) **Opening of Price Bids: The Price Bid(s) of only those vendor(s) who are found technically qualified will be opened. The date for opening of price bids is 15.02.2019 at 4.00 P.M.**

25) **Tenderer or his/her authorized representative (with proper authorization letter for attending opening of technical bids and also for opening of price bids) may choose to be present at the time of opening of Technical Bids/Price Bids.**

26) **IMPORTANT**

I. **Director may accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid. The Institute at its discretion may change the quantity/upgrade the criteria/drop any item or part thereof at any time before placing the Purchase Order.**

II. **A bid submitted with false information will not only be rejected but also the OEM/ vendor will be debarred from participation in future tendering process.**

III. **In case of any dispute, the decision of the Director of this Institute shall be final and binding on the bidders.**

IV. **For any query pertaining to this bid document, correspondence is to be addressed to the End user:**

The Head

**Ranbir & Chitra Gupta School of Infrastructure Design and Management,
Indian Institute of Technology, Kharagpur- 721302, West Bengal, India,
[Ph:+91-3222- 282234] , Email:bhargab@infra.iitkgp.ac.in**

V. **In case the due date for opening tender happens to be a holiday, the same will be opened on the next working day. The timings will however remain unchanged. Please Note that the Institute remains closed on Saturday & Sunday.**

vi. **The addendum/corrigendum if any shall be published on Institute’s website i.e. www.iitkgp.ac.in and on CPP Portal. The Bidders are requested to submit the bids after issue of clarifications duly considering the changes made if any. Bidders are totally responsible for incorporating/complying the changes/ amendments issued if any in their bid.**

INSTRUCTIONS & SPECIAL CONDITIONS

(To be returned by Tenderer along with the Tender duly signed)

1. **GENERAL:** *Tenderer(s), who are Indian Agents of OEMs should furnish a clear declaration as follows: We declare that I am/we are Accredited Agents of the suppliers aboard. DGS&D enlistment certificate needs to be attached (applicable only for the Indian Agents)*

2. **DEVIATION FROM SPECIFICATIONS:** *It is in the interest of the tenderer to study the specifications in the tender schedule thoroughly before quoting so that, if the tenderer makes any deviations, the same are prominently brought out in the body of the tender. If you need to add any optional items to your system in order to meet our specifications, you are requested to quote for the total including the option required to suit our requirements. Otherwise, your tender will not be considered at all.*

3. **TENDERERS SHALL SUBMIT ALONG WITH THEIR TENDER:**
 - (i) *Complete address and tele links for contact persons of principals and Indian agent offices dealing with this purchase.*
 - (ii) *Name and full address of the OEM's Banker and their swift code.*
 - (iii) *Port of shipment and Country of origin is to be provided for each item.*
 - (iv) *Purchase order to be placed on: Should be mentioned in the quotation with full address*

4. **PERFORMANCE BANK GUARANTEE:** *On behalf of the Principal, Indian Agent must be able to provide Performance Bank Guarantee of the amount equivalent to the 10% of the cost of equipment from any Nationalized Bank. The Performance Bank Guarantee is required for the entire period of Warranty. Performance Bank Guarantee must remain valid for a period sixty days beyond the expiry of the Warranty Period. Bid security will be refunded back on submission of performance Security.*

5. **GUARANTEE:** *The tenderer has to declare that the goods sold to the buyer under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications.*

6. **JURISDICTION:** *All questions, disputes, or differences arising under, out of or in connection with the contract, if concluded, shall be subject to the exclusive jurisdiction at the place from which the acceptance of Tender is issued i.e. Jurisdiction of KOLKATA HIGH COURT. Acceptance to this effect is also necessary at the time of opening of Technical Bid.*

7. **ACKNOWLEDGMENT:** *It is hereby acknowledged that we have gone through all the points listed under "Instructions & Special Conditions" outlined above, and those in the accompanying note on "Important Conditions", and we agree to abide by them under the penalty of permanent disqualification for Tender participation and for related penal actions for non-abidance of the conditions.*

8. **Interested vendors must be able to supply adequate spares and consumable during **three years of comprehensive warranty**. Vendor should also ensure trouble free service and performance for another **seven years beyond three years Comprehensive Warranty Period** with adequate spares and accessories.**

**SIGNATURE OF TENDERER ALONG WITH SEAL
OF THE COMPANY WITH DATE**

TECHNICAL BID DOCUMENT

FORMAT TO BE FILLED BY THE MANUFACTURERS/ INDIAN AGENTS (ON BEHALF OF THEIR FOREIGN PRINCIPALS) OR THEIR AUTHORIZED COUNTRY DISTRIBUTORS/ REPRESENTING DEALERS/ REGIONAL AGENCIES, SUBMITTING TENDER FOR SUPPLY OF VARIOUS Equipment FOR IIT KHARAGPUR (Ranbir & Chitra Gupta School of Infrastructure Design and Management)

- i. Certificate of Registration / Trade License
- ii. Attested copy of PAN card and GST registration papers
- iii. Name and address of past satisfactory supplies to whom such items/stores have been supplied should be mentioned in the technical bid.
- iv. A copy of agency agreement entered into with the principal, if applicable, indicating the nature of after sales services of Indian agent, precise relationship and mutual interest in the business.
- v. Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration should be provided.
- vi. **Proforma Price Bid (without mentioning the price rate) may be attached with technical bids**
- vii. **Port of Shipment and Country of origin: Should be mentioned in the quotation.**
- viii. **Purchase order to be placed on: Should be mentioned in the quotation with full address**

Certified that all above information are correct to the best of my/our information, knowledge and belief.

-----Dated
Signature & Seal of the Authorized person of OEM/Vendor

NOTE: This is to be submitted in a separate sealed envelope super scribing “TECHNICAL BID”, Notice inviting Tender No. IITKGP/ID/BM/18-19/NDT/EQ/01, Dated: 21.01.2019 and name of the bidder. All technical documents like literature, catalogues etc., are to be put in the same envelope. Price bid of that company/firm only will be opened which do technically qualify, for further consideration. Attach all relevant documents in the same serial order as above, properly indexed, duly signed and sealed.

DECLARATION

1. I, -----*Son /Daughter of Shri* -----
----- *Proprietor/Partner/CEO/MD/Director/*
Authorized

Signatory of M/s. ----- am competent to sign
this
declaration and execute this tender document.

2. I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.

3. The information/ documents furnished along with the above application are true and authentic to the best of my knowledge and belief.

4. I/we am/are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.

5. Each page of the tender document and papers submitted by my Company is authenticated, sealed and signed, and I take full responsibility for the entire documents submitted.

----- *Signature of the Authorized*

Person Date: ----- Full Name: -----

----- *Place: ----- Company Seal: -----*
