TENDER INVITATION FOR SUPPLY, COMMISSIONING, AND TRAINING OF ROBOTIC WELDING FACILITY (SOLUTION ON TURNKEY BASIS)

Sealed tender offers are invited in **two separate sealed covers** (Technical and Commercial offers) from eligible manufacturers/suppliers or their direct Indian agents for the supply of the following equipment:

Robotic welding facility (turnkey solution)

Please send offers, ALONG WITH DESCRIPTIVE CATALOGUE/ BROCHURE. The validity of the bid should be at least five months (150 days) or more from the date of the opening of this tender. Please ensure that your quotation reaches not later than **15/10/2018 (Monday)** by **17:00 Hrs. (IST)** at the following address:

Professor-in-Charge,
DHI Centre of Excellence on Advanced Manufacturing Technology,
(Inside Steel Technology Centre),
Indian Institute of Technology Kharagpur,
721 302, West Bengal, India

Earnest money of **Rs. 4,00,000/-** is to be deposited in the form of Account Payee Demand Draft in favour of IIT Kharagpur, payable at Kharagpur, India. **Any bid which is not accompanied with an EMD, and tender fee 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.

Tender Reference	**IIT/SRIC/CoE_AMT/DHI/2018/EQ28, dated 24/09/2018**
Tender Fee	**Rs. 10000/- (***Account payee Demand Draft in favour of IIT Kharagpur, payable at Kharagpur, India*); Non-refundable
Last Date and Time for submitting the tender document	**15.10.2018 (Monday) at 17:00 Hrs. (IST)**
Time and Date of Opening of Technical Bids	**15.10.2018 (Monday) at 17:30 Hrs. (IST)**
Place of Opening Tender	**SRIC Meeting Room,** **Indian Institute of Technology Kharagpur, 721 302,** **West Bengal, India**
Address of Communication	**Office of Professor-in-Charge,** **DHI Centre of Excellence on Advanced Manufacturing Technology, (Inside Steel Technology Centre),** **Indian Institute of Technology Kharagpur,** **721 302, West Bengal, India**
Contact Telephone Numbers	**+91- 3222 - 281576**
E-mail	**coeamt@iitkgp.ac.in**

Basic information about the robotic welding facility

The welding unit will include robot assisted facilities for different welding methods such as metal inert gas/metal argon gas welding (MIG/MAG), tungsten inert gas welding (TIG), Spot welding, and Laser cutting and welding. The robot assisted MIG/MAG and TIG welding unit can either be assisted by two individual robots or a single robot. In case, the MIG/MAG and TIG welding unit is being handled by one robot, it must accompany an automatic tool changer unit for exchanging the welding torch automatically by that robot. Spot and laser welding units will be accompanied by separate robots.

MIG/MAG, TIG, and Laser welding (with cutting) robots will be fixed on the floor. The Spot welding robot will be placed over a linear track for more flexibility. The welding facility will also include another robot for holding the jobs. This Job-holding robot will be placed on a linear track for more flexibility. The facility will also include a 3-axis Job-positioner to handle jobs for different robots, i.e. MIG/MAG, TIG, Spot, and Laser. The facility needs to have seamless coordination among all the robots i.e., MIG/MAG, TIG, Spot, Laser, & Job-holding, and also with the Job positioner.

The entire welding solution should be a state-of-the-art facility fulfilling the needs for achieving the goals of Industry 4.0 (Industrial IoT). Each welding unit, i.e. MIG/MAG, TIG, Spot, and Laser, should have in-built sensors to monitor the corresponding welding parameters. In addition to this, the machine should also be capable of displaying and storing the data collected from those in-built sensors in real time during the operation. They must also include Ethernet connection so as to send the acquired data to cloud in real time for further processing on the user end. They must also possess capabilities to control the welding parameters in case of fault occurrence in real time. Apart from this, they must also have provision to collect, display, and store the data collected from various external sensors which may be connected by the user for further diagnostics and control.

DETAILED REQUIRED TECHNICAL SPECIFICATIONS

Please refer to the following annexure for the detailed technical specifications of each robot assisted welding facility:

Annexure-1	***Robotic MIG/MAG and TIG welding***
Annexure-2	***Robotic Spot welding***
Annexure-3	***Robotic Laser cutting and welding (optional)***
Annexure-4	***Job-holding robot***
Annexure-5	***3-axis Job-positioner***
Annexure-6	***Supplementary information***

Note: Bidder must mention the individual cost of each of the following solutions in their price bid.

Annexure-1

Robotic MIG/MAG and TIG welding

A. Process requirement	
Mains supply voltage	3x400 ± 10% V
Number of phases	3
Supply frequency	50/60 Hz
Input power	Within 27 kVA
No load power	Maximum 50 W
Welding process suitability	MIG/MAG and TIG
Open circuit voltage	< 90 V

Output Range for MIG/MAG and TIG	16-500 A	
Permitted load at 100% duty cycle	MIG/MAG	400/34 A/V
	TIG DC	400/30 A/V
Power factor	> 90 %	
Efficiency at maximum current	85 % or better	
Operating temperature	-10 to 40°C	
Degree of protection	IP23	
Insulation class	H	
Application class	S	
Standards of conformity	EN 60974 -1, -2 and -10	
Cooling capacity	1.5 kW or more	
Coolant volume	5 litres or more	
Flow rate of coolant	2 l/min or more	
Pressure	3 bar or more	
B. Robot wire feeder		
Supply voltage	24V DC/60V DC	
Wire feed speed	1-25 m/min	
Wire drive	4 roller drive	
Speed control	Pulse encoder	
Enclosure class	IP 2X	
Standards	IEC 60974-5, IEC 60974-10	
C. Wire dimension		
Steel	0.6-1.6 mm or more	

Stainless steel	0.6-1.6 mm or more		
Aluminum	0.6-1.6 mm or more		
Cored wire	0.6-1.6 mm or more		
D. Robotic MIG/TIG torches			
Collision resistant design			
Optimized shielding			
Touch sense			
E. Automatic torch cleaner and wire cutter (optional)			
F. Must weld thin sheets (0.5 mm) and dissimilar materials			
G. Robot requirements			
Number of degrees of freedom	6		
Robot reach	1800 mm or more		
Rated payload	20 kg or more		
Positional repeatability	As per ISO 9283 standard		
Protection rating (IEC 60529)	IP65		
Protection rating in line wrist (IEC 60529)	IP65		
Number of controlled axes	6		
Range of axes movements and speeds	Rotating column	Range: ± 180° or wider Speed: Minimum 190 °/sec	
	Linking arm	Range: - 175°/55° or wider Speed: Minimum 170 °/sec	
	Arm	Range: -120°/170° or wider Speed: Minimum 180 °/sec	
	Wrist	Pitching	Range: ± 320° or wider Speed: Minimum 400 °/sec
		Yawing	Range: ± 120° or wider Speed: Minimum 400 °/sec
		Rolling	Range: ± 320° or wider Speed: Minimum 600 °/sec

<table>
<tr><td colspan="2">H. Sensing devices</td></tr>
<tr><td rowspan="3">The unit must include various sensors to sense various physical parameters from the welding process in real time.</td><td>Current sensor</td></tr>
<tr><td>Voltage sensor</td></tr>
<tr><td>Wire feeding speed sensor</td></tr>
<tr><td>Data acquisition system</td><td>The machine must have provision for acquiring the data from the sensors (both inbuilt to the machine, i.e. current, voltage, and wire feeding speed; and external sensors such as temperature, acoustics etc.) in real time.</td></tr>
<tr><td colspan="2">I. Display panel for data input, diagnostics and control</td></tr>
<tr><td colspan="2">• An interface to communicate with the machine for providing input parameters such as:
a) Robot path (with job start and end position)
b) Welding current
c) Welding voltage
d) Wire feed rate etc.</td></tr>
<tr><td colspan="2">• Display panel to view all sensors' (inbuilt and external) data in real time during the ongoing process.</td></tr>
<tr><td colspan="2">• Provision for collecting the displayed data in real time into the local computer (of an operator) for further diagnostics.</td></tr>
<tr><td colspan="2">• Automatic storage of each individual sample files in a systematic manner:

a) The file must be stored in Microsoft excel (.xlsx)/(.csv) format for easy viewing, transfer and processing in the local computer of the user.

b) The file must contain all sensors' data from the start to the end of a welding process. In addition to this, the file must also contain the external sensor's data connected by the user.

c) The file must be stored automatically with the file name as specified by the user provided on the interface.</td></tr>
<tr><td colspan="2">• The machine should have Ethernet connection for transfer of data in real time to the cloud or external PC at the user end. Both Ethernet and Wi-Fi adapter should be provided in the system.</td></tr>
<tr><td colspan="2">• There must be provision for real time control of the machine parameters in case of fault detection.</td></tr>
<tr><td colspan="2">J. Robot software</td></tr>
<tr><td colspan="2">Fully licensed software for robot path programming must be provided along with the machine.</td></tr>
</table>

K. Automatic tool changer facility ***(Applicable if and only if MIG/MAG and TIG welding job to be carried by one robot)***
• Online information of tool engagement and disengagement
• Online information about the tool in storage station

Annexure-2

Robotic Spot welding

A. Robotic Spot welding machine requirement			
Material configurations	Similar and dissimilar materials		
Materials to be welded	• Aluminum to aluminum (1mm to 1mm) • Steel to steel (1.5 mm to 1.5 mm) • Aluminum to steel (1 mm to 1 mm) *(optional)*		
B. Robotic facility requirement			
Number of degrees of freedom	6		
Number of controlled axes	6		
Robot reach	2700 mm or more		
Rated payload	240 kg or more		
Positional repeatability (As per ISO 9283 standard)	± 0.06 mm or better		
Protection rating	IP 65		
Range of axes movement and speed	Rotating column	Range: ± (180^o to 190^o) Speed: Minimum 100 ^{o}/sec	
	Linking arm	Range: -140^o to -5^o Speed: Minimum 100 ^{o}/sec	
	Arm	Range: -120^o to +140^o Speed: Minimum 100 ^{o}/sec	
	Wrist	Pitching	Range: ± 350^o or more Speed: Minimum 100 ^{o}/sec
		Yawing	Range: ± 120^o or more Speed: Minimum 120 ^{o}/sec
		Rolling	Range: ± 350^o or more Speed: Minimum 190^o/sec

<table>
<tr><td colspan="2">C. Sensing devices</td></tr>
<tr><td rowspan="2">The unit must include various sensors to sense various physical parameters from the welding process in real time.</td><td>Current sensor</td></tr>
<tr><td>Force sensor</td></tr>
<tr><td colspan="2">D. Display panel for data input, diagnostics and control</td></tr>
<tr><td colspan="2">• An interface to communicate with the machine for providing input parameters such as:</td></tr>
<tr><td colspan="2">• Display panel to view all sensors' (inbuilt sensors, i.e. current and force values, and external sensors such as temperature, acoustics etc.) data in real time during the ongoing process.</td></tr>
<tr><td colspan="2">• Provision for collecting the displayed data in real time into the local computer (of an operator) for further diagnostics.</td></tr>
<tr><td colspan="2">• Automatic storage of each individual sample files in a systematic manner:
a) The file must be stored in Microsoft excel (.xlsx)/(.csv) format for easy viewing, transfer and processing in the local computer of the user.
b) The file must contain all sensors' data from the start to the end of a welding process. In addition to this, the file must also contain the external sensor's data connected by the user.
c) The file must be stored automatically with the file name as specified by the user provided on the interface.</td></tr>
<tr><td colspan="2">• The machine should have facility for internet connection for transfer of data real time to the cloud or external PC for diagnostics at the user end. Both Ethernet and Wi-Fi adapter should be provided in the system.</td></tr>
<tr><td colspan="2">• There must be provision for real time control of the machine parameters in case of fault detection.</td></tr>
<tr><td colspan="2">E. Robot software</td></tr>
<tr><td colspan="2">Fully licensed software for robot path programming must be provided along with the machine.</td></tr>
<tr><td colspan="2">F. Linear track</td></tr>
<tr><td colspan="2">This robot will be mounted on a linear track of length 4 m.</td></tr>
</table>

Annexure-3

Robotic Laser cutting and welding (optional)

A. Laser requirements	
Laser type	Yb-fiber
Laser power	6000 W
Central wavelength range	1070 ± 10 nm
Mode of operation	Continuous wave and modulated
Modulation frequency	0-5 kHz
Maximum average power	6000 W
Power tenability	10-100 %
Power stability	± 5 %
Optimum fiber core diameter	200 mm
Beam parameter product	< 10 mm x mrad
Fiber beam delivery and length of the output fiber	A direct feeding fibre terminating in either an HLC-8 (QBH-type) connector in a length of 30 m.
Wall plug efficiency	> 40 %
Chiller unit	Suitable power rating

B. Welding head: *Suitable to couple with the 6 kW fiber laser beam deliver system specified at 'A' above. Complete with all optical components, i.e. lenses and protecting window.*

Configuration	***Collimator***	***Focus***	***Fiber receiver***
Vertical	140 mm or more	250 mm or more	HLC-8

C. Cutting head: *Suitable to couple with the 6 kW fiber laser beam deliver system specified at 'A' above. Complete with all optical components, i.e. lenses and protecting window, constant height sensor and control electronics.*

Configuration	***Collimator***	***Focus***	***Fiber receiver***	***Pierce sensor***
Vertical	100 mm	150 mm Focus lens movement +5/-15 mm	HLC-8	Yes

Replaceable cutting nozzle of 1mm, 1.5 mm and 2 mm diameter,
Quantity= 10 numbers of each diameter

D. Control/interface options			
• Control interface			
• Front panel control for emergency stop, laser mode, system reset, cycle start and stop or equivalent.			
E. System integration			
• Electrical integration of all components			
• Laser software integration with the robot controller			
• Beam delivery, safe position monitoring interlocked with laser emissions			
F. Robot requirements			
Number of degrees of freedom	6		
Number of controlled axes	6		
Rated payload	14 Kg or more		
Robot reach	2010 mm or more		
Positional repeatability (as per ISO 9283 standard)	± 0.04 mm or better		
Protection rating	IP 65		
Protection rating (in-line wrist)	IP 65		
Range of axes movements and speeds	Rotating column	Range: ± 180° to 190° Speed: Minimum 200 °/sec	
	Linking arm	Range: -180° to 65° Speed: Minimum 170 °/sec	
	Arm	Range: -130° to +160° Speed: Minimum 180 °/sec	
	Wrist	Pitching	Range: ± 350° or more Speed: Minimum 420 °/sec
		Yawing	Range: ± 120° or more Speed: Minimum 420 °/sec
		Rolling	Range: ± 350° or more Speed: Minimum 620 °/sec
G. Display panel for data input, diagnostics and control			
An industrial PC with 17 inch or more color touch screen must be attached along with the unit to provide input data, and display information in real time.			

Annexure-4

Job-holding robot

<table>
<tr><td colspan="4">A. Robot requirements</td></tr>
<tr><td>Number of degrees of freedom</td><td colspan="3">6</td></tr>
<tr><td>Robot reach</td><td colspan="3">1800 mm or more</td></tr>
<tr><td>Rated payload</td><td colspan="3">20 kg or more</td></tr>
<tr><td>Positional repeatability</td><td colspan="3">As per ISO 9283 standard</td></tr>
<tr><td>Protection rating (IEC 60529)</td><td colspan="3">IP65</td></tr>
<tr><td>Protection rating in line wrist (IEC 60529)</td><td colspan="3">IP65</td></tr>
<tr><td>Number of controlled axes</td><td colspan="3">6</td></tr>
<tr><td rowspan="6">Range of axes movements and speeds</td><td>Rotating column</td><td colspan="2">Range: ± 180^{o} or wider
Speed: Minimum 190 ^{o}/sec</td></tr>
<tr><td>Linking arm</td><td colspan="2">Range: - 175^{o}/55^{o} or wider
Speed: Minimum 170 ^{o}/sec</td></tr>
<tr><td>Arm</td><td colspan="2">Range: -120^{o}/170^{o} or wider
Speed: Minimum 180 ^{o}/sec</td></tr>
<tr><td rowspan="3">Wrist</td><td>Pitching</td><td>Range: ± 320^{o} or wider
Speed: Minimum 400 ^{o}/sec</td></tr>
<tr><td>Yawing</td><td>Range: ± 120° or wider
Speed: Minimum 400 ^{o}/sec</td></tr>
<tr><td>Rolling</td><td>Range: ± 320^{o} or wider
Speed: Minimum 600 ^{o}/sec</td></tr>
<tr><td colspan="4">B. Linear track</td></tr>
<tr><td colspan="4">This robot will be mounted on a linear track of length 4 m.</td></tr>
</table>

Annexure-5

Job-positioner

A. Basic information		
Number of degrees of freedom	3	
Rated payload	250 kg or more	
Positional repeatability (As per ISO 9283 standard)	± 0.04 mm or better	
Protection rating	IP 67	
B. Axis information		
Tool radius	500 mm to 1000 mm	
Distance between face plates	1600 mm to 3000 mm	
Motion range	Main beam	± 180^{o} or more
	Both cross members	Infinite

Annexure-6

Supplementary information

These requirements are generic for all facilities, i.e. robot assisted MIG/MAG, TIG, Spot, and Laser, Job-holding robot, and Job-positioner.

A. Software and other interface requirements
• There must be provisions for using the Job-positioner to hold jobs for different robots positioned on the shop floor. The supplier must provide necessary interface to do the same.
• The supplier must also provide necessary software and interface required to establish communication between the robots on the shop floor.
B. Post installation requirement at IIT-Kharagpur
• It is the responsibility of supplier to fully integrate, erect and commission the different welding units at IIT Kharagpur.
• Performance and accuracies are to be demonstrated as per ISO standards on samples supplied by IIT- Kharagpur and, calibration standards supplied by the supplier.
• The supplier shall bring all necessary calibration standards for proving the machine accuracies with valid traceability certificates at IIT- Kharagpur.
C. Training
Extensive training shall be provided to IIT- Kharagpur scholars by the supplier at IIT Kharagpur. The training should cover complete operation and software usage in all aspects of measurement and data analysis, part programming, calibration, preventive maintenance, and trouble shooting.
D. Warranty
• The machine shall have a comprehensive warranty (parts, labour and visit by the service engineers) for a minimum period of 3 years after commissioning for defect-free operation and specified accuracies at IIT- Kharagpur.
• Any defect observed during the warranty period shall be replaced/repaired free of cost with minimum down time. All the software updates during the warranty period shall be supplied, installed and trained to our personnel on real time basis at free of cost.

E. Documentation

The following documents (hard copy 2 sets & soft copy in CD/ Flash Drive/ HDD) to be provided to IIT- Kharagpur:

- All the data and results of testing and calibration of the entire system at supplier site as well as at IIT- Kharagpur site shall be properly documented and supplied to IIT- Kharagpur.
- Calibration certificates (traceable to national / international standard) of all the artifacts/ reference standards used for the same shall be provided to IIT- Kharagpur.
- Operations, calibration, application software manual - This document should explain all the measurement options, calibration, application of the system with sketches and detailed explanation.
- System administration & maintenance manual - This document should explain the detailed system configuration and administration with the help of sketches. System manual should explain known possible errors and solution for the same. The safety instructions need to be clearly mentioned in this document.
- User manual and service manual (for both mechanical and electronic hardware/ circuits) in English language should also be provided.

F. Annual maintenance contract (AMC) (after expiry of the warranty period of 3 years)

- The supplier may undertake Non-comprehensive AMC for a period of three years, after the expiry of comprehensive warranty of three years. The quote shall be in Indian Rupees since it is envisaged that Non-comprehensive AMC is to be carried out by the authorized service provider of the manufacturer.

- The scope shall be for two preventive maintenance visits per year.

- The scope shall also include any number of breakdown visits. In case of any major breakdowns which need the intervention of Original Equipment Manufacturer (OEM), the quote shall include per visit cost for the same.

GENERAL TERMS & CONDITIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER: -

1. TENDERS ARE INVITED COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPES CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPS SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOPE.

THE FOLLOWING DOCUMENTS ARE REQUIRED FROM THE INDIAN AGENTS OF FOREIGN FIRMS:

1.1 FOREIGN PRINCIPAL'S PROFORMA INVOICE INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT AND NATURE OF AFTER SALES SERVICE TO BE RENDERED BY THE INDIAN AGENT.

1.2 COPY OF THE AGENCY AGREEMENT WITH THE FOREIGN PRINCIPAL INDICATING THE NATURE OF AFTER SALES SERVICES, PRECISE RELATIONSHIP BETWEEN THEM AND THEIR MUTUAL INTEREST IN THE BUSINESS.

2. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL. PROVIDE COMPLIANCE STATEMENT WITH RESPECT TO THE TECHNICAL SPECIFICATIONS MENTIONED ABOVE.

3. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.

4. **PRICE BIDS FOR FOREIGN FIRMS**: PRICES ARE TO BE QUOTED ON '**EX-WORKS**' DULY
   PACKED OR ON **"FCA/FOB"** INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY, SHOWING CLEARLY THE FOLLOWING BREAK UP:-

   I) EX-WORKS PRICE
   II) PACKING & FORWARDING
   III) FREIGHT
   IV) ANY OTHER RELEVANT EXPENSES.
   V) TAXES PAYABLE BY THE INSTITUTE

   INSURANCE WILL BE PAID BY OUR INSTITUTE SEPARATELY AND SHOULD NOT FORM PART OF THE QUOTED PRICE.

   PRICE BIDS FOR INDIAN FIRMS: PRICES ARE TO BE QUOTED ON F.O.R., IIT KHARAGPUR, ON DOOR DELIVERY BASIS CLEARLY SHOWING THE BREAK UP.

5. **PERIOD OF VALIDITY**: BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 150 DAYS FROM THE DATE OF OPENING.

6. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY AND NOT IN **FE).** PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.

7. **MEASUREMENTS/WEIGHT:** NETT/GROSS OF THE CONSIGNMENT. IN CASE OF AN ORDER,
   YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS – PLYTO – SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).

8. **SCOPE OF SUPPLY**: SHOULD INCLUDE FREE INSTALLATION AND COMMISSIONING

9. **PAYMENT TERMS** FOR FOREIGN FIRMS

   The offer will be made on a single currency and only one PO will be issued for the entire scope of the supply.

   A) 90% PAYMENT THROUGH SIGHTDRAFT/FOREIGN DEMAND DRAFT/LC (EXCEPTIONAL CASES)/SWIFT TELE TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION AND 10% AFTER SUCCESSFUL INSTALLATION & COMMISSIONING.

   B) BANK CHARGES ON LC/SD (WITHIN INDIA APPLICANT ACCOUNT AND OUTSIDE INDIA TO BENEFICIARY ACCOUNT).

   PAYMENT TERMS FOR INDIAN FIRMS

   A) 100% PAYMENT THROUGH CROSSED ACCOUNT PAYEE CHEQUE / ELECTRONIC TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER & CONDITION AND SUCCESSFUL INSTALLATION & COMMISSIONING.

   B) ENSURE MENTIONING

   i) BANK DETAILS OF THE BENEFICIARY, GST NO. AND PAN NUMBER

   ii) FULL NAME AND ADDRESS OF THE BENEFICIARY ON WHOM ORDER HAS TO BE PLACED

10. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.

11. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.

12. THE INSTITUTE SHALL PROVIDE THE CONCESSIONAL CUSTOMS DUTY AND EXCISE DUTY EXEMPTION CERTIFICATE AS PER GOVT. NOTIFICATION NO. 51/96 CUSTOMS DATED: 23.07.1996 AND CENTRAL EXCISE DUTY EXEMPTION IN TERMS OF GOVT. NOTOFICATION NO.
    10/97 – CENTRAL EXCISE DATED: 01.03.1997 AS AMENDED FROM TIME TO TIME.

13. **LIQUIDATED DAMAGES**: THE STORES SHOULD BE DELIVERED/ DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%. ALTERNATIVELY, THE ORDER WILL BE CANCELLED
    AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.

14. **PATENT RIGHTS**: THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRD
    PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.
15. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL ONLY BE INVITED FOR PARTICIPATION IN THE PRICE BID.

16. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BID HAS NOT BEEN ACCEPTED BY THE INSTITUTE.

17. CONDITIONAL OFFER WILL NOT BE ACCEPTED.

18. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.

19. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-

    A) INCOME TAX RETURN (3 YRS) AND LATEST SALES TAX RETURN (GST No.), AND PAN NO.

    B) BANKER'S SOLVENCY CERTIFICATE

    C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

DESCRIPTION	JAN. TO MARCH	APRIL TO JUNE	JULY TO SEPT.
GROSS REVENUE			
PROFIT BEFORE TAX			
PROFIT AFTER TAX			
RETURN ON INVESTED			
CAPITAL (ROIC)			

D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

20. **WARRANTY/ GUARANTEE**: THIS COMPREHENSIVE WARRANTY/ GUARANTEE SHALL REMAIN VALID FOR **36 MONTHS** AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION.

21. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BID HAS NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.

22. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO
Office of Professor-in-Charge,
DHI Centre of Excellence on Advanced Manufacturing Technology,
(Inside Steel Technology Centre),
Indian Institute of Technology Kharagpur,
721 302, West Bengal, India
AND ACKNOWLEDGEMENT TO BE OBTAINED.

IMPORTANT

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself 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.

2. Promptly make arrangements for repair and/ or replacement of any damaged item (s) irrespective of settlement of claim.

3. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.

4. For any query pertaining to this bid document correspondence may be addressed to

Professor-in-Charge,
DHI Centre of Excellence on Advanced Manufacturing Technology,
(Inside Steel Technology Centre),
Indian Institute of Technology Kharagpur 721 302,
West Bengal, India
E-mail: *coeamt@iitkgp.ac.in*

LAST DATE FOR SUBMISSION OF SEALED BIDS: 15.10.2018 (Monday) at 17:00 Hrs (Indian time)

1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified government holidays.

2) Fax, e-mail Tender will not be accepted.

3) The General Terms and Conditions as stated above relate to supply of stores/ equipment/ assets etc. and for specific service other terms and conditions of the Institute will apply.
